Construction Notice for Harrison Station Expansion Project

PUCO Case No. 20-1414-EL-BNR

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

Submitted by:
Ohio Power Company

September 8, 2020
CONSTRUCTION NOTICE FOR HARRISON STATION EXPANSION PROJECT

CONSTRUCTION NOTICE
Ohio Power Company’s Harrison Station Expansion Project

4906-6-05
Ohio Power Company (the “Company”) provides the following information to the Ohio Power Siting Board (“OPSB”) pursuant to 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 proposes the Harrison Station Expansion Project (“Project”), located in Harrison Township, Pickaway County, Ohio. The purpose of this Project is to expand the existing Harrison Station by less than 20 percent to add equipment and infrastructure that will bring the station up to current Company resiliency, operational performance, safety, and reliability standards. The Station will be expanded 30 feet to the north to accommodate non-jurisdictional station equipment and to maintain a suitable drive path within the station footprint. The Project will be constructed on existing Company property. Appendix A – Figure 1 shows the location of the Project.

The Project meets the requirements for a Construction Notice (“CN”) because it is within the types of projects defined by (4)(a) of Appendix A to O.A.C. 4906-1-01, Application Requirement Matrix for Electric Power Transmission Lines:

4. Constructing additions to existing electric power transmission stations or converting distribution stations to transmission stations where:

   (a) There is a twenty percent or less expansion of the fenced area.

The Project has been assigned PUCO Case No. 20-1414-EL-BNR.

B(2) Statement of Need
If the proposed project is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.

The Company needs to expand the Harrison Station by less than 20 percent to accommodate non-jurisdictional supplemental work within the station. The expansion is also necessary to maintain a suitable drive path inside the station fence. Failure to move forward with the proposed Project would inhibit the ability to complete the non-jurisdictional station work.

The needs and solution for the supplemental station work were presented and reviewed with stakeholders at the January 30, 2018 and February 14, 2018 PJM SRRTEP Western meetings. The work at Harrison
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Station was subsequently assigned a PJM identifier of s1493.4. Harrison Station was included as an existing substation in AEP Ohio’s 2020 LTFR Form FE-T8, on page 72 of 119. PJM slides and LTFR Form FE-T8 are included as Appendix B.

B(3) Project Location

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

This Project is located in Harrison Township, Pickaway County, Ohio. Appendix A Figure 1 shows the location of the Project in relation to existing assets.

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.

Based on the scope of the Project, the minimal change to the existing station fence, and the location of the Project on Company property, it was not reasonable to study other alternatives. The resulting fence change and expansion represents the most suitable and least-impactful alternative for the Project. The Project is located within new field habitat, old field habitat, and existing graveled areas, with no impacts to wetlands, streams, known cultural areas or threatened and endangered species and their habitats. Socioeconomic, land use, and ecological information is presented in Section B(10).

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 Project will be located entirely on the Company’s property. Therefore, there are no affected property owners that Ohio Power Company is required to inform. The Company maintains a website (http://aeptransmission.com/ohio/) on which an electronic copy of this CN is available. An electronic copy of the CN will be served to the public library in each political subdivision affected by this Project. The Company also retains land agents who will discuss project timelines, construction and restoration activities with affected owners and tenants.

B(6) Construction Schedule

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

Construction of the Project is planned to begin in February of 2021, and the anticipated in-service date will be May of 2022.
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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.

Appendix A, Figure 1 provides a map with existing and proposed facilities, and clearly marked roads and highways at 1:24,000, and Figure 2 provides an aerial showing project components, at a scale of 1:2,400.

To visit the Project from Columbus, take I-71 South toward Cincinnati (3.4 miles), then merge onto I-270 East toward Wheeling (2.4 miles). Take exit 52 to merge onto US-23 South toward Circleville. In approximately 6.5 miles Harrison Station will be on your left.

B(8) Property Agreements

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

The Project is located on property owned by the Company (Parcel No. D1200030030505). No other property easements, options, or land use agreements are necessary to construct the Project or operate the substation.

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.

Harrison Station’s operating characteristics will not change as a result of this Project and there are no additional right-of-way or land requirements.

B(9)(b) Electric and Magnetic Fields

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

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

B(9)(c) Project Cost

The estimated capital cost of the project.

