

# CONSTRUCTION NOTICE FOR HEPPNER-LICK 138- kV TRANSMISSION LINE ADJUSTMENT PROJECT



PUCO Case No. 21-1085-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.

November 22, 2021

## CONSTRUCTION NOTICE

AEP Ohio Transmission Company, Inc. (AEP Ohio Transco)  
Heppner-Lick 138-kV Transmission Line Adjustment Project

4906-6-05

AEP Ohio Transmission Company, Inc. (“AEP Ohio Transco” or 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

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 Construction Notice.

The Company is proposing the Heppner-Lick 138 kV Transmission Line Adjustment Project (“Project”) in Lick Township, Jackson County, Ohio. The Project involves replacing and relocating two existing wood monopole structures with new steel monopole structures. The approximately 0.1-mile line relocation is needed to re-terminate the existing Heppner-Lick 138 kV transmission line (built to 138 kV standards but currently operating at 69 kV) to a new location at Lick Station (previously approved by the OPSB in Case No. 21-0591-EL-BNR).

The Project meets the requirements for a Construction Notice (“CN”) because it is within the types of projects defined by Item (1)(a) of **Appendix A** to OAC 4906-1-01, **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:***

***(a) Line(s) not greater than 0.2 miles in length.***

The Project has been assigned PUCO Case No. 21-1085-EL-BNR.

#### B(2) Statement of Need

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

The Project is necessary to accommodate the expansion of Ohio Power Company's Lick Station. The Station expansion is necessary to address asset conditions at the Station. As a result of the Station expansion work, two 138kV line assets need to be relocated. Moving the lines to their new positions allows AEP to address asset performance, condition, and risk needs identified at Lick Station. Without the Project, the Lick Station expansion cannot occur. As the assets within the substation continue to deteriorate, there is an increased risk of outage to customers in the area. Lick Station directly serves approximately 2500 customers and 8 MVA of load. All work will take place on Ohio Power Company property.

The Lick station rebuild project was presented and reviewed with stakeholders at the October 28th, 2018 and the December 18, 2019 PJM SRRTEP Western meetings and was subsequently assigned PJM project number S2154 (**Appendix B**). The Project is not listed in the Company's Long Term Forecast, as the Company was unaware of the need for the Project at the time of the supplemental Long Term Forecast, and also the Project does not result in a new circuit or station.

### **B(3) Project Location**

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

Figure 1 in **Appendix A** shows the location of the Project in relation to existing transmission facilities on a United States Geological Survey 1:24,000 topographic quadrangle (Jackson OH, 1978; Wellston OH, 1972). Figure 2 in **Appendix A** identifies the Project components on aerial imagery from May 2020 (Esri World Imagery, Clarity).

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

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

Due to the location of existing transmission facilities, no other alternatives were considered for the Project. Additionally, no residences are located within 1,000 feet of the Project, no wetland or stream impacts are anticipated and no tree clearing will be required for the Project.

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

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

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

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

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

The Company anticipates construction of the Project to begin in March 2022 and be in-service by December 2022.

#### **B(7) Area Map**

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

Figure 1 included in **Appendix A** identifies the location of the Project area on a United States Geological Survey 1:24,000 quadrangle map (Jackson OH, 1978; Wellston OH, 1972). Figure 2 in **Appendix A** is an aerial map of the Project area (Esri World Imagery, Clarity May 2020).

To visit the Project from Columbus, take I-71 South towards Cincinnati for approximately 4.5 miles. Take exit 101 onto I-270 East and continue for 2 miles. Take exit 52 onto US-23 South toward Circleville and continue for 40 miles. Continue on US-35/US-50 East for approximately 29 miles and follow signs for Jackson and Athens. Turn right onto McCarty Lane and continue west to the traffic circle and take the first exit onto Acy Avenue and continue for 0.2-mile. Turn left onto Industry Drive and continue for 0.7-mile and arrive at Lick Station on the right. The coordinates of this location are latitude 39.043210, longitude -82.609570.

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

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

A list of properties required for the Project are provided in the table below.

<b>Property Parcel Number</b>	<b>Easement Agreement/Option Obtained (Yes/No)</b>
728226001	Company owned



## **B(9) Technical Features**

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

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

The Project is planned to include:

Voltage:	138kV
Conductors:	(3) CURLEW 1033 kCM ACSR 54/7
Static Wire:	7#8 Alumoweld AW 7
Insulators:	Polymer
ROW Width:	100-foot
Structure Types:	(2) Dead-end single steel pole structures

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. The discussion shall include:

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

Not applicable. There are no occupied residences or institutions located within 100 feet of the Project.

## **B(9)(c) Project Costs**

The estimated capital cost of the project.

The estimated capital cost of the Project, comprised of applicable tangible and capital costs, is approximately \$465,000 (Class 4 estimate). Pursuant to the PJM OATT, the costs for this Project will be recovered in the AEP Ohio Transmission Company's FERC formula rate (Attachment H-20 to the PJM OATT) and allocated to the AEP Zone.

## **B(10) Social and Economic Impacts**

The applicant shall describe the social and ecological impacts of the project.

**B(10)(a) Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.**

The Project is in Lick Township, Jackson County, Ohio. Land use at the Project location is industrial, consisting of an electric transmission substation and transmission lines. Land use within the vicinity of the Project consists of roadway infrastructure and wooded areas. However, no tree clearing is anticipated for the Project. There are no known residences within 100 feet of the Project.

According to the Ohio Department of Transportation, Transportation Information Mapping System, US-35 is a state scenic byway, known as the Welsh Scenic Byway.

According to the Ohio Department of Natural Resources (ODNR) Land and Facilities Map Viewer there are no lands or facilities under their jurisdiction within 1,000 feet of the Project.

There are no known parks or other recreational resources within 1,000 feet of the Project.

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

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

According to the Jackson County Auditor's Office, as of November 15, 2021, the parcels crossed by the Project are not registered as Agricultural District land. Additionally, the Project does not cross active agricultural row crop land (**Appendix A**, Figure 2).

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

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

The Company's consultant completed Phase I Archaeological and Phase I History/Architectural surveys and coordinated with the State Historic Preservation Office ("SHPO"). The Company recommended that the Project will have no adverse effect on historic properties and no further cultural resource work would be necessary and SHPO agreed with that recommendation. The results of the coordination with SHPO are provided in **Appendix C**.

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

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

A NPDES permit was issued (OGC03835\*AG) on September 28, 2021, by the Ohio Environmental Protection Agency for authorization of construction storm water discharge under NPDES General Permit for Discharges of Storm Water Associated with Construction Activity OHC000005, and the Company will implement and maintain best management practices as outlined in the Project-specific Storm Water Pollution Prevention Plan to minimize erosion and sediment to Project surface waters during storm events.

The Company's consultant completed a wetland delineation and stream identification field review for the Project (**Appendix D**). Four streams (one perennial, one intermittent, and two ephemeral) and two palustrine emergent (PEM) wetlands were identified within the study area. These streams and wetland will be avoided. Therefore, impacts to aquatic resources are not anticipated and Clean Water Act Section 401/404 permits will not be needed.

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

#### **B(10)(e) Threatened, Endangered, and Rare Species**

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

A coordination letter was submitted to the United States Fish and Wildlife Service ("USFWS") Ohio Ecological Services Field Office on July 10, 2020 seeking technical assistance on the Project for potential impacts to threatened or endangered species. In a response email dated July 15, 2020, the USFWS noted the potential for the Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) to occur within the Project area. The USFWS recommended that if tree removal was required for the Project, it be limited to the time between October 1 and March 31 to avoid the potential for take of the Indiana bat and northern long-eared bat. The Project is not anticipated to require tree clearing, however, if required, the Company would plan to complete tree clearing during the recommended timeframe, and if implementation of the seasonal tree cutting recommendation is not be feasible, the USFWS will be contacted for further guidance.

The USFWS stated that due to the Project type, size, and location, no adverse effects to other federally endangered, threatened, or proposed species or designated critical habitat are anticipated.

A coordination letter was submitted to the ODNR on July 10, 2020 seeking technical assistance on the Project for potential impacts to threatened or endangered species. In a response dated September 24, 2020, ODNR Division of Wildlife ("DOW") noted the potential for the Indiana bat

(state endangered and federally endangered), northern long-eared bat (state endangered and federally threatened), little brown bat (*Myotis lucifugus*) (state endangered), and the tricolored bat (*Perimyotis subflavus*) (state endangered) to occur within the Project area. ODNR-DOW recommended that if tree removal was required for the Project, it be limited to the time between October 1 and March 31 to avoid potential for take of the state and/or federally listed bat species. ODNR-DOW also recommended conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH  $\geq 20$  if possible. The Project is not anticipated to require tree clearing, however, if required, the Company would plan to complete tree clearing during the recommended timeframe, and if implementation of the seasonal tree cutting recommendation is not be feasible, the ODNR will be contacted for further guidance.

The ODNR DOW recommended that the Company conduct a desktop review of the Project area to identify portals and potential hibernacula for state and federally-listed bat species. The Company's consultants completed a desktop review on October 20, 2021. According to the ODNR's Ohio Mine data, the Project abuts an abandoned underground coal mine and there is a historic air shaft and vertical mine shaft within a 0.25-mile radius of the Project. However, no trees are anticipated to be cleared for the Project.

The ODNR indicated the Project is within the range of little spectaclecase (*Villosa lienosa*) state endangered mussel. Impacts to mussels are not anticipated because in-water work is not planned.

The ODNR indicated the Project is within the range of the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish, and the lake chubsucker (*Erimyzon sucetta*) a state threatened fish. No impacts to the identified fish species are anticipated as no in-water work is proposed for the Project.

The ODNR indicated that the Project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species, and the midland mud salamander (*Pseudotriton montanus diastictus*), a state threatened species. Due to the location, the type of habitat within the Project area, and the type of work proposed, the ODNR stated that the Project is not likely to impact these species.

The ODNR indicated that the Project is within the range of the Northern Harrier (*Circus hudsonis*), a state endangered bird, and the Sandhill Crane (*Grus canadensis*), a state threatened bird. Based on the scope and location of the Project and nominal disturbance to herbaceous open space, breeding habitat for these species will not be affected by the Project and therefore, not impact the species.

Coordination letters from USFWS and ODNR are provided in **Appendix C**.

## **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.

Coordination letters were submitted to the USFWS and ODNR requesting a review of the Project and identification of areas of ecological concern. The ODNR Natural Heritage Database has records of a “Buttonbush shrub swamp plant community” and the Lick Conservation Site within a one-mile radius of the Project. These sites are located 0.25-mile south of the Project and will not be impacted.

A review of the Protected Areas Database of the United States, which is the official inventory of public parks and other protected areas in the United States and territories, did not identify protected areas within 1,000 feet of the Project. Additionally, based a review of the ODNR Lands and Facilities online map there are no natural areas and preserves, wildlife areas, parks, or forests within 1,000 feet of the Project.

A review of the National Conservation Easement Database and the USACE Regulatory In-lieu Fee and Bank Information Tracking System did not identify mapped easements or mitigation sites in the Project area.

The Project is not located within a flood hazard area (FEMA Flood Insurance Rate Map #39079C0161K, Effective Date December 18, 2009). Floodplains and floodways are shown on Figure 2 in **Appendix D**.

A wetland delineation and stream identification field review were completed for the Project by the Company’s consultant in April 2020. The results of the field review are presented in the Ecological Survey Report included in **Appendix D**. In general, the habitat encountered within the study area consisted of maintained transmission line ROW and facilities bordered by roadways and wooded areas. Four streams and two PEM wetlands were identified within the study area. These streams and wetlands will be avoided with no impacts anticipated for this Project.

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

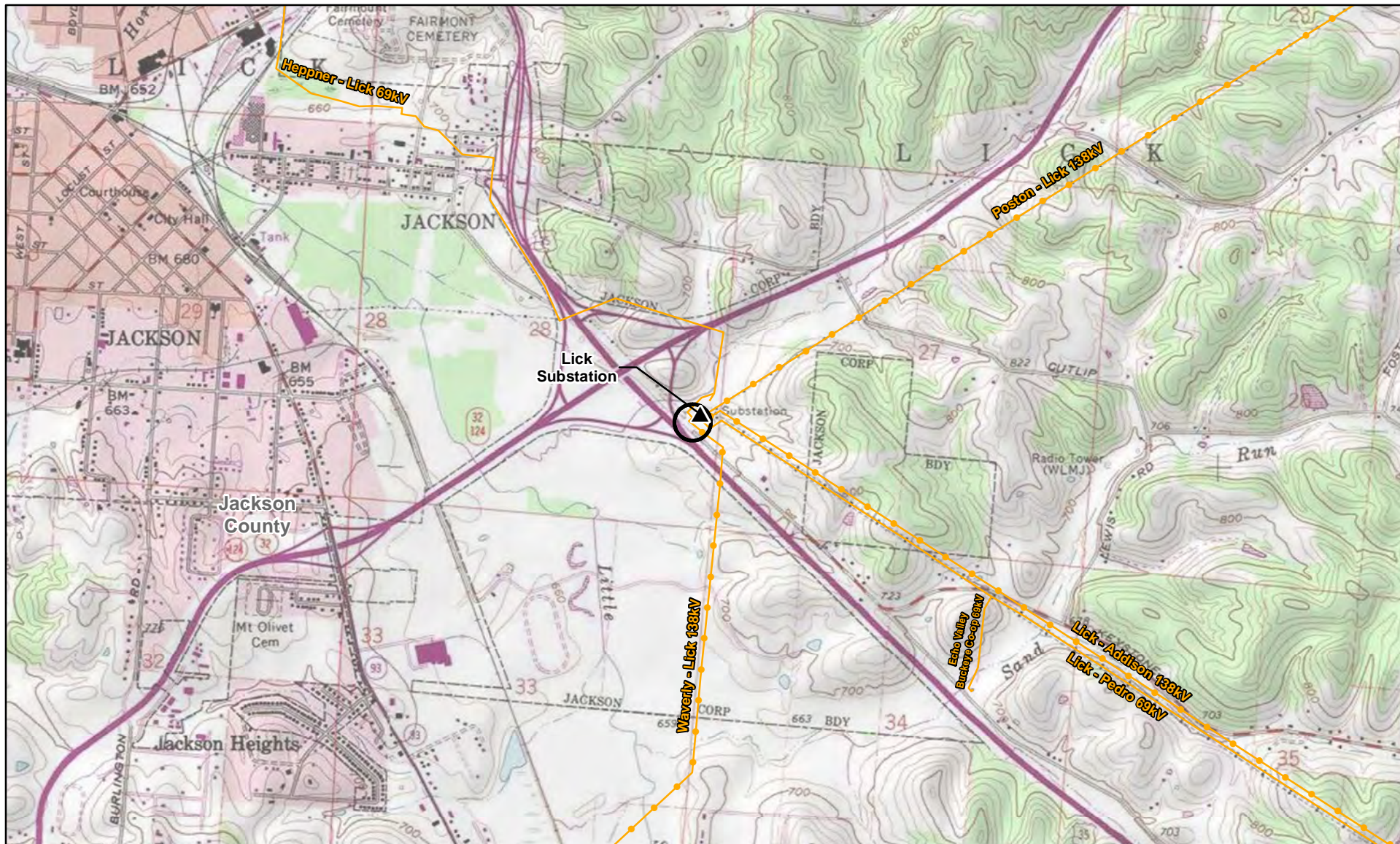
**Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.**

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

## **APPENDIX A**

### Project Maps





# Legend

- ▲ Existing Substation
- Existing 69 kV Transmission Line
- Existing 138 kV Transmission Line
- ▭ Project Area
- ▭ County Boundary

USGS Topographic (Jackson (1978) and Wellston (1977), Ohio), Esri ArcGIS Online, Accessed 11/2021.