The capital cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately $485,000 using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this
Project will be recovered in the Ohio Power Company’s FERC formula rate (Attachment H-14 to the PJM OATT) and allocated to the AEP Zone.

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

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

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

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

The Project is located within Harrison Township in Pickaway County, Ohio. The Pickaway County Auditor GIS data (http://pickaway.iviewauditor.com/Data.aspx?ParcelID=D1200030030505) lists the land use of this parcel as “300 I – Industrial, Vacant Land.” Field observations by the Company’s consultant show the Project area as being primarily comprised of new field habitat, with old field habitat and existing graveled areas present to a lesser extent. No tree clearing will be required for the station expansion. It is anticipated that limited early successional tree clearing, totaling approximately 0.1 acres, will be required for limited areas of road widening along the existing station access road and outside of the station fence expansion area. Any necessary tree clearing will take place between October 1 and March 31, to adhere to recommendations from the USFWS and ODNR. Additionally, no environmental or significant cultural resources are expected to be impacted as a result of this Project. No residences are located in the Project area or within 100 feet of it.

There is currently one residence within 1,000 feet of the Project area. There are no parks, schools, churches, cemeteries, wildlife management areas, or nature preserve lands within 1,000 feet of the Project area.

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

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

The Project area is located entirely within Company property in Harrison Township, Pickaway County, Ohio. The existing Harrison Station is surrounded primarily by early successional/second growth deciduous forest and agricultural fields with limited areas of new field habitat, old field habitat and second growth riparian forest within the parcel (see Figure 3 in Appendix D). The parcel is classified on the Pickaway County Auditor website as “300 I – Industrial, Vacant Land.” The Project will be completely within the parcel and no agricultural land will be disturbed within the fence expansion area. There are no impacts to agricultural district lands, as verified by the Pickaway County Auditor on August 24, 2020.

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

Provide a description of the applicant’s investigation concerning the presence or absence of significant archaeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.
CONSTRUCTION NOTICE FOR HARRISON STATION EXPANSION PROJECT

Archeological and cultural resources surveys were conducted by the Company’s consultant for the entire Company parcel where the Project is located in October 2019. No sites listed on, or eligible for listing on, the National Register of Historic Places were identified within the Project area or adjacent portions of the parcel surveyed for cultural resources. Correspondence from the State Historic Preservation Office (“SHPO”) was received in November 2019 and January 2020 and is included in Appendix C. The SHPO stated that they agree the Project will not affect historic properties and no further coordination is necessary.

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

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

A Notice of Intent (NOI) will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHCo00005, 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 water quality during storm events.

Coordination with the SHPO, the United States Fish and Wildlife Service (“USFWS”), and the Ohio Department of Natural Resources (“ODNR”) have been completed and coordination letters can be found in Appendix C.

The Project will not require a Clean Water Act Section 404 Permit from the U.S. Army Corps of Engineers (“USACE”) or Pre-Construction Notification to the USACE, as no streams or wetlands will be impacted by the Project. Additionally, the station expansion limits are not located within mapped Federal Emergency Management Agency (“FEMA”) 100-year floodplain or floodway areas. Therefore, no floodplain permitting is expected to be required for the station expansion. However, limited areas of road widening/grading are proposed to occur along the existing station access road. The station access road is located within a mapped FEMA 100-year floodplain area, which will require a Flood Hazard Area Development Permit through the Pickaway County Floodplain Administrator.

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

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

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

The USFWS Ohio Ecological Services Field Office list of federally endangered, threatened, and candidate species in Ohio by County (available at https://www.fws.gov/midwest/ohio/EndangeredSpecies/pdf/SpeciesListByCountyApril2018.pdf) was
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reviewed by the Company’s consultant to determine the threatened and endangered species that currently are known to occur, or that have the potential to occur, in Pickaway County. This USFWS publication listed the following threatened and endangered species and federal species of concern as occurring in or having the potential to occur in Pickaway County: Indiana bat (Myotis sodalis; federally endangered), northern long-eared bat (Myotis septentrionalis; federally threatened), Scioto madtom (Noturus trautmani; federally endangered), clubshell (Pleurobema clava; federally endangered), northern riffleshell (Epioblasma torulosa rangiana; federally endangered), rabbitsfoot (Quadrula cylindrica cylindrica; federally threatened), rayed bean (Villosa fabalis; federally threatened), snuffbox (Epioblasma triquetra; federally endangered), and running buffalo clover (Trifolium stoloniferum; federally endangered).