NAD 1983 State Plane  
Ohio South Feet



November 03, 2021



## Figure 1 Project Location Map



Heppner-Lick 138 kV  
Transmission Line Relocation Project

0 2,000  
Feet





# Legend

- Proposed Heppner-Lick 138 kV Transmission Line
- Approved Waverly-Lick 138 kV Transmission Line
- Existing 69 kV Transmission Line
- Existing 138 kV Transmission Line
- Proposed Lick Station Expansion
- Existing Lick Station

Aerial Imagery, Ohio State Imagery Program (OSIP), 2020. Esri World Transportation, ArcGIS Online, Accessed 11/2021.

NAD 1983 State Plane  
Ohio South Feet

November 03, 2021



**Figure 2**  
**Aerial Map**



**Heppner-Lick 138 kV  
Transmission Line Relocation Project**

0 125 250 375 500  
Feet



## **APPENDIX B**

PJM Interconnection Submittal

## AEP Transmission Zone M-3 Process Lick Station Rebuild

**Need Number:** AEP-2018-OH012

**Process Stage:** Submission of Supplemental Project for inclusion in the Local Plan  
02/06/2020

**Previously Presented:**

Needs Meeting 10/28/2018

Solutions Meeting 12/18/2019

**Project Driver:**

Equipment Material/Condition/Performance/Risk

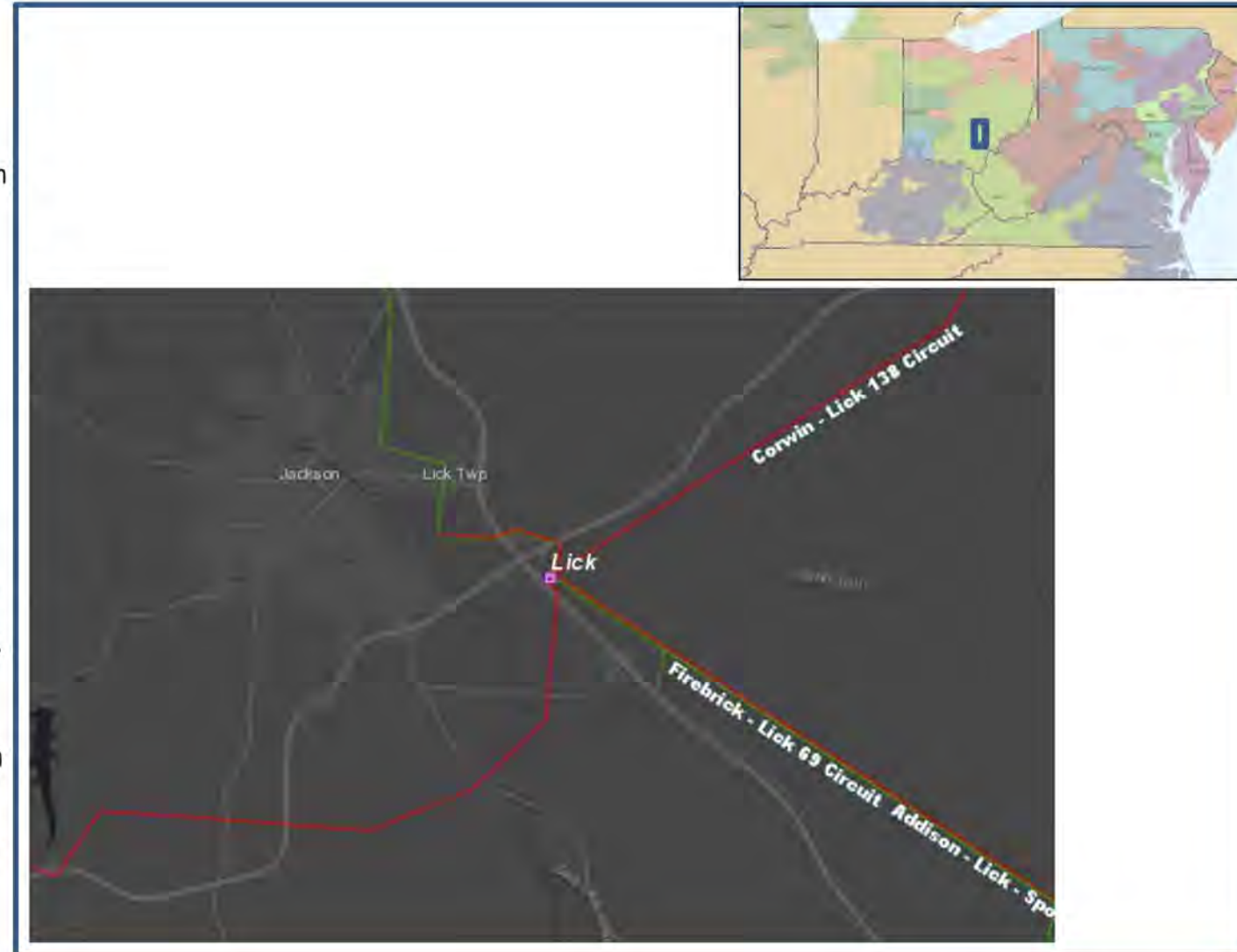
**Specific Assumption Reference:**

AEP Guidelines for Transmission Owner Identified Needs

**Problem Statement:**

At Lick substation there are six 69 kV circuit breakers with condition issues. CB's 61, 62, 65, 66, 67, and 69 are oil type breakers that were manufactured between 1956 - 1967. There is a potential for oil spills during routine maintenance and fault operations. In addition, spare parts are difficult to obtain. The breakers' fault operation counts are as follows: {61-126, 62-11, 65-26, 66-8, 67-19 and 69-4}. For most of these breakers, the number of fault operations exceed the manufacturers recommended number of 10.

There are three 138/69 kV, 18 MVA transformers at Lick. T#1 is a Westinghouse transformer manufactured in 1956. Transformers #2 and #3 are both GE transformers manufactured in 1950. All three transformers have maintenance issues with their LTCs and have significant oil leaks. In addition, loss of two of the transformers can load the remaining transformers tertiary winding above it's rating.



# AEP Transmission Zone M-3 Process Lick Station Rebuild

**Need Number:** AEP-2018-OH012

**Process Stage:** Submission of Supplemental Project for inclusion in the Local Plan 02/06/2020

## Selected Solution:

- At Lick station, replace the three existing 138/69-12kV transformers with two 138/12 kV transformers and one 138/69 kV transformer. The 69 kV bus will be rebuilt in the clear within the station due to constructability concerns. Three 69kV 40kA, 3000A CBs will be installed on the low side of transformer and 69 kV line exits. An additional 138kV 40kA, 3000A CB will be added at the station to separate the 138 kV circuits towards the City of Jackson and Don Marquis. **(S2154.1) Estimated Cost: \$8.3M**
- Relocate the Don Marquis – Lick 138 kV circuit associated with the station work at Lick. **(S2154.2) Estimated Cost: \$0.7M**
- Relocate the Firebrick – Lick 69 kV circuit associated with station work at Lick. **(S2154.3) Estimated Cost: \$0.8M**
- Relocate the Ironman – Lick 69 kV circuit associated with station work at Lick. **(S2154.4) Estimated Cost: \$0.5M**

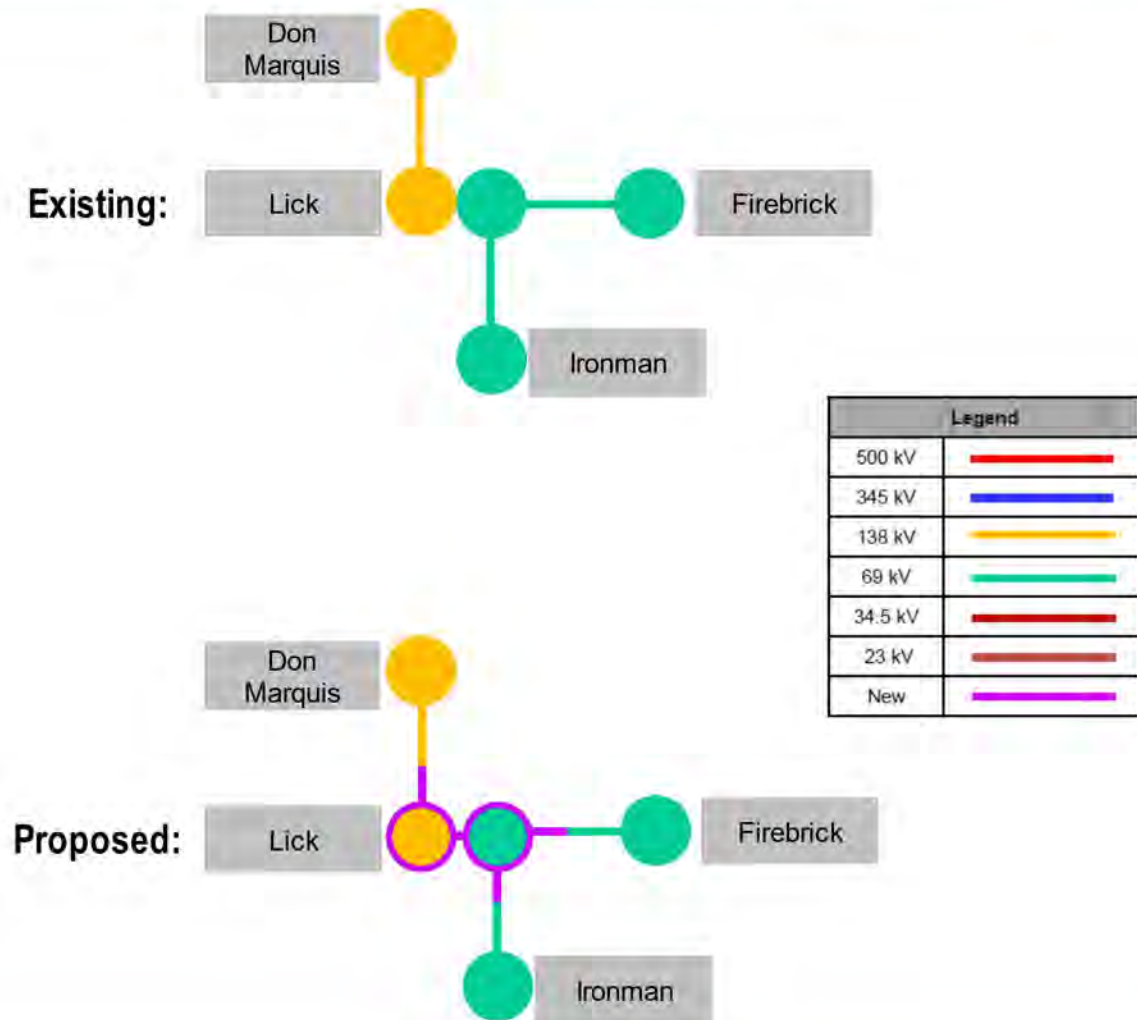
**Estimated Cost:** \$10.3 M

**Projected In-Service:** 02/15/2021

**Supplemental Project ID:** S2154.1-4

**Project Status:** Scoping

**Model:** N/A



## **APPENDIX C**

### Agency Correspondence





In reply, refer to  
2020-JAC-48137

April 23, 2020

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

**RE: Lick Station Expansion Project, Lick Township, Jackson County, Ohio**

Dear Mr. Weller:

This letter is in response to the correspondence received on April 20, 2020 regarding the proposed Lick Station Expansion Project, Lick Township, Jackson County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Cultural Resource Management Investigations for the Proposed 3.8 ha (9.3 ac) Lick Station Expansion Project in Lick Township, Jackson County, Ohio* by Weller & Associates, Inc. (2020).

A literature review, visual inspection, shovel probe and shovel test unit excavation was completed as part of the investigations. No previously identified archaeological sites are located within the project area, however, one site (Ohio Archaeological Inventory [OAI] #33JA0074) is located immediately adjacent to the project area. The site was not reidentified within the project area during this survey. One (1) new archaeological site was identified during the investigations. OAI#33JA0443, a small prehistoric lithic scatter, was not recommended eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with this recommendations and no further archaeological work is necessary.

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

Sincerely,

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

Krista Horrocks, Project Reviews Manager  
Resource Protection and Review

RPR Serial No: 1083839



# Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

## Office of Real Estate

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

September 24, 2020

Kristen Vonderwish  
GAI Consultants  
6000 Town Center Blvd., Suite 300  
Canonsburg, PA 15317

**Re:** 20-709; Lick Station 138 kV Transmission Substation Project

**Project:** The proposed project involves rebuilding the station by replacing failing, antiquated equipment within the extents of the existing station with associated line work.

**Location:** The proposed project is located in Lick Township, Jackson 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 records at or within a one-mile radius of the project area:

Buttonbush shrub swamp plant community  
Lick Swamp Conservation Site

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

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

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



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

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

The DOW also recommends that a desktop or field-based habitat assessment is conducted to determine if there are potential hibernaculum(a) present within the project area. Habitat assessments should be conducted in accordance with the current USFWS "Range-wide Indiana Bat Survey Guidelines" and submitted to Sarah Stankavich, [sarah.stankavich@dnr.state.oh.us](mailto:sarah.stankavich@dnr.state.oh.us) if potential hibernacula are present within .25 miles of the project area. If a potential 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 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 little spectaclecase (*Villosa lienosa*), a state endangered mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2020), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2020) can be found at: <http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>



The project is within the range of the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish, and the lake chubsucker (*Erimyzon sucetta*) a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

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

The project is within the range of the northern harrier (*Circus hudsonis*), 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 May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds, they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on this species.

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

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

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

[http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List\\_8\\_16.pdf](http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf)



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

Mike Pettegrew  
Environmental Services Administrator (Acting)

**From:** Ohio, FW3 <ohio@fws.gov>  
**Sent:** Wednesday, July 15, 2020 8:48 AM  
**To:** Kristen Vonderwish; Joshua Noble  
**Cc:** nathan.reardon@dnr.state.oh.us; Parsons, Kate  
**Subject:** Lick Station 138 kV Transmission Substation Project, Jackson Co

## EXTERNAL E-MAIL MESSAGE



UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. Fish and Wildlife Service  
Ecological Services Office  
4625 Morse Road, Suite 104  
Columbus, Ohio 43230  
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2020-TA-1824

Dear Ms. Vonderwish,

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

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees  $\geq 3$  inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees  $\geq 3$  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  $\geq 3$  inches dbh cannot be avoided, we recommend removal of any trees  $\geq 3$



inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nleb/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

**Section 7 Coordination:** If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

**Stream and Wetland Avoidance:** Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus it is important to conserve the functions and values of the remaining wetlands in Ohio ([https://epa.ohio.gov/portals/47/facts/ohio\\_wetlands.pdf](https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf)). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

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

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

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Patrice M. Ashfield". The signature is stylized with a large, looping initial "P" and a long, sweeping underline.

Patrice M. Ashfield  
Field Office Supervisor

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



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

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

The DOW also recommends that a desktop or field-based habitat assessment is conducted to determine if there are potential hibernaculum(a) present within the project area. Habitat assessments should be conducted in accordance with the current USFWS "Range-wide Indiana Bat Survey Guidelines" and submitted to Sarah Stankavich, [sarah.stankavich@dnr.state.oh.us](mailto:sarah.stankavich@dnr.state.oh.us) if potential hibernacula are present within .25 miles of the project area. If a potential 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 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 little spectaclecase (*Villosa lienosa*), a state endangered mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2020), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2020) can be found at: <http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>



The project is within the range of the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish, and the lake chubsucker (*Erimyzon sucetta*) a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

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

The project is within the range of the northern harrier (*Circus hudsonis*), 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 May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds, they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on this species.

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

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

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

[http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List\\_8\\_16.pdf](http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf)

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

Mike Pettegrew  
Environmental Services Administrator (Acting)

## **APPENDIX D**

### Ecological Survey Report



## Ecological Survey Report

AEP Ohio Transmission Company  
Lick Station Rebuild Project  
Jackson County, Ohio

GAI Project Number: C170352.88, Task 001

May 2021

Prepared for:  
American Electric Power Service Corporation  
8600 Smiths Mill Road  
New Albany, Ohio 43054

Prepared by:  
GAI Consultants, Inc.  
Canton Office  
3720 Dressler Road Northwest  
Canton, Ohio 44718

Report Authors:

---

Kristen L. Vonderwish  
Project Environmental Specialist

---

Joshua J. Noble, MS  
Senior Environmental Manager



BOUNDLESS ENERGY™

## Table of Contents

1.0	Introduction .....	2
2.0	Methods .....	2
2.1	Wetlands .....	2
2.1.2	Onsite Inspection .....	2
2.2	Waterbodies .....	4
2.2.1	Preliminary Data Gathering .....	4
2.2.2	Onsite Inspection .....	4
2.3	Rare, Threatened, and Endangered Species .....	4
2.3.1	Preliminary Data Gathering .....	4
2.3.2	Onsite Inspection .....	5
3.0	Results .....	5
3.1	Wetlands .....	5
3.1.1	Preliminary Data Gathering .....	5
3.1.2	Onsite Inspection .....	5
3.1.3	Regulatory Discussion .....	5
3.2	Waterbodies .....	6
3.2.1	Preliminary Data Gathering .....	6
3.2.2	Onsite Inspection .....	6
3.2.3	Regulatory Discussion .....	6
3.3	Rare, Threatened, and Endangered Species .....	6
3.3.1	Preliminary Data Gathering .....	6
3.3.2	Onsite Inspection .....	7
4.0	Conclusions .....	7
5.0	References .....	8
Table 1	Wetlands Identified Within the Project Study Area	
Table 2	Waterbodies Identified Within the Project Study Area	
Table 3	ODNR and USFWS RTE Species and Critical Habitat Review Results	
Figure 1	Project Location Map	
Figure 2	Resource Location Map	
Figure 3	Stream Eligibility Map	
Appendix A	Photographs	
Appendix B	Wetland Determination Data Forms	
Appendix C	Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms	
Appendix D	Primary Headwater Habitat Evaluation (HHEI) Data Forms & Qualitative Habitat Evaluation Index (QHEI)	
Appendix E	ODNR and USFWS Correspondence	



## 1.0 Introduction

GAI Consultants, Inc. (GAI), on behalf of American Electric Power Ohio Transmission Company (AEP), completed an ecological survey for the Lick Station Rebuild Project (Project) located in Jackson County, Ohio (OH). The proposed Project involves rebuilding the station by replacing failing, antiquated equipment within the extents of the existing station with associated line work. Ecological survey was conducted on April 15, 2020. The Project study area consisted of an approximately 12-acre area, as shown in Figure 1.

The Project study area is located within the Headwaters Little Salt Creek (United States Geological Survey [USGS] Hydrologic Unit Code [HUC] #050600020801) watershed.

This report details the results of the ecological surveys regarding the existence of aquatic resources within the Project area (Figure 2). The United States Army Corps of Engineers (USACE) Wetland Determination Data Forms are provided in Appendix B.

## 2.0 Methods

### 2.1 Wetlands

The 1987 USACE *Corps of Engineers Wetlands Delineation Manual* (Wetlands Delineation Manual) (USACE, 1987) and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region, Version 2.0* (Regional Supplement) (USACE, 2012) describe the methods used to identify and delineate wetlands that fall under the jurisdiction of the USACE. This approach recognizes the three parameters of wetland hydrology, hydrophytic vegetation, and hydric soils to identify and delineate wetland boundaries. In accordance with the Wetlands Delineation Manual and Regional Supplement, GAI completed preliminary data gathering and onsite inspections.

#### 2.1.1 Preliminary Data Gathering

The preliminary data gathering is used to compile and review information that may be helpful in identifying wetlands and/or areas that warrant further inspection during the investigation. The preliminary data gathering includes a review of the following:

- ▶ USGS 7.5-minute topographic mapping for Jackson (USGS, 1978) and Wellston (1977), OH (Figure 1);
- ▶ United States Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) mapping (USFWS, 2020) (Figure 2).
- ▶ Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (FEMA, 2020) (Figure 2).
- ▶ United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS, 2019) soil mapping (Figure 2).

Topographic mapping is used to identify mapped streams and the overall shape of the landscape in the Project area to determine potential locations for wetlands, such as floodplains and depressions. NWI mapping is used to determine locations where probable wetlands are located based on infrared photography. Soil mapping is reviewed to determine the location and extent of mapped hydric soils that have a high probability of containing wetlands.

#### 2.1.2 Onsite Inspection

The methodology described in the Regional Supplement identifies areas meeting the definition of a wetland by evaluating three parameters: hydrology, vegetation, and soil. During the on-site



inspection, GAI staff traversed the Project study area on foot to determine if indicators of wetlands were present. When indicators of wetlands are observed, an observation point is established, and a Data Form is completed to determine if all wetland indicators are present.

The presence of wetland hydrology is determined by examining the observation point for primary and secondary indicators of wetland hydrology. The presence of any primary indicator signifies the presence of wetland hydrology, or the presence of two or more secondary indicators signifies the presence of wetland hydrology.

Vegetation is characterized by four strata. This includes trees (woody plants, excluding vines, three inches or more [ $\geq 3.0$ "] in diameter at breast height [DBH]), saplings/shrubs (woody plants, excluding vines, less than three inches [ $< 3.0$ "] DBH and greater than or equal to [ $\geq$ ] 3.28 feet tall), herbs (non-woody plants, regardless of size, and all other plants less than [ $<$ ] 3.28 feet tall), and woody vines (greater than 3.28 feet tall). In general, trees and woody vines are sampled within a 30-foot (30.0') radius, saplings and shrubs are sampled within a 15-foot (15.0') radius, and herbs are sampled within a five-foot (5.0') radius.

When evaluating an area for the presence of hydrophytes, classification of the indicator status of vegetation is based on *The National Wetland Plant List: 2016 Update of Wetland Ratings* (Lichvar et al., 2016). The list of possible indicator statuses for plants is as follows:

- ▶ Obligate Wetland (OBL) – OBL plants occur in standing water or in saturated soils.
- ▶ Facultative Wetland (FACW) – FACW plants occur in areas of prolonged flooding or require standing water or saturated soils but may on rare occasions, occur in non-wetlands.
- ▶ Facultative (FAC) – FAC plants occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats.
- ▶ Facultative Upland – Facultative Upland plants occur in xeric or mesic non-wetland habitats.
- ▶ Obligate Upland – Obligate Upland plants rarely occur in water or saturated soils.

The presence of hydrophytic vegetation is determined by a Rapid Test, Dominance Test or Prevalence Index. The Rapid Test finds a vegetation community to be hydrophytic if all dominant species are OBL or FACW. Hydrophytic vegetation is considered present based on the Dominance Test if more than 50 percent of dominant species are OBL, FACW, or FAC. The Prevalence Index weighs the total percent of vegetation cover based on the indicator status of each plant. Hydrophytic vegetation is considered present when the Prevalence Index is less than or equal to ( $\leq$ ) 3.0 (USACE, 2012).

To determine the presence of hydric soils, soil data is collected by digging a minimum 16 inch (16.0") deep soil pit, unless a restrictive layer is present. The soil profile is studied and described, while possible hydric indicators are examined. Soil indicators described in the Wetlands Delineation Manual and Regional Supplement are used to determine the presence of hydric soils. The presence of these indicators signifies a hydric soil.

If all parameters including wetland hydrology, a dominance of hydrophytic vegetation, and hydric soils are identified at a single observation point, the area is determined to be a wetland. Once a wetland is identified, the boundary is delineated.

Wetland boundaries are determined by looking for locations in which one of the three wetland indicators would transition into an upland characteristic. When the transition is identified, a Data Form is completed in the Upland Area. Wetland boundaries are marked in the field using pink flagging labeled "WETLAND DELINEATION." The locations of the flags are recorded using a Global Positioning System (GPS) unit. Each wetland is codified with a unique identifier indicating the feature type and number (such as W001).



Wetlands are classified using the *Classification of Wetlands and Deepwater Habitats of the United States* as modified for NWI Mapping Convention. This system classifies wetlands based on topographic position and vegetation type. Palustrine system wetlands found within the study area are classified as Palustrine Emergent (PEM), Palustrine Scrub-Shrub, Palustrine Forested (PFO), or Palustrine Unconsolidated Bottom (PUB) based on aerial coverage of the vegetative community across the extent of the wetland boundary (Cowardin et al., 1979).

## 2.2 Waterbodies

As with wetlands, Sections 404 and Section 401 of the Clean Water Act (CWA) and state regulations protect waterbodies in OH. Generally, waterbodies are defined as environmental features that have defined beds and banks, ordinary high water mark (OHWM), and contain flowing or standing water for at least a portion of the year.

### 2.2.1 Preliminary Data Gathering

During the preliminary data gathering, the USGS 7.5-minute topographic mapping is examined for the presence of mapped waterbodies including perennial and intermittent streams. In addition, the topographic mapping is used to identify areas likely to contain unmapped waterbodies including ephemeral streams (USGS, 1977, 1978) (Figure 1).

The OEPA 401 Water Quality Certification for the 2017 Nationwide Permits Stream Eligibility Web Map (OEPA, 2017) determined eligibility for coverage under the 401 Water Quality Certification (WQC) for the 2017 Nationwide Permits (NWP). Furthermore, the map identifies ineligible areas that may require a CWA Section 401 individual permit from the OEPA should stream impacts occur within the Project area (OEPA, 2017) (Figure 3).

### 2.2.2 Onsite Inspection

During the onsite inspection, GAI staff traversed the study area, concurrently with the wetland inspection, whereby waterbodies are identified. Waterbodies are identified on the morphological and hydrologic characteristics of the channel and the presence of aquatic macroinvertebrates.

When a waterbody is identified, field measurements are collected. The measurements include top of bank width, top of bank depth, pool depth, water depth, OHWM width, and OHWM depth. A detailed description of substrate composition is recorded. Waterbodies are delineated using white flagging marked with the GAI stream code (such as S001). The tops-of-bank for streams wider than 10 feet (>10.0') are delineated, while the centerline of smaller streams is delineated. The locations of the flags are recorded using a sub-meter-capable hand-held GPS unit.

## 2.3 Rare, Threatened, and Endangered Species

GAI conducts a literature review of potential Rare, Threatened, and Endangered (RTE) species in the vicinity of the Project study area. Potential habitat for RTE species are noted during the ecological survey.

### 2.3.1 Preliminary Data Gathering

A request for review of the Ohio Natural Heritage Database is submitted to the Ohio Department of Natural Resources (ODNR) to determine if state-listed Threatened or Endangered species occur within a one-mile (1.0 mi) radius of the Project area. A request is submitted to the USFWS Ohio Ecological Services Field Office to determine if federally-listed Threatened or Endangered species occur within the vicinity of the Project area.



### **2.3.2 Onsite Inspection**

During the onsite inspection, GAI staff traverse the study area in conjunction with the wetland and waterbody inspections to determine if suitable habitat for state- and/or federally-listed RTE species is present within the study area.

## **3.0 Results**

### **3.1 Wetlands**

#### **3.1.1 Preliminary Data Gathering**

Desktop review of available USFWS NWI digital data for the Project revealed no NWI mapped wetlands located within the Project study area (USFWS, 2017).

According to the USDA-NRCS soil mapping, three (3) soil map units are located within the Project study area (Figure 2). One of the soil map units (St- Stendal silt loam) is classified as hydric or known to contain hydric inclusions.

#### **3.1.2 Onsite Inspection**

Two PEM wetlands were identified within the Project study area.

#### **3.1.3 Regulatory Discussion**

The USACE guidance classifies waters of the United States (WOTUS) into four categories: territorial seas and traditional navigable waters (TNWs), tributaries, lakes, ponds, and impoundments of jurisdictional waters, and adjacent wetlands. Territorial seas and TNWs include large rivers and lakes and tidally-influenced waterbodies used in interstate or foreign commerce. Tributaries include naturally occurring perennial and intermittent rivers and streams that contribute surface flow to TNWs in a typical year. Tributaries also include ditches if they satisfy the flow conditions of the perennial and intermittent tributary definition, were constructed in or relocate a tributary, or were constructed in an adjacent wetland and contribute perennial or intermittent flow to a TNW in a typical year. Lakes and ponds, and impoundments of jurisdictional waters are standing bodies of open water that contribute surface water flow to a TNW or territorial sea in a typical year. Adjacent wetlands are wetlands that physically touch (abut) other jurisdictional waters or are inundated by jurisdictional waters in a typical year. Wetlands physically separated from other jurisdictional waters by an artificial berm, dike, or similar artificial feature must have a direct hydrologic surface connection to the jurisdictional water in a typical year to be considered adjacent (USACE 2019).

The status of wetlands is determined partly based on the classification of the waterbody that the wetland is associated with, and the degree of that association. Wetlands that abut or are adjacent to WOTUS are jurisdictional.

Wetlands that do not exhibit an association with any surface water are categorized as non-jurisdictional under present USACE guidance and policy (USACE 2019). These wetlands are regulated by the OEPA Division of Surface Water and may require an Isolated Wetland Permit.

As regulated by Ohio Administrative Code (OAC) rules 3745-1-50 through 3745-1-54, wetlands were also evaluated using the ORAM to determine the appropriate wetland category. Any wetland score that fell within a gray zone between categories was scored one of two ways. Either the wetland was assigned to the higher of the two categories or it was assessed using a non-rapid method to determine its quality (Mack, 2001). The category assigned to a particular wetland determines the requirement, if any, for additional levels of protection administered by the OEPA.



## 3.2 Waterbodies

### 3.2.1 Preliminary Data Gathering

Desktop review of the available USGS topographic mapping revealed no previously mapped stream segments located within the Project study area (Figure 1). Desktop review of OEPA's Stream Eligibility Web Map revealed the Project is located within an Eligible area for automatic 401 WQC coverage (Figure 3).

### 3.2.2 Onsite Inspection

Four (4) stream segments were identified within the Project study area. Information on the delineated waterbodies and their classifications can be found in Table 1, and photographs of the identified resources are included in Appendix A.

### 3.2.3 Regulatory Discussion

As with wetlands, present USACE guidance and policy determines the jurisdictional status of waterbodies identified during the Project. TNWs and tributaries are considered jurisdictional.

Streams are generally defined as environmental features that have defined beds and banks, an OHWM, and contain flowing or standing waters for at least a portion of the year (USACE 2005). Streams were classified as perennial, intermittent, or ephemeral based upon presence of flow, estimated duration of flow, stream bed characteristics, and presence of aquatic biota. The USACE Jurisdictional Determination Form Instructional Guidebook (USACE, 2007) and the revised definition of "Waters of the United States" (USACE 2019) were used to determine stream classification and flow status.

As regulated by OAC Chapter 3745-1-24, streams were also assessed according to OEPA guidance using either the HHEI for watersheds less than one square mile (<1.0 mi<sup>2</sup>) in size, or the Qualitative Habitat Evaluation Index (QHEI) for watersheds between one and twenty square miles (1.0-20.0 mi<sup>2</sup>) in size.

Although ephemeral streams are no longer regulated by the USACE, the Ohio EPA considers ephemeral streams as "waters of the state," and thus regulated according to the State's 401 Water Quality Standards.

## 3.3 Rare, Threatened, and Endangered Species

### 3.3.1 Preliminary Data Gathering

A desktop review of ODNR, Division of Wildlife's Ohio's Listed Species revealed 337 Endangered, Threatened, Species of Concern, and Species of Interest located in OH (ODNR, 2020). Eighteen of the state-listed species are considered federally endangered, and five are federally threatened.

A review of the USFWS *County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species for Ohio*, as well as the USFWS Information for Planning and Consultation website revealed three federally Endangered or Threatened species that may occur within the Project study area (USFWS, 2018). The list of species includes the following:

- ▶ Indiana bat (*Myotis sodalis*) – Endangered;
- ▶ Northern long-eared bat (*Myotis septentrionalis*) – Threatened.