A USFWS-approved running buffalo clover surveyor completed a habitat assessment for this species within the Project area and no suitable running buffalo clover habitat is present within the station fence expansion area or the adjacent access road widening area. Additionally, no suitable winter hibernacula or suitable roost trees for the Indiana bat or northern long-eared bat were observed within the Project area and no potential roost trees for these species will need to be removed for the Project.

As part of the ecological study completed for the Project, a coordination letter was submitted to the USFWS Ohio Ecological Services Field Office seeking technical assistance on the Project for potential impacts to threatened or endangered species. The October 7, 2019 response letter from the USFWS (see Appendix C) states that should the Project site contain trees ≥3 inches diameter at breast height (“dbh”), USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, USFWS recommends that removal of trees ≥3 inches dbh only occur between October 1 and March 31 to avoid adverse effects to this species. If implementation of seasonal tree clearing is not possible, the USFWS recommends summer presence/absence surveys be conducted between June 1 and August 15.

Any tree clearing that is necessary for the Project is planned to take place between October 1 and March 31. Therefore, no impacts to the Indiana bat or northern long-eared bat are anticipated.

The USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed or candidate species due to the Project type, size, and location.

Several state-listed threatened species, endangered species, and species of concern are listed by the Ohio Department of Natural Resources (“ODNR”; https://ohiodnr.gov/static/documents/wildlife/state-listed-species/pickaway.pdf) as occurring in, or potentially occurring in Pickaway County and/or are listed by the ODNR as occurring statewide. These state-listed species are addressed in detail in the Ecological Resources Inventory Report included in Appendix D. A coordination letter was submitted via email to the ODNR Office of Real Estate on September 24, 2019 seeking an environmental review of the proposed Project for potential impacts to state-listed and federally listed threatened or endangered species (see Appendix C).

According to the ODNR response letter received on November 7, 2019, the Project area is within the range of the state-listed endangered Indiana bat. If suitable habitat occurs within the Project area, the ODNR recommends trees be conserved. If suitable habitat occurs within the Project area and trees must be cut, the ODNR recommends cutting occur between October 1 and March 31. If no tree removal is proposed, this Project is not likely to impact this species. According to the ODNR, the little brown bat (Myotis lucifugus;
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state-listed endangered), northern long-eared bat (state-listed endangered), and tri-colored bat
(*Perimyotis subflavus*; state-listed endangered) occur statewide in Ohio. These species also roost in trees
during the summer months and the little brown bat and tri-colored bat also roost in buildings. As stated
above, any tree clearing that is necessary for the Project is planned to take place between October 1 and
March 31. Additionally, no buildings will be removed as part of the Project. Therefore, no impacts to the
Indiana bat, northern long-eared bat, little brown bat, or tri-colored bat are anticipated.

The ODNR response letter also states that the Project area is within the range of 19 state-listed mussel
species and 10 state-listed fish species (Appendix C). However, the ODNR stated that due to the location of
the Project, and that there is no in-water work proposed in a perennial stream, this Project is not likely to
impact fish or mussel species.

According to the ODNR, the Project is within range of the upland sandpiper a state endangered bird species.
However, the ODNR states that if no suitable nesting habitat is present within the Project area and/or if
construction is avoided in suitable nesting habitat for this species during its nesting period (April 1 – July
31), the Project is not likely to impact this species. Field observations determined no suitable nesting habitat
for the upland sandpiper is present within the Project area. Therefore, the Project is not likely to impact
this species.

Additionally, the ODNR response letter listed the following species as occurring within a one-mile radius of
the Project area: elktoe (*Alasmidonta marginata*; state and federal species of concern), elephant-ear
(*Elliptio crassidens*; state endangered), snuffbox (*Epioblasma triquetra*; state and federally endangered),
Wavy-rayed lampmussel (*Lampsilis fasciola*; state species of concern), black sandshell (*Ligumia recta*;
state threatened), washboard (*Megalonaias nervosa*; state endangered), threehorn wartyback (*Obliquaria