Additionally, there are two (2) migratory bird species that may occur within the Project study area.

The ODNR and USFWS consultation letters were submitted on July 9, 2020. A response from USFWS was received on July 15, 2020. A response from the ODNR was received on September 24, 2020. The USFWS and ODNR responses are included in Appendix E.

The USFWS identified that the Indiana bat and northern long-eared bat may be present in the vicinity of the Project. Potential impacts to these species will be determined by the schedule of Project construction and extent of tree clearing that is needed.

The ODNR identified one mussel species, two fish species, two reptile species, one amphibian species, and two bird species within range of the project area. The ODNR also identified that the entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), the little brown bat (*Myotis lucifugus*), and the tricolored bat (*perimyotis subflavus*). Potential impacts to bat species will be determined by the schedule of Project construction and extent of tree clearing that is needed. The ODNR also recommended that no in-water work in perennial streams be conducted from April 15 to June 30 to reduce potential impacts to indigenous aquatic species and their habitat. If no in-water work in a perennial stream is anticipated, the Project is unlikely to impact aquatic species. The ODNR stated that, due to the location, the type of habitat within the project area, and type of work proposed, the Project is not likely to impact the Timber rattlesnake (*Crotalus horridus*), Kirtland's snake (*Clonophis kirtlandii*), and Midland mud salamander (*Pseudotriton montanus diastictus*). A list of RTE species identified by the ODNR and USFWS responses is included as Table 3.

### 3.3.2 Onsite Inspection

Potential habitat for RTE species was evaluated within the Project study area. In general, the habitat encountered within the study area consisted of maintained transmission line right-of-way bordered by mixed deciduous forest, open fields, and PEM wetland. One perennial, one intermittent and two ephemeral streams were identified within the study area. Representative photographs of the identified habitat types are included in Appendix A.

## 4.0 Conclusions

An ecological survey was conducted within the Project study area on April 15, 2020. Four streams (One perennial, one intermittent and two ephemeral) were identified within the Project study area. Two wetlands were identified within the Project study area. Summaries of the delineated aquatic features are provided in Tables 1 and 2, and a map of their locations is depicted on Figure 2. Photographs of the wetland and stream features are included in Appendix A. Wetland Determination Data Forms documenting the investigation are provided in Appendix B, with HHEI/QHEI and ORAM Data Forms provided in Appendix C and D, respectively.

The jurisdictional status of these features are considered preliminary and should be confirmed with the USACE and state agencies through the JD process.



## 5.0 References

- Cowardin, D. M., V. Carter, F. C. Golet, and E. T. La Roe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Department of the Interior, Fish and Wildlife Service. Publication No. FWS/OBS 79/31. Washington, D.C.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. United States Department of the Army, United States Army Engineer Waterways Experiment Station. Technical Report Y-87-1. Vicksburg, Mississippi.
- Federal Emergency Management Agency. 2015. National Flood Hazard Layer Web Map Service (WMS). Available from <https://hazards.fema.gov/femaportal/wps/portal/NFHLWMSkmzdownload>.
- Lichvar, R. W., D.L. Banks N. C. Melvin, and W. N. Kirchner. 2016. The National Wetland Plant List: 2016 Update of Wetland Ratings. Phytoneuron 2016-30: 1-17. United States Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire, and BONAP, Chapel Hill, North Carolina. Available from <http://rsgisias.crrel.usace.army.mil/NWPL/>.
- Mack, John J. 2001. Ohio Rapid Assessment Methods for Wetlands Manual for Using Version 5.0. Ohio EPA Technical Bulletin Wetland/2001-1-1. Ohio Environmental Protection Agency, Division of Surface Water, 401 Wetland Ecology Unit, Columbus, Ohio.
- Ohio Administrative Code. 2011. State of Ohio: Water Quality Standards, Chapter 3745-1.
- Ohio Department of Natural Resources, Division of Wildlife. Ohio's Listed Species. <https://wildlife.ohiodnr.gov/portals/wildlife/pdfs/publications/information/pub356.pdf>.
- Ohio Department of Natural Resources, Division of Wildlife. State-Listed Species by County. <http://wildlife.ohiodnr.gov/species-and-habitats/state-listed-species/state-listed-species-by-county>.
- Ohio Environmental Protection Agency. 2006. Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI). Ohio EPA Division of Surface Water, Columbus, Ohio.
- Ohio Environmental Protection Agency. 2018. Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams. Version 4.0. Ohio EPA Division of Surface Water, Columbus, Ohio. 117 pp.
- Ohio Environmental Protection Agency, Division of Surface Water. 2017. 401 Water Quality Certification for the Nationwide Permits Stream Eligibility Web Map (2017 Reissuance). <http://oepa.maps.arcgis.com/apps/webappviewer/index.html?id=e6b46d29a38f46229c1eb47deefe49b6>.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for Jackson County, Ohio. Available online at <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- United States Army Corps of Engineers. 2005. Regulatory Guidance Letter No. 05-05. Ordinary High Water Mark Identification. Available from <http://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-05.pdf>.
- United States Army Corps of Engineers. 2007. *Jurisdictional Determination Form Instructional Guidebook*. Available from [http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa\\_guide/jd\\_guidebook\\_051207final.pdf](http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa_guide/jd_guidebook_051207final.pdf).
- United States Army Corps of Engineers. 2019. Definition of "Waters of the United States"—Recodification of Pre-Existing Rules, Federal Register, Title 33 CFR 328.

United States Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region Version 2.0*, ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-10-16. Vicksburg, Mississippi: United States Army Engineer Research and Development Center.

United States Fish and Wildlife Service. 2018. County Distribution of Federally-Listed Endangered, Threatened, and Proposed Species. United States Fish and Wildlife Service, Endangered Species, Midwest Region. Available from <https://www.fws.gov/midwest/endangered/lists/ohio-cty.html>.

United States Fish and Wildlife Service. 2017. National Wetlands Inventory for Ohio. Washington, D.C.: United States Fish and Wildlife Service, Division of Habitat and Resource Conservation. Available from <http://www.fws.gov/wetlands/Data/Mapper.html>.

United States Fish and Wildlife Service, Environmental Conservation Online System. Information for Planning and Consultation. <https://ecos.fws.gov/ipac/>.

United States Geological Survey. 1977. Wellston, Ohio 7.5-Minute Topographic Quadrangle (1:24,000).

United States Geological Survey. 1978. Jackson, Ohio 7.5-Minute Topographic Quadrangle (1:24,000).

## TABLES



Table 1  
Wetlands Identified Within the Project Study Area

Wetland ID <sup>1</sup>	Location		Isolated?	Habitat Type <sup>4</sup>	Delineated Area (acre) <sup>5</sup>	ORAM		Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude <sup>2</sup>	Longitude <sup>2</sup>				Score <sup>6</sup>	Category <sup>6</sup>					Temporary Matting Area (acre)	Permanent Impact Area (acre)
W001-PEM-CAT1	39.044055	-82.608323	No	PEM	0.381	25	1	N/A	N/A	N/A	N/A	TBD	TBD
W002-PEM-CAT1	39.043452	-82.60977	No	PEM	0.271	14	1	N/A	N/A	N/A	N/A	TBD	TBD
Total:					0.652	Total:							

Notes:

- 1
- GAI map designation.
- 2
- North American Datum, 1983.
- 3
- Jurisdictional status is the opinion of GAI and must be confirmed by USACE and state agencies through the JD process.
- 4
- PEM – Palustrine Emergent, PFO – Palustrine Forested; PUB – Palustrine Unconsolidated Bottom.
- 5
- Total acreage of wetland located within the Project study area.
- 6
- Interim scoring breakpoints for wetland regulatory categories for ORAM v 5.0 Score: Category 1 score 0 - 29.9; Category 1 or 2 gray zone ORAM score 30 - 34.9; Category modified 2 ORAM score 35 - 44.9; Category 2 ORAM score 45 - 59.9; Category 2 or 3 ORAM score 60 - 64.9; Category 3 ORAM score 65 - 100. OEPA Ecology Unit Division of Surface Water. *ORAM v. 5.0 Qualitative Score Calibration*. Dated August 15, 2000. [http://www.epa.ohio.gov/portals/35/401/oram50sc\\_s.pdf](http://www.epa.ohio.gov/portals/35/401/oram50sc_s.pdf).
- 7
- OAC Rule 3745-1-54(C)(2) defines Category 1 wetlands as wetlands which "...support minimal wildlife habitat, and minimal hydrological and recreation functions," and as wetlands which have "...hydrologic isolation, low species diversity, a predominance of non-native species, no significant habitat or wildlife use, and limited potential to achieve beneficial wetland functions." Category 2 wetlands are defined as wetlands which "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Degraded but Restorable Category 2 Wetlands are according to OAC Rule 3745-1-54(C) states that wetlands that are assigned to Category 2 constitute the broad middle category that "...support moderate wildlife habitat, or hydrological or recreational functions," but include "...wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." OAC Rule 3745-1-54(C)(2) defines Category 3 wetlands as wetlands which "...support superior habitat, or hydrological or recreational functions," and as wetlands which have "...high levels of diversity, a high proportion of native species, or high functional values."



Table 2  
Waterbodies Identified Within the Project Study Area

Stream ID <sup>1</sup>	Location		Stream Type	Stream Name	Delineated Length (feet) <sup>3</sup>	Bankfull Width (feet) <sup>4</sup>	OHWM Width (feet)	Field Evaluation			Ohio EPA 401 Eligibility <sup>8</sup>	Stream Crossing?	Proposed Impacts	
	Latitude <sup>2</sup>	Longitude <sup>2</sup>						Method	Score <sup>5, 6</sup>	Category / Rating / OAC Designation <sup>7</sup>			Fill Type	Length (LF)
S001	39.044336	-82.608524	Ephemeral	UNT to Salt Lick Creek (Little Salt Creek)	360	3	3	HHEI	24	Modified Ephemeral Stream	Eligible	TBD	TBD	TBD
S002	39.045701	-82.608437	Perennial	UNT to Salt Lick Creek (Little Salt Creek)	423	9	9	HHEI / QHEI	62 / 43	Modified Small Drainage Warmwater Stream / Fair	Eligible	TBD	TBD	TBD
S003	39.043936	-82.608099	Intermittent	UNT to Salt Lick Creek (Little Salt Creek)	78	3	2	HHEI	49	Modified Small Drainage Warmwater Stream	Eligible	TBD	TBD	TBD
S004	39.042568	-82.608062	Ephemeral	UNT to Salt Lick Creek (Little Salt Creek)	360	3	2	HHEI	13	Modified Ephemeral Stream	Eligible	TBD	TBD	TBD
Total:					1221	Total:								

Notes:

- <sup>1</sup> GAI map designation.
- <sup>2</sup> North American Datum, 1983.
- <sup>3</sup> Total stream length (in feet) located within the Project study area.
- <sup>4</sup> Width in feet from tops of stream bank
- <sup>5</sup> Scoring for OEPA Headwater Habitat Evaluation Index (HHEI) Primary Headwater Habitats (PHWH).
- <sup>6</sup> Narrative rating for headwater streams using the OEPA Qualitative Habitat Evaluation Index (QHEI). Excellent = ≥70; Good = 55 - 60; Fair = 43 - 54; Poor = 30 - 42; Very Poor = <30.
- <sup>7</sup> As defined by OAC Chapter 3745-1 Water Quality Standards, Water use designations and statewide criteria (OAC 3745-1-07). [http://www.epa.ohio.gov/dsw/rules/3745\\_1.aspx](http://www.epa.ohio.gov/dsw/rules/3745_1.aspx).
- <sup>8</sup> As defined by the 401 WQC conditions for stream eligibility coverage under the 2017 NWP program. Streams located in Possibly Eligible areas are eligible for coverage if the pH is <6.5 or stream flow is ephemeral. Streams located in Possibly Eligible areas are also eligible for coverage if the HHEI score is <50, or if the HHEI score is between 50-69 and substrate composition is ≤10% coarse types (includes cumulative percentage of bedrock, boulders, boulder slabs, and cobble).

**Table 3**  
**ODNR and USFWS RTE Species and Critical Habitat Review Results**

Common Name	Scientific Name	Habitat Type	Listing Status <sup>1</sup>	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
<b>Amphibians</b>						
Midland mud salamander <sup>2</sup>	<i>Pseudotriton montanus diastictus</i>	Under large, flat stones, preferably in muddy areas	T	No	No; Per ODNR response, the project is not likely to impact this species	-
<b>Bats</b>						
Indiana bat <sup>2,3</sup>	<i>Myotis sodalis</i>	Trees >3" dbh	E, FE	Yes	Yes; Avoided with winter tree clearing	April 1 to September 30
Northern long-eared bat <sup>2,3</sup>	<i>Myotis septentrionalis</i>	Roost in cavities or in crevices of both live trees and snags; Hibernate in caves and mines with constant temperatures, high humidity, and no air currents	E, FT	Yes	Yes; Avoided with winter tree clearing	April 1 to September 30
Little Brown Bat <sup>2</sup>	<i>Myotis lucifugus</i>	Roost sites can be trees, rock crevices, caves, mines, and buildings	E	Yes	Yes; Avoided with winter tree clearing	April 1 to September 30
Tri-colored Bat <sup>2</sup>	<i>Perimyotis subflavus</i>	Mines or caves, buildings, crevices of cliffs and rocks, or in or below the canopy of live or recently dead trees that retain some dead or live leaves	E	Yes	Yes; Avoided with winter tree clearing	April 1 to September 30
<b>Birds</b>						
Northern Harrier <sup>2</sup>	<i>Circus hudsonius</i>	Grasslands and large marshes	E	No	No; Known habitat types are not present within the Project area	May 15 to August 1
Sandhill Crane <sup>2</sup>	<i>Grus canadensis</i>	Open wetland habitats surrounded by shrubs or trees. They nest in marshes, bogs, wet meadows, prairies, and other moist habitats, preferring those with standing water	T	No	No; Known habitat types are not present within the Project area	April 1 to September 1
<b>Fish</b>						
Ohio Lamprey <sup>2</sup>	<i>Ichthyomyzon bdellium</i>	The Ohio River and the lower portion of its tributaries.	E	No	No; Known habitat types are not present within the Project area	April 15 to June 30



Common Name	Scientific Name	Habitat Type	Listing Status <sup>1</sup>	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
<b>Fish (continued)</b>						
Lake chubsucker <sup>2</sup>	<i>Erimyzon sucetta</i>	Natural lakes and very sluggish streams or marshes with dense aquatic vegetation and clear waters	T	No	No; Known habitat types are not present within the Project area	April 15 to June 30
Spotted Darter <sup>2</sup>	<i>Etheostoma maculatum</i>	Deep swift riffles of large rivers, around cobbles or boulders	E	No	No; Known habitat types are not present within the Project area	April 15 to June 30
<b>Mussels</b>						
Little spectaclecase <sup>2</sup>	<i>Villosa lienosa</i>	Small to medium streams in sand or gravel	E	Yes	No; No in-stream work is anticipated during construction	-
<b>Reptiles</b>						
Timber rattlesnake <sup>2</sup>	<i>Crotalus horridus</i>	Wooded areas	E, FSC	No	No; Per ODNR response, the project is not likely to impact this species.	-
Kirtland's snake <sup>2</sup>	<i>Clonophis kirtlandii</i>	Glaciated western Ohio, and a few glacial out wash-filled valleys in southwestern Ohio. Prefers wet meadows and fields.	T	No	No; Per ODNR response, the project is not likely to impact this species	-

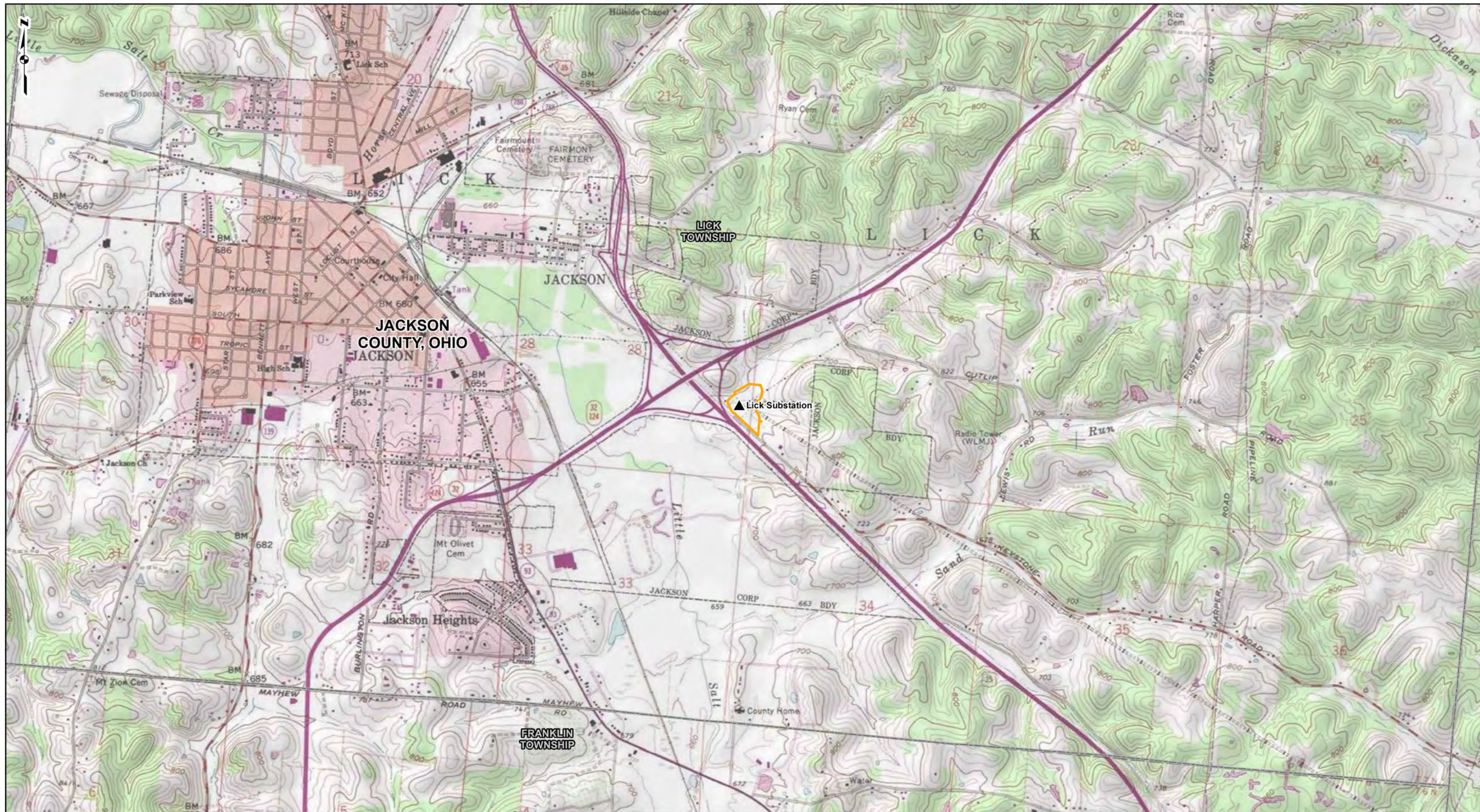
**Notes:**

- <sup>1</sup> E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; FE = federal endangered; FT = federal threatened; FSC = federal species of concern; FC = federal candidate.
- <sup>2</sup> ODNR, Division of Wildlife (DOW) comments included in the ODNR response, dated September 24, 2020.
- <sup>3</sup> USFWS comments included in the USFWS response, dated July 15, 2020.



## FIGURES





#### PROJECT LOCATION



JACKSON COUNTY, OHIO

REFERENCES: USGS 7.5' TOPOGRAPHIC QUADRANGLES: JACKSON (1978) AND WELLSTON (1977), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 05/2020.

#### LEGEND

- ▲ Substation
- Study Area
- County Boundary
- Township Boundary

0 1,000 2,000 4,000 Feet

#### FIGURE 1 PROJECT LOCATION MAP



LICK STATION  
REBUILD PROJECT  
AMERICAN ELECTRIC POWER

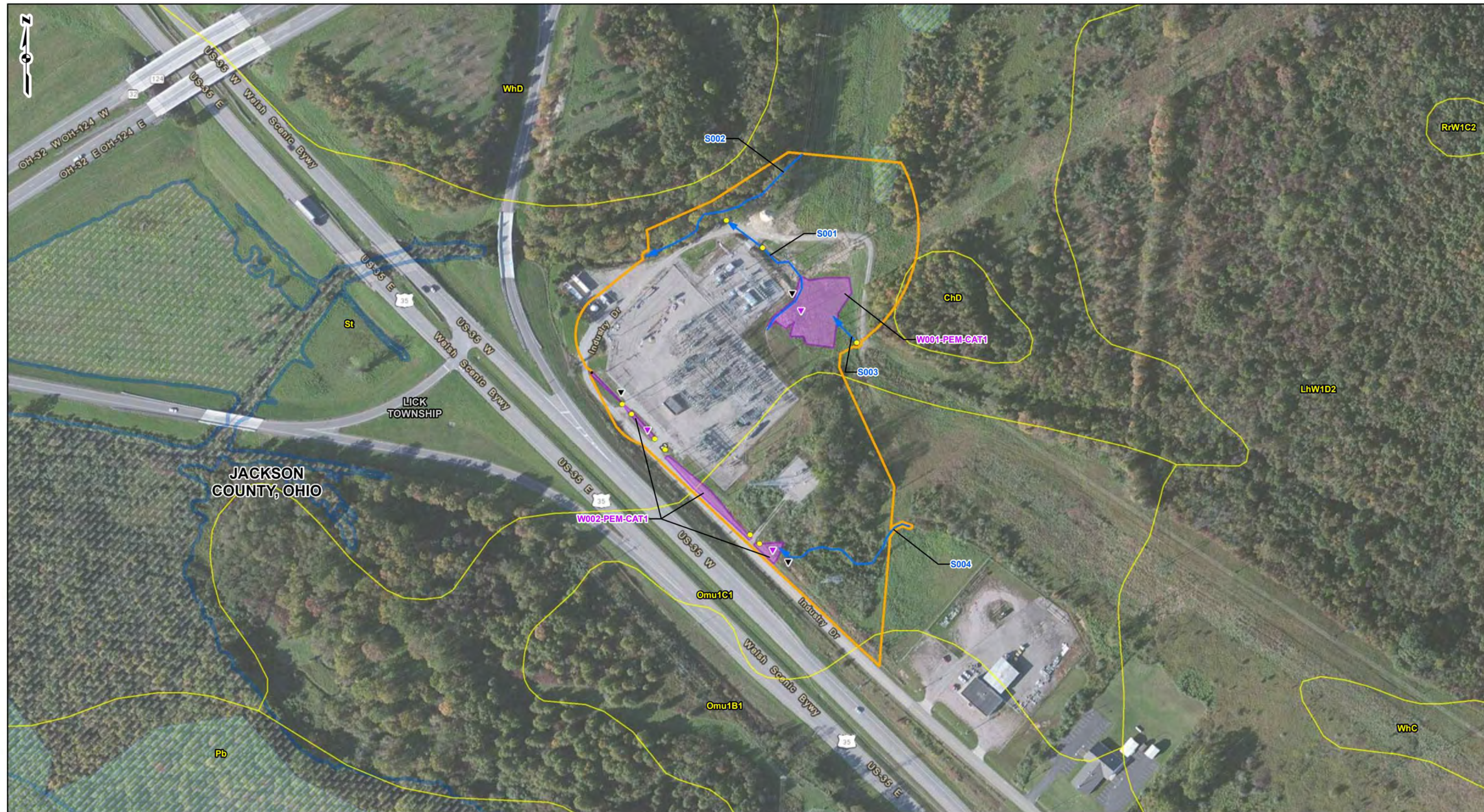


DRAWN BY: EFJ  
CHECKED: JDP

DATE: 5/28/2020  
APPROVED:

G:\C170352.88 - GIS\MXD\WDSIR\Project\_Location\_2020\_05\_28.mxd





# PROJECT LOCATION



JACKSON COUNTY, OHIO

REFERENCES: ESRI WORLD IMAGERY (CLARITY), ARCGIS ONLINE, ACCESSED 05/2020. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 05/2020. NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2019. NATIONAL FLOOD HAZARD LAYER, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), OHIO, 2019. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE, OHIO, USDA/NRCS, 2019. OHIO DEPARTMENT OF NATURAL RESOURCES (ODNR) LAND, 2018.

## LEGEND

- Culvert
- ▼ Upland Data Point
- ▼ Wetland Data Point
- Stream
- ..... Open-Ended Boundary
- Wetland
- Study Area
- Soil Type Boundary
- NWI Wetland
- 100-Year Floodplain
- FEMA Floodway
- County Boundary
- Township Boundary

0 100 200 400 Feet

## FIGURE 2 RESOURCE LOCATION MAP



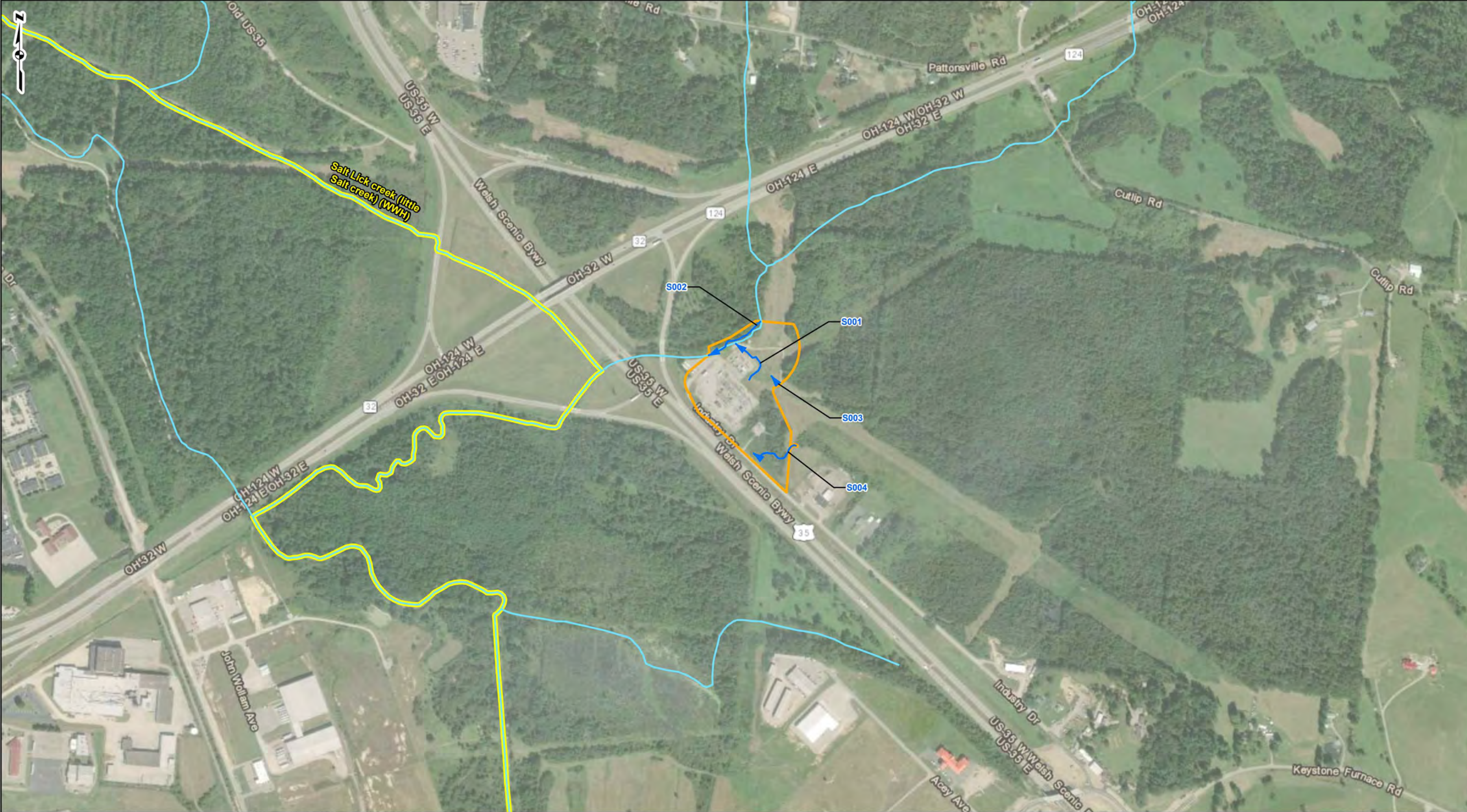
LICK STATION  
REBUILD PROJECT  
AMERICAN ELECTRIC POWER



DRAWN BY: EFJ  
CHECKED: JDP

DATE: 5/28/2020  
APPROVED:





PROJECT LOCATION



JACKSON COUNTY, OHIO

REFERENCES: ESRI WORLD IMAGERY, MAXAR (2015), ARCGIS ONLINE, ACCESSED 05/2020. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 05/2020. STREAM ELIGIBILITY, OHIO ENVIRONMENTAL PROTECTION AGENCY (OEPA), 2017. NHD STREAMS, NATIONAL HYDROGRAPHY DATASET (NHD), USGS, 2018. WQS STREAMS, OHIO WATER QUALITY STANDARDS, 2010.

LEGEND

- |               |   |
|---------------|---|
| Stream        | Ohio EPA Stream Eligibility: Ineligible |
| NHD Stream    | Possibly Eligible                       |
| OH WQS Stream | Eligible                                |
| Study Area    |   |

0 300 600 1,200 Feet

FIGURE 3  
STREAM ELIGIBILITY MAP



LICK STATION  
REBUILD PROJECT  
AMERICAN ELECTRIC POWER



DRAWN BY: EFJ  
CHECKED: JDP

DATE: 5/28/2020  
APPROVED:



## APPENDIX A

### Photographs



**Photograph 1. Wetland W001-PEM-CAT1, Facing North**



**Photograph 2. Wetland W001-PEM-CAT1, Facing South**





**Photograph 3. Wetland W002-PEM-CAT1, Facing Southeast**



**Photograph 4. Wetland W002-PEM-CAT1, Facing Northwest**





**Photograph 5. Stream S001 Upstream, Facing Southeast**



**Photograph 6. Stream S001 Downstream, Facing Northwest**





**Photograph 7. Stream S002 Upstream, Facing Northeast**



**Photograph 8. Stream S002 Downstream, Facing Southwest**





**Photograph 9. Stream S003 Upstream, Facing Northwest**



**Photograph 10. Stream S003 Downstream, Facing Southeast**





**Photograph 11. Stream S004 Upstream, Facing East**



**Photograph 12. Stream S004 Downstream, Facing West**

## **APPENDIX B**

### **Wetland Determination Data Forms**



# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: ALP City/County: Jackson Co. Sampling Date: 7/10/2017  
 Applicant/Owner: RLV State: OH Sampling Point: (PEM)  
 Investigator(s): RLV Section, Township, Range: Lick Twp  
 Landform (hillslope, terrace, etc.): Dip Local relief (concave, convex, none): concave Slope (%) 0.1  
 Subregion (LRR or MLRA): LRRP Lat: 39.04404623 Long: -82.6084343 Datum: NAD83  
 Soil Map Unit Name: St-Stendal Silty loam, occasionally flooded NWI classification: N/A  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)  
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Remarks: <u>Wetland data point for 1001 -PEM-CAT1.</u> <u>Data point taken near substation under transmission ROW.</u>				

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required, check all that apply)			
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input checked="" type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)		<input checked="" type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	<u>3"</u>
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	<u>0</u>
Saturation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	<u>0</u>
(includes capillary fringe)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

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

Remarks: Wetland hydrology Indicators are A1, A2, A3, C3, D2 and D5.

Tree Stratum	(Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>				
2.				
3.				
4.				
5.				
6.				
7.				
		<u>0</u>	= Total Cover	

Sapling/Shrub Stratum	(Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>0</u>	= Total Cover	

Herb Stratum	(Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Phalaris arundinacea</u>		<u>60</u>	<u>Y</u>	<u>FACW</u>
2. <u>Typha x glauca</u>		<u>10</u>	<u>N</u>	<u>OBL</u>
3. <u>Juncus effusus</u>		<u>10</u>	<u>N</u>	<u>OBL</u>
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		<u>80</u>	= Total Cover	

Woody Vine Stratum	(Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>				
2.				
3.				
4.				
5.				
6.				
		<u>0</u>	= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

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

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_

FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_

FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_

FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_

UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_

Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)

Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

☒ 1 - Rapid Test for Hydrophytic Vegetation

☒ 2 - Dominance Test is >50%

☐ 3 - Prevalence Index is ≤3.0<sup>1</sup>

☐ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter.

**Sapling/Shrub** - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

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

**Hydrophytic Vegetation Present?** Yes ☒ No ☐

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

Hydrophytic veg. is present - passes the dominance test and rapid test.



Sampling Point: PEM

[illegible]<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)   | <input type="checkbox"/> Dark Surface (S7)                                      | <input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )                |
| <input type="checkbox"/> Histic Epipedon (A2)                                    | <input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )  | <input type="checkbox"/> Coast Prairie Redox (A16) ( <b>MLRA 147, 148</b> ) |
| <input type="checkbox"/> Black Histic (A3)                                       | <input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )        | <input type="checkbox"/> Piedmont Floodplain Soils (F19)                    |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                               | <input type="checkbox"/> ( <b>MLRA 136, 147</b> )                           |
| <input type="checkbox"/> Stratified Layers (A5)                                  | <input checked="" type="checkbox"/> Depleted Matrix (F3)                        | <input type="checkbox"/> Very Shallow Dark Surface (TF12)                   |
| <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )                        | <input type="checkbox"/> Redox Dark Surface (F6)                                | <input type="checkbox"/> Other (Explain in Remarks)                         |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                       | <input type="checkbox"/> Depleted Dark Surface (F7)                             |   |
| <input type="checkbox"/> Thick Dark Surface (A12)                                | <input type="checkbox"/> Redox Depressions (F8)                                 |   |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N, MLRA 147,148</b> ) | <input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> ) |   |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                                | <input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )          |   |
| <input type="checkbox"/> Sandy Redox (S5)  | <input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )    |   |
| <input type="checkbox"/> Stripped Matrix (S6)                                    | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)              |   |

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

## Hydric

Soil Present? Yes ☒ No ☐

Depth (inches):

Meets F3.

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: "AEP" City/County: Jackson Co. Sampling Date: 7/10/2017  
 Applicant/Owner: KLV State: OH Sampling Point: -UPL  
 Investigator(s): KLV Section, Township, Range: Lick Twp.  
 Landform (hillslope, terrace, etc.): Slope Local relief (concave, convex, none): convex Slope (%) 5/  
 Subregion (LRR or MLRA): LRR Lat: 39.0445117 Long: -82.60850285 Datum: NAD83  
 Soil Map Unit Name: St. Stender Silty loam - occasionally flooded NWI classification: N/A  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)  
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation no, Soil no, or Hydrology no 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			

### Remarks:

Upland data point for W001  
 Data point take near substation under transmission ROW.

## HYDROLOGY

### Wetland Hydrology Indicators:

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

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

#### Secondary Indicators (minimum of two required)

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

### Field Observations:

- |                        |                              |  |                                      |
|------------------------|------------------------------|--|--------------------------------------|
| Surface Water Present? | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | Depth (inches): <input type="text"/> |
| Water Table Present?   | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | Depth (inches): <input type="text"/> |
| Saturation Present?    | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | Depth (inches): <input type="text"/> |
- (includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

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

### Remarks:

Wetland Hydrology is not present.



Tree Stratum	(Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>				
2.				
3.				
4.				
5.				
6.				
7.				
		<u>0</u>	= Total Cover	

Sapling/Shrub Stratum	(Plot size: <u>15'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
		<u>0</u>	= Total Cover	

Herb Stratum	(Plot size: <u>5'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Trifolium pratense</u>		<u>20</u>	<u>Y</u>	<u>FacV</u>
2. <u>Oxalis europaea</u>		<u>10</u>	<u>N</u>	<u>FacU</u>
3. <u>Taraxacum officinale</u>		<u>5</u>	<u>N</u>	<u>FacU</u>
4. <u>Pod pratensis</u>		<u>50</u>	<u>Y</u>	<u>FacU</u>
5. <u>Dipsacus fullonum</u>		<u>5</u>	<u>N</u>	<u>FacU</u>
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		<u>90</u>	= Total Cover	

Woody Vine Stratum	(Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>				
2.				
3.				
4.				
5.				
6.				
		<u>0</u>	= Total Cover	

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_

FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_

FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_

FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_

UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_

Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)

Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

\_\_\_\_\_ 1 - Rapid Test for Hydrophytic Vegetation

\_\_\_\_\_ 2 - Dominance Test is >50%

\_\_\_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup>

\_\_\_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

\_\_\_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter.

**Sapling/Shrub** - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

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

**Hydrophytic Vegetation Present?** Yes \_\_\_\_\_ No ✓

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

Upland veg. is dominant.

Sampling Point:  - UPL

[illegible]<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

### Indicators for Problematic Hydric Soils<sup>3</sup>:

- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Histosol (A1)   | <input type="checkbox"/> Dark Surface (S7)                                      | <input type="checkbox"/> 2 cm Muck (A10) ( <b>MLRA 147</b> )                |
| <input type="checkbox"/> Histic Epipedon (A2)                                    | <input type="checkbox"/> Polyvalue Below Surface (S8) ( <b>MLRA 147, 148</b> )  | <input type="checkbox"/> Coast Prairie Redox (A16) ( <b>MLRA 147, 148</b> ) |
| <input type="checkbox"/> Black Histic (A3)                                       | <input type="checkbox"/> Thin Dark Surface (S9) ( <b>MLRA 147, 148</b> )        | <input type="checkbox"/> Piedmont Floodplain Soils (F19)                    |
| <input type="checkbox"/> Hydrogen Sulfide (A4)                                   | <input type="checkbox"/> Loamy Gleyed Matrix (F2)                               | <input type="checkbox"/> ( <b>MLRA 136, 147</b> )                           |
| <input type="checkbox"/> Stratified Layers (A5)                                  | <input type="checkbox"/> Depleted Matrix (F3)                                   | <input type="checkbox"/> Very Shallow Dark Surface (TF12)                   |
| <input type="checkbox"/> 2 cm Muck (A10) ( <b>LRR N</b> )                        | <input type="checkbox"/> Redox Dark Surface (F6)                                | <input type="checkbox"/> Other (Explain in Remarks)                         |
| <input type="checkbox"/> Depleted Below Dark Surface (A11)                       | <input type="checkbox"/> Depleted Dark Surface (F7)                             |   |
| <input type="checkbox"/> Thick Dark Surface (A12)                                | <input type="checkbox"/> Redox Depressions (F8)                                 |   |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) ( <b>LRR N, MLRA 147,148</b> ) | <input type="checkbox"/> Iron-Manganese Masses (F12) ( <b>LRR N, MLRA 136</b> ) |   |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4)                                | <input type="checkbox"/> Umbric Surface (F13) ( <b>MLRA 136, 122</b> )          |   |
| <input type="checkbox"/> Sandy Redox (S5)  | <input type="checkbox"/> Piedmont Floodplain Soils (F19) ( <b>MLRA 148</b> )    |   |
| <input type="checkbox"/> Stripped Matrix (S6)                                    | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)              |   |

Restrictive Layer (if observed):

## Hydric

Soil Present? Yes No ☒

Soil Description Remarks: Hydric Soils are not present.



# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: "AEP" City/County: Jackson, Co. Sampling Date: 7/10/2017  
 Applicant/Owner: KLV State: OH Sampling Point: (PEM)  
 Investigator(s): KLV Section, Township, Range: Lick Twp.  
 Landform (hillslope, terrace, etc.): Dip Local relief (concave, convex, none): concave Slope (%) 0.1  
 Subregion (LRR or MLRA): LRR Lat: 39.04332798 Long: -82.60966637 Datum: NAD 83  
 Soil Map Unit Name: St-Stendal Silty loam, occasionally flooded NWI classification: N/A

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)  
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation no, Soil no, or Hydrology no 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 <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Remarks: <u>Wetland data point for W002 - PEM-CATI.</u> <u>Data point taken adjacent to transmission substation along roadside.</u>	

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required, check all that apply)		
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input checked="" type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>1"</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches): <u>0</u>	
Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> (includes capillary fringe)	Depth (inches): <u>0</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		

Remarks: Wetland Hydrology Indicators are A1, A2, A3, C3, D2 and D5.

Tree Stratum

(Plot size: 30')

Absolute  
% Cover

Dominant  
Species?

Indicator  
Status

1.	<u>none</u>			
2.				
3.				
4.				
5.				
6.				
7.				

0 = Total Cover

Sapling/Shrub Stratum

(Plot size: 15')

Absolute  
% Cover

Dominant  
Species?

Indicator  
Status

1.	<u>none</u>			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

0 = Total Cover

Herb Stratum

(Plot size: 5')

Absolute  
% Cover

Dominant  
Species?

Indicator  
Status

1.	<u>Typha x glauca</u>	<u>30</u>	<u>Y</u>	<u>ObI</u>
2.	<u>Scirpus atrovirens</u>	<u>10</u>	<u>N</u>	<u>ObI</u>
3.	<u>Juncus effusus</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>
4.	<u>Mimulus alatus</u>	<u>10</u>	<u>N</u>	<u>ObI</u>
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				

70 = Total Cover

Woody Vine Stratum

(Plot size: 30')

Absolute  
% Cover

Dominant  
Species?

Indicator  
Status

1.	<u>none</u>			
2.				
3.				
4.				
5.				
6.				

0 = Total Cover

**Dominance Test worksheet:**

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

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

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

**Prevalence Index worksheet:**

Total % Cover of: Multiply by:

OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

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

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter.

**Sapling/Shrub** - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

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

**Hydrophytic  
Vegetation  
Present?**

Yes ☒ No ☐

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

Wetland veg is present - passes the dominance test and rapid test.



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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-6	10YR 4/2	80	10YR 4/4	20	C	PL	Silt loam	
6-16	10YR 4/1	75	10YR 4/4	25	c	PL	Clay loam	

<sup>1</sup>Type: C=concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.<sup>2</sup>Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

- ☐ Histosol (A1)  
☐ Histic Epipedon (A2)  
☐ Black Histic (A3)  
☐ Hydrogen Sulfide (A4)  
☐ Stratified Layers (A5)  
☐ 2 cm Muck (A10) (LRR N)  
☐ Depleted Below Dark Surface (A11)  
☐ Thick Dark Surface (A12)  
☐ Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)  
☐ Sandy Gleyed Matrix (S4)  
☐ Sandy Redox (S5)  
☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)  
☐ Polyvalue Below Surface (S8) (MLRA 147, 148)  
☐ Thin Dark Surface (S9) (MLRA 147, 148)  
☒ Loamy Gleyed Matrix (F2)  
☐ Depleted Matrix (F3)  
☐ Redox Dark Surface (F6)  
☐ Depleted Dark Surface (F7)  
☐ Redox Depressions (F8)  
☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)  
☐ Umbric Surface (F13) (MLRA 136, 122)  
☐ Piedmont Floodplain Soils (F19) (MLRA 148)  
☐ Red Parent Material (F21) (MLRA 127, 147)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- ☐ 2 cm Muck (A10) (MLRA 147)  
☐ Coast Prairie Redox (A16) (MLRA 147, 148)  
☐ Piedmont Floodplain Soils (F19) (MLRA 136, 147)  
☐ Very Shallow Dark Surface (TF12)  
☐ Other (Explain in Remarks)

<sup>3</sup>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 ☐

**Soil Description Remarks:**

Meets F3.

# WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: "AEP" City/County: Jackson Co. Sampling Date: 7/10/2017  
 Applicant/Owner: KLV State: OH Sampling Point: UPL  
 Investigator(s): KLV Section, Township, Range: Lick Twp.  
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%) 0%  
 Subregion (LRR or MLRA): LRR Lat: 39.0435548 Long: -82.60982211 Datum: NAD 83  
 Soil Map Unit Name: St-Strndal Silty loam, occasionally flooded NWI classification: N/A  
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)  
 Are Vegetation no, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐  
 Are Vegetation no, Soil no, or Hydrology no 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 <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Remarks: <u>Upland data point for 200</u> <u>Data point taken near transmission substation,</u>					

## HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required, check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)	
		<input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:		Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches):	<input type="text"/>
(includes capillary fringe)			

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

Remarks: Wetland Hydrology Indicators are not present.



Tree Stratum

(Plot size: 30')

	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
7.			
	<u>0</u>	= Total Cover	

Sapling/Shrub Stratum

(Plot size: 15')

1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	<u>0</u>	= Total Cover	

Herb Stratum

(Plot size: 5')

1. <u>Dactylis glomerata</u>	<u>30</u>	<u>Y</u>	<u>FacU</u>
2. <u>Daucus carota</u>	<u>10</u>	<u>N</u>	<u>FacU</u>
3. <u>Trifolium pratense</u>	<u>15</u>	<u>N</u>	<u>FacU</u>
4. <u>Erigeron annuus</u>	<u>10</u>	<u>N</u>	<u>FacU</u>
5. <u>Rd pratensis</u>	<u>20</u>	<u>Y</u>	<u>FacU</u>
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	<u>85</u>	= Total Cover	

Woody Vine Stratum

(Plot size: 30')

1. <u>none</u>			
2.			
3.			
4.			
5.			
6.			
	<u>0</u>	= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u>	(A)
Total Number of Dominant Species Across All Strata:	<u>2</u>	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u>	(A/B)

**Prevalence Index worksheet:**

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

**Hydrophytic Vegetation Indicators:**

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

<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

**Tree** - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter.

**Sapling/Shrub** - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

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

**Hydrophytic Vegetation**

Present? Yes ☐ No ☒

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

Upland veg. is dominant.





## **APPENDIX C**

### **Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms**

<b>Site:</b>	<b>Rater(s):</b> KLV	<b>Date:</b> 7/10/2017
--------------	----------------------	------------------------

2	2
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

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

2	4
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

15	19
max 30 pts.	subtotal

### Metric 3. Hydrology.

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

- ☐ High pH groundwater (5)
- ☒ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

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

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

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

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☐ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☒ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

7	26
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☒ Poor to fair (2)
- ☐ Poor (1)

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

- ☐ None or none apparent (9)
- ☒ Recovered (6)
- ☒ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☒ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

26
----

subtotal this page



Site: \_\_\_\_\_ Rater(s): KLV Date: 7/10/2017

26  
subtotal first page

0 26  
max 10 pls. subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-1 25  
max 20 pls. subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

### 6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

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

- ☐ Extensive >75% cover (-5)
- ☒ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

25  
CAT I

End of Quantitative Rating. Complete Categorization Worksheets.

<b>Site:</b>	<b>Rater(s):</b> KLV	<b>Date:</b> 7/10/2017
--------------	----------------------	------------------------

1	2
max 6 pts.	subtotal

### Metric 1. Wetland Area (size).

Select one size class and assign score.

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

1	2
max 14 pts.	subtotal

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

9	=
max 30 pts.	subtotal

### Metric 3. Hydrology.

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

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

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

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

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

- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- ☒ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other

5	10
max 20 pts.	subtotal

### Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

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

- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

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

- ☐ None or none apparent (9)
- ☒ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed

- ☒ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants

- ☒ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

15
----

subtotal this page



Site: \_\_\_\_\_ Rater(s): KLV Date: 7/10/2017

16  
subtotal first page

0 16  
max 10 pts. subtotal

## Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-2 14  
max 20 pts. subtotal

## Metric 6. Plant communities, interspersions, microtopography.

### 6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☐ Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☒ Other \_\_\_\_\_

### 6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

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

- ☐ Extensive >75% cover (-5)
- ☒ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

### 6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☐ Amphibian breeding pools

### Vegetation Community Cover Scale

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

### Narrative Description of Vegetation Quality

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

### Mudflat and Open Water Class Quality

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

### Microtopography Cover Scale

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

14

CATI

End of Quantitative Rating. Complete Categorization Worksheets.

## **APPENDIX D**

### **Primary Headwater Habitat Evaluation & Qualitative Habitat Evaluation Index (HHEI/QHEI) Data Forms**





# Primary Headwater Habitat Evaluation Form

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

24

SITE NAME/LOCATION

SITE NUMBER \_\_\_\_\_ RIVER BASIN Scioto River DRAINAGE AREA (mi<sup>2</sup>) 0.07 sq mi  
LENGTH OF STREAM REACH (ft) 360 LAT. 39.044321025 LONG. -82.10851398 RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_  
DATE 7/10/2017 SCORER KLV COMMENTS (EPH)

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

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

MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

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

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock 0

(A) 12

(B) 2

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI  
Metric  
Points

Substrate  
Max = 40

14

A + B

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

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

4cm

Pool Depth  
Max = 30

5

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

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

COMMENTS

AVERAGE BANKFULL WIDTH (meters)

3'

Bankfull  
Width  
Max=30

5

This information must also be completed

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

## RIPARIAN WIDTH

L	R	(Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

COMMENTS

## FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

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

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

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

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

## STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☒ WWH Name: Little Sat Creek Distance from Evaluated Stream 0.83 miles  
☐ 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: Wellston, OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_  
County: Jackson Co. Township / City: Lick Twp.

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 7/10/2017 Quantity: 4.25"  
Photograph Information: \_\_\_\_\_  
Elevated Turbidity? (Y/N): N Canopy (% open): 100%  
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_  
Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_  
Is the sampling reach representative of the stream (Y/N) Y If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

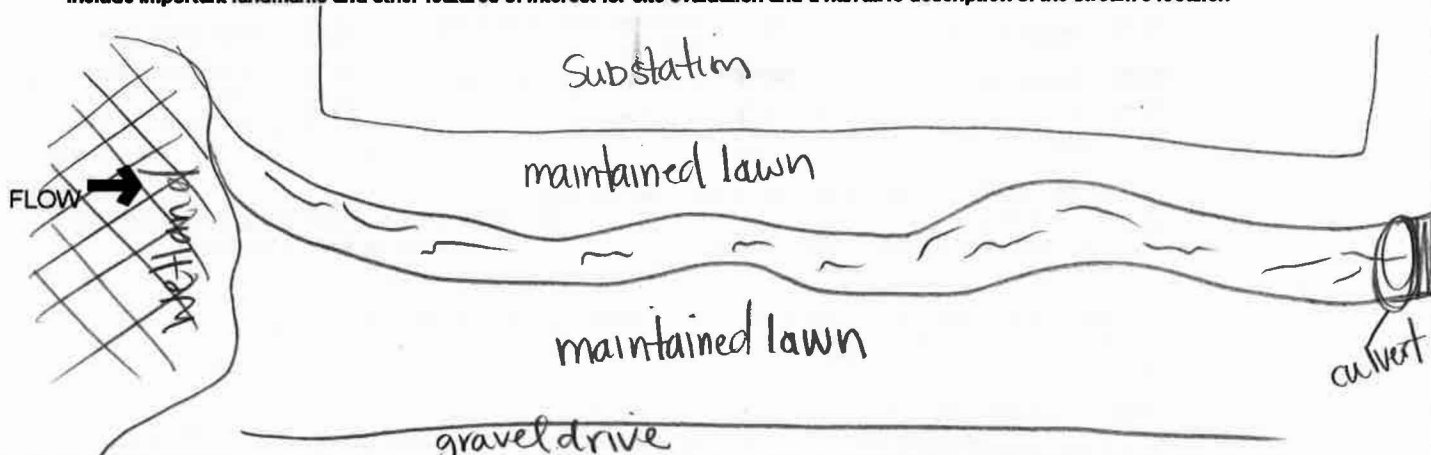
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

Comments Regarding Biology: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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

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







# Primary Headwater Habitat Evaluation Form

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

62

SITE NAME/LOCATION

SITE NUMBER \_\_\_\_\_ RIVER BASIN Scioto River DRAINAGE AREA (mi<sup>2</sup>) 2.4 sq. mi.  
LENGTH OF STREAM REACH (ft) 750 LAT. 39.0457 LONG. 82.6084 RIVER CODE \_\_\_\_\_ RIVER MILE \_\_\_\_\_  
DATE 7/10/2017 SCORER KLV COMMENTS \_\_\_\_\_ (PER)

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

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

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]		<input checked="" type="checkbox"/> SILT [3 pt]	<u>35</u>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]		<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<u>10</u>
<input type="checkbox"/> BEDROCK [16 pt]		<input type="checkbox"/> FINE DETRITUS [3 pts]	
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>10</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [8 pts]	<u>25</u>	<input type="checkbox"/> MUCK [0 pts]	
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<u>20</u>	<input type="checkbox"/> ARTIFICIAL [3 pts]	

Total of Percentages of  
Bldr Slabs, Boulder, Cobble, Bedrock

10

(A) 12

(B) 5

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI  
Metric  
Points

Substrate  
Max = 40

17

A + B

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

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input checked="" type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth  
Max = 30

25

COMMENTS

MAXIMUM POOL DEPTH (centimeters):

20cm

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

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

Bankfull  
Width  
Max=30

20

COMMENTS

AVERAGE BANKFULL WIDTH (meters)

9'

This information must also be completed

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

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

COMMENTS

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

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

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

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

**STREAM GRADIENT ESTIMATE**

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

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

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☒ WWH Name: Little Salt Creek Distance from Evaluated Stream 0.54 miles  
☐ 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: Wellston, OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_  
County: Jackson Co. Township / City: Lick Twp.

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 7/10/2017 Quantity: 4.25"  
Photograph Information: \_\_\_\_\_  
Elevated Turbidity? (Y/N): N Canopy (% open): 40%  
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: \_\_\_\_\_  
Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_  
Is the sampling reach representative of the stream (Y/N): Y If not, please explain: \_\_\_\_\_

Additional comments/description of pollution impacts: \_\_\_\_\_

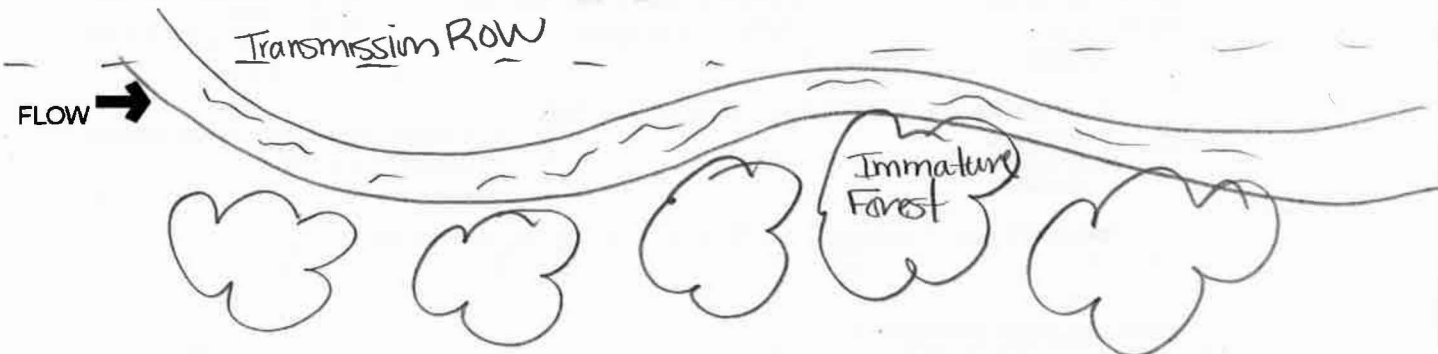
**BIOTIC EVALUATION**

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

Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N  
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N  
Comments Regarding Biology: \_\_\_\_\_

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

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







# Primary Headwater Habitat Evaluation Form

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

49

SITE NAME/LOCATION

SITE NUMBER

RIVER BASIN Scioto River

DRAINAGE AREA (mi<sup>2</sup>) 60.0 mi<sup>2</sup>

LENGTH OF STREAM REACH (ft) 78'

LAT. 39.043936 LONG. 82.60099

RIVER CODE RIVER MILE

DATE 4/24/18

SCORER DEE

COMMENTS (INT)

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

## STREAM CHANNEL

☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☒ RECENT OR NO RECOVERY

## MODIFICATIONS:

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]		<input checked="" type="checkbox"/> SILT [3 pts]	35
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]		<input type="checkbox"/> LEAF PACKWOODY DEBRIS [3 pts]	5
<input type="checkbox"/> BEDROCK [16 pts]		<input type="checkbox"/> FINE DETRITUS [3 pts]	
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	5	<input type="checkbox"/> CLAY or HARDPAN [0 pts]	
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	10	<input checked="" type="checkbox"/> MUCK [0 pts]	35
<input type="checkbox"/> SAND (<2 mm) [6 pts]	10	<input type="checkbox"/> ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 5

(A) 3

(B) 6

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

## HHEI Metric Points

Substrate Max = 40

A + B

Pool Depth Max = 30

25

Bankfull Width Max=30

15

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

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input checked="" type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS 4" 2" 2.5"

MAXIMUM POOL DEPTH (centimeters):

0.16

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

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

COMMENTS 3' 3.5' 4'

AVERAGE BANKFULL WIDTH (meters)

1.1

This Information must also be completed

## RIPARIAN ZONE AND FLOODPLAIN QUALITY

☆NOTE: River Left (L) and Right (R) as looking downstream☆

### RIPARIAN WIDTH

L	R	(Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None

COMMENTS

### FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Mining or Construction

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

<input checked="" type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

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

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

## STREAM GRADIENT ESTIMATE

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

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

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI Form)

**DOWNSTREAM DESIGNATED USE(S)**

☒ WWH Name: Salt Lick Creek (Little Salt Creek) Distance from Evaluated Stream 0.25 mi  
☐ 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: Wellston, OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order \_\_\_\_\_  
County: Jackson CO Township / City: Lick Twp

**MISCELLANEOUS**

Base Flow Conditions? (Y/N): Y Date of last precipitation: 4/24/18 Quantity: 0.08 in

Photograph Information: \_\_\_\_\_

Elevated Turbidity? (Y/N): N Canopy (% open): 100

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

Field Measures: Temp (°C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (µmhos/cm) \_\_\_\_\_

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

Additional comments/description of pollution impacts: \_\_\_\_\_

**BIOTIC EVALUATION**

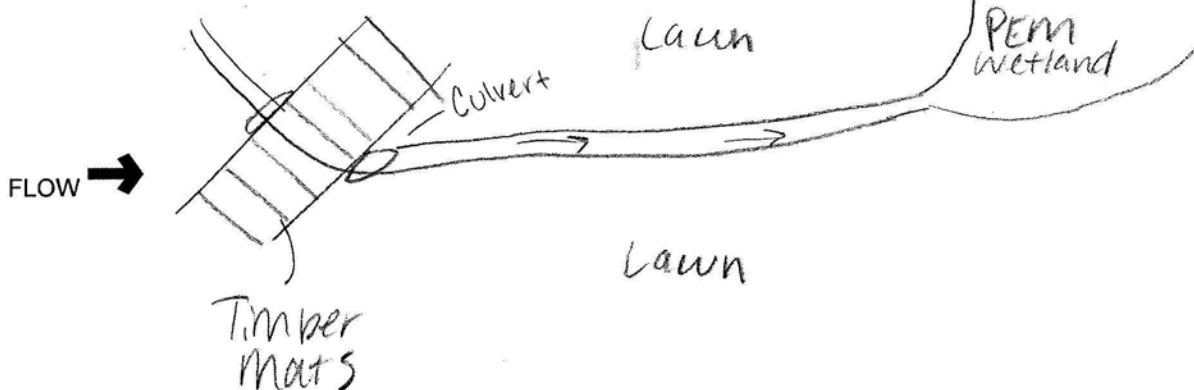
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N): N Voucher? (Y/N): N Salamanders Observed? (Y/N): N Voucher? (Y/N): N  
Frogs or Tadpoles Observed? (Y/N): N Voucher? (Y/N): N Aquatic Macroinvertebrates Observed? (Y/N): N Voucher? (Y/N): N

Comments Regarding Biology: \_\_\_\_\_

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

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







# Primary Headwater Habitat Field Evaluation Form

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

13

SITE NAME/LOCATION Lick Station  
SITE NUMBER 030600020001 RIVER BASIN 030600020001 RIVER CODE 030600020001 DRAINAGE AREA (mi<sup>2</sup>) 4.5qmi  
LENGTH OF STREAM REACH (ft) 391.0478 LAT 39.0478 LONG -82.168062 RIVER MILE 5004  
DATE 4/15/20 SCORER AMK COMMENTS 5004

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

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

<b>1. SUBSTRATE</b> (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.				<b>HHEI Metric Points</b> Substrate Max = 40  8 A + B
TYPE	PERCENT	TYPE	PERCENT	
<input type="checkbox"/> BLDR SLABS [16 pts] <input type="checkbox"/> BOULDER (>256 mm) [16 pts] <input type="checkbox"/> BEDROCK [16 pts] <input type="checkbox"/> COBBLE (65-256 mm) [12 pts] <input type="checkbox"/> GRAVEL (2-64 mm) [9 pts] <input type="checkbox"/> SAND (<2 mm) [6 pts]		<input checked="" type="checkbox"/> SILT [3 pts] <input checked="" type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts] <input type="checkbox"/> FINE DETRITUS [3 pts] <input type="checkbox"/> CLAY or HARDPAN [0 pt] <input type="checkbox"/> MUCK [0 pts] <input type="checkbox"/> ARTIFICIAL [3 pts]	90 10	
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock <u>0</u> (A)		(B) <u>2</u>		
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: <u>6</u> TOTAL NUMBER OF SUBSTRATE TYPES: <u>2</u>				
<b>2. Maximum Pool Depth</b> (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).				<b>Pool Depth</b> Max = 30  0
<input type="checkbox"/> > 30 centimeters [20 pts] <input type="checkbox"/> > 22.5 - 30 cm [30 pts] <input type="checkbox"/> > 10 - 22.5 cm [25 pts] <input type="checkbox"/> 5 cm - 10 cm [15 pts] <input checked="" type="checkbox"/> < 5 cm [5 pts] <input type="checkbox"/> NO WATER OR MOIST CHANNEL [0pts]				
COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): <u>0</u>				
<b>3. BANK FULL WIDTH</b> (Measured as the average of 3 - 4 measurements). (Check ONLY one box):				<b>Bankfull Width</b> Max=30  5
<input type="checkbox"/> > 4.0 meters (> 13') [30 pts] <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] <input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] <input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] <input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]				
COMMENTS _____ AVERAGE BANKFULL WIDTH (meters) <u>3'</u>				

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)		FLOODPLAIN QUALITY (Most Predominant per Bank)	
L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS \_\_\_\_\_

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

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (interstitial)	<input type="checkbox"/> Dry channel, no water (ephemeral)

COMMENTS \_\_\_\_\_

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

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat to Mild	<input type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate to Mild	<input type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe to Mild
---------------------------------------	---	---	---	---

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

QHEI PERFORMED? ☐ Yes ☒ No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI form)

**DOWNSTREAM DESIGNATED USE(S)**

☒ WWH Name: Little Satt Creek Distance from Evaluated Stream 0.85 miles  
☐ 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: Wellston, OH NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order: \_\_\_\_\_  
County: Jackson Co. Township/City: Lick Twp.

**MISCELLANEOUS**

Base Flow Conditions? (Y/N) N Date of last precipitation: \_\_\_\_\_ Quantity: \_\_\_\_\_

Photo-documentation Notes: \_\_\_\_\_

Elevated Turbidity? (Y/N) N Canopy (% open) 100%

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

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

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) N Species observed (if known): \_\_\_\_\_

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

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

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

Comments Regarding Biology: \_\_\_\_\_

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

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





Stream &amp; Location: Lick Station

RM: Date: 7/10/17

S0H-KLV-002 (LPER)

Scorers Full Name &amp; Affiliation: KLV GAI Consultants

River Code: -

STORET #: -

Lat./ Long.: 39.0457 182.6084

Office verified location ☐1] SUBSTRATE Check ONLY Two substrate TYPE BOXES;  
estimate % or note every type present

Check ONE (Or 2 &amp; average)

BEST TYPES POOL RIFFLE

OTHER TYPES POOL RIFFLE

ORIGIN

QUALITY

- ☐ BLDR/SLABS [10]  
☐ BOULDER [9]  
☐ COBBLE [8]  
☒ GRAVEL [7]  
☐ SAND [6]  
☐ BEDROCK [5]

- POOL RIFFLE  
 10  
 25  
 20

- ☐ HARDPAN [4]  
☐ DETRITUS [3]  
☐ MUCK [2]  
☒ SILT [2]  
☐ ARTIFICIAL [0]

- POOL RIFFLE  
 10  
 35

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

SILT

EMBEDDEDNESS

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

Substrate

7  
Maximum  
20

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

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.

AMOUNT

Check ONE (Or 2 &amp; average)

- ☐ UNDERCUT BANKS [1]  
☐ OVERHANGING VEGETATION [1]  
☐ SHALLOWS (IN SLOW WATER) [1]  
☐ ROOTMATS [1]

- ☐ POOLS > 70cm [2]  
☐ ROOTWADS [1]  
☐ BOULDERS [1]

- ☐ OXBOWS, BACKWATERS [1]  
☐ AQUATIC MACROPHYTES [1]  
☐ LOGS OR WOODY DEBRIS [1]

- ☐ EXTENSIVE >75% [11]  
☐ MODERATE 25-75% [7]  
☒ SPARSE 5-<25% [3]  
☐ NEARLY ABSENT <5% [1]

Comments

Cover  
Maximum  
20

5

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

SINUOSITY

DEVELOPMENT

CHANNELIZATION

STABILITY

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

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

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

- ☐ HIGH [3]  
☒ MODERATE [2]  
☐ LOW [1]

Comments

Channel  
Maximum  
20

14

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank &amp; average)

River right looking downstream

RIPARIAN WIDTH

FLOOD PLAIN QUALITY

- ☐ EROSION  
☐ NONE / LITTLE [3]  
☒ MODERATE [2]  
☐ HEAVY / SEVERE [1]

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

- ☐ FOREST, SWAMP [3]  
☐ SHRUB OR OLD FIELD [2]  
☐ RESIDENTIAL, PARK, NEW FIELD [1]  
☐ FENCED PASTURE [1]  
☒ 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

7

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 &amp; average)

Check ALL that apply

- ☐ > 1m [6]  
☐ 0.7-<1m [4]  
☐ 0.4-<0.7m [2]  
☒ 0.2-<0.4m [1]  
☐ < 0.2m [0]

- ☐ POOL WIDTH > RIFFLE WIDTH [2]  
☒ POOL WIDTH = RIFFLE WIDTH [1]  
☐ POOL WIDTH < RIFFLE WIDTH [0]

- ☐ TORRENTIAL [-1]  
☒ SLOW [1]  
☐ VERY FAST [1]  
☐ FAST [1]  
☐ MODERATE [1]  
☐ INTERSTITIAL [-1]  
☐ INTERMITTENT [-2]  
☐ EDDIES [1]

Indicate for reach - pools and riffles.

Comments

Pool /  
Current  
Maximum  
12

3

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 &amp; average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH

RUN DEPTH

RIFFLE / RUN SUBSTRATE

RIFFLE / RUN EMBEDDEDNESS

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

- ☐ MAXIMUM > 50cm [2]  
☒ MAXIMUM < 50cm [1]

- ☐ STABLE (e.g., Cobble, Boulder) [2]  
☒ MOD. STABLE (e.g., Large Gravel) [1]  
☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

- ☐ NONE [2]  
☐ LOW [1]  
☒ MODERATE [0]  
☐ EXTENSIVE [-1]

Comments

Riffle /  
Run  
Maximum  
8

3

6] GRADIENT

DRAINAGE AREA

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

%POOL: 20 %GLIDE: 40  
 %RUN: 30 %RIFFLE: 10

Gradient  
Maximum  
10

4

A) SAMPLED REACH

Check ALL that apply

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

METHOD

- ☐ BOAT ☐ HIGH ☐ 1st--sample pass-- 2nd
- ☐ WADE ☐ UP ☐ L. LINE ☐ NORMAL ☐ LOW ☐ DRY
- ☐ OTHER ☐ DISTANCE

STAGE

- ☐ 0.5 Km ☐ CLARITY
- ☐ 0.2 Km ☐ < 20 cm
- ☐ 0.15 Km ☐ 20-40 cm
- ☐ 0.12 Km ☐ 40-70 cm
- ☐ OTHER ☐ > 70 cm/ CTB

- ☐ CANOPY ☐ 1st pass ☐ cm
- ☐ > 85% - OPEN ☐ 2nd ☐ cm
- ☐ 55% - < 85% ☐ 10% - < 30% ☐ < 10% - CLOSED

B) AESTHETICS

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

D) MAINTENANCE

- ☐ PUBLIC / PRIVATE / BOTH / NA
- ☐ ACTIVE / HISTORIC / BOTH / NA
- ☐ YOUNG-SUCCESSION-OLD
- ☐ SPRAY / SNAG / REMOVED
- ☐ MODIFIED / DIPPED OUT / NA
- ☐ LEVEED / ONE SIDED
- ☐ RELOCATED / CUTOFFS
- ☐ MOVING-BED/LOAD-STABLE
- ☐ ARMoured / SLUMPS
- ☐ ISLANDS / SCoured
- ☐ IMPOUNDED / DESICCATED
- ☐ FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

E) ISSUES

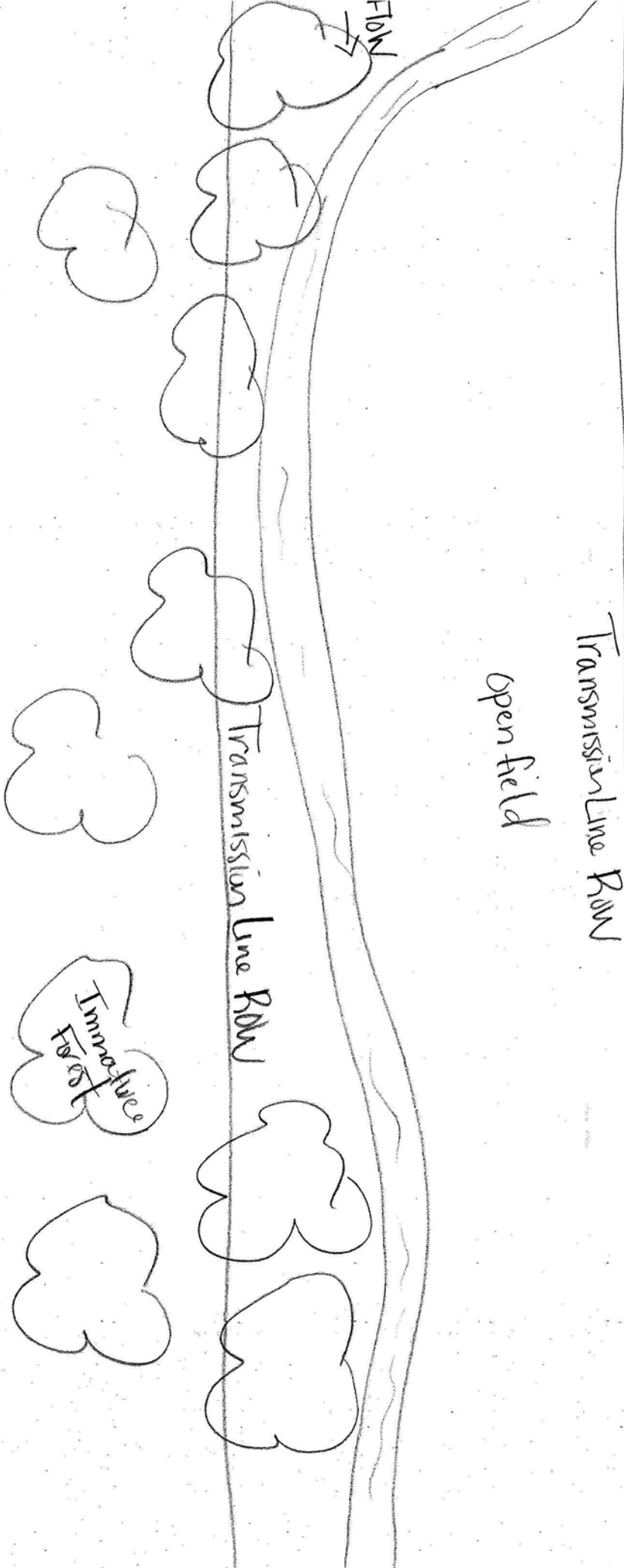
- ☐ WWTP / CSO / NPDES / INDUSTRY
- ☐ HARDENED / URBAN / DIRT&GRIME
- ☐ CONTAMINATED / LANDFILL
- ☐ BMPs-CONSTRUCTION-SEDIMENT
- ☐ LOGGING / IRRIGATION / COOLING
- ☐ BANK / EROSION / SURFACE
- ☐ FALSE BANK / MANURE / LAGOON
- ☐ WASH H<sub>2</sub>O / TILE / H<sub>2</sub>O TABLE
- ☐ ACID / MINE / QUARRY / FLOW
- ☐ NATURAL / WETLAND / STAGNANT
- ☐ PARK / GOLF / LAWN / HOME
- ☐ ATMOSPHERE / DATA PAUCITY

F) MEASUREMENTS

- ☐  $\bar{x}$  width
- ☐  $\bar{x}$  depth
- ☐ max. depth
- ☐  $\bar{x}$  bankfull width
- ☐ bankfull  $\bar{x}$  depth
- ☐ W/D ratio
- ☐ bankfull max. depth
- ☐ floodprone  $\bar{x}^2$  width
- ☐ entrench. ratio

Legacy Tree:

Stream Drawing:



## **APPENDIX E**

### **ODNR and USFWS Correspondence**





# Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

## Office of Real Estate

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

September 24, 2020

Kristen Vonderwish  
GAI Consultants  
6000 Town Center Blvd., Suite 300  
Canonsburg, PA 15317

**Re:** 20-709; Lick Station 138 kV Transmission Substation Project

**Project:** The proposed project involves rebuilding the station by replacing failing, antiquated equipment within the extents of the existing station with associated line work.

**Location:** The proposed project is located in Lick Township, Jackson 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 records at or within a one-mile radius of the project area:

Buttonbush shrub swamp plant community  
Lick Swamp Conservation Site

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

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

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



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

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

The DOW also recommends that a desktop or field-based habitat assessment is conducted to determine if there are potential hibernaculum(a) present within the project area. Habitat assessments should be conducted in accordance with the current USFWS "Range-wide Indiana Bat Survey Guidelines" and submitted to Sarah Stankavich, [sarah.stankavich@dnr.state.oh.us](mailto:sarah.stankavich@dnr.state.oh.us) if potential hibernacula are present within .25 miles of the project area. If a potential 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 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 little spectaclecase (*Villosa lienosa*), a state endangered mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2020), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2020) can be found at: <http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Survey%20Protocol.pdf>



The project is within the range of the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish, and the lake chubsucker (*Erimyzon sucetta*) a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

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

The project is within the range of the northern harrier (*Circus hudsonis*), 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 May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds, they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on this species.

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

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

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

[http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List\\_8\\_16.pdf](http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf)



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

Mike Pettegrew  
Environmental Services Administrator (Acting)

**From:** Ohio, FW3 <ohio@fws.gov>  
**Sent:** Wednesday, July 15, 2020 8:48 AM  
**To:** Kristen Vonderwish; Joshua Noble  
**Cc:** nathan.reardon@dnr.state.oh.us; Parsons, Kate  
**Subject:** Lick Station 138 kV Transmission Substation Project, Jackson Co

## EXTERNAL E-MAIL MESSAGE



UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. Fish and Wildlife Service  
Ecological Services Office  
4625 Morse Road, Suite 104  
Columbus, Ohio 43230  
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2020-TA-1824

Dear Ms. Vonderwish,

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

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and threatened northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees  $\geq 3$  inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees  $\geq 3$  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  $\geq 3$  inches dbh cannot be avoided, we recommend removal of any trees  $\geq 3$



inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see <http://www.fws.gov/midwest/endangered/mammals/nleb/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus it is important to conserve the functions and values of the remaining wetlands in Ohio ([https://epa.ohio.gov/portals/47/facts/ohio\\_wetlands.pdf](https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf)). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

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

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

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Patrice M. Ashfield". The signature is stylized with a large, looping initial "P" and a long, sweeping underline.

Patrice M. Ashfield  
Field Office Supervisor

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



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

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

The DOW also recommends that a desktop or field-based habitat assessment is conducted to determine if there are potential hibernaculum(a) present within the project area. Habitat assessments should be conducted in accordance with the current USFWS "Range-wide Indiana Bat Survey Guidelines" and submitted to Sarah Stankavich, [sarah.stankavich@dnr.state.oh.us](mailto:sarah.stankavich@dnr.state.oh.us) if potential hibernacula are present within .25 miles of the project area. If a potential 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 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 little spectaclecase (*Villosa lienosa*), a state endangered mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2020), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2020) can be found at: <http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20%20permits/OH%20Mussel%20Survey%20Protocol.pdf>



The project is within the range of the Ohio lamprey (*Ichthyomyzon bdellium*), a state endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish, and the lake chubsucker (*Erimyzon sucetta*) a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species. In addition to using wooded areas, the timber rattlesnake also utilizes sunlit gaps in the canopy for basking and deep rock crevices known as den sites for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the Kirtland's snake (*Clonophis kirtlandii*), a state threatened species. This secretive species prefers wet meadows and other wetlands. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

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

The project is within the range of the northern harrier (*Circus hudsonis*), 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 May 15 to August 1. If this habitat will not be impacted, this project is not likely to impact this species.

The project is within the range of the sandhill crane (*Grus canadensis*), a state threatened species. Sandhill cranes are primarily a wetland-dependent species. On their wintering grounds, they will utilize agricultural fields; however, they roost in shallow, standing water or moist bottomlands. On breeding grounds, they require a rather large tract of wet meadow, shallow marsh, or bog for nesting. If grassland, prairie, or wetland habitat will be impacted, construction should be avoided in this habitat during the species' nesting period of April 1 to September 1. If this habitat will not be impacted, this project is not likely to have an impact on this species.

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

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

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

[http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List\\_8\\_16.pdf](http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List_8_16.pdf)

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

Mike Pettegrew  
Environmental Services Administrator (Acting)



**This foregoing document was electronically filed with the Public Utilities**

**Commission of Ohio Docketing Information System on**

**6/9/2021 3:00:25 PM**

**in**

**Case No(s). 21-0591-EL-BNR**

Summary: Notice Waverly – Lick Transmission Line Relocation and Lick Station Expansion  
Construction Notice electronically filed by Tanner Wolffram on behalf of Ohio Power  
Company

**This foregoing document was electronically filed with the Public Utilities  
Commission of Ohio Docketing Information System on**

**11/22/2021 2:27:53 PM**

**in**

**Case No(s). 21-1085-EL-BNR**

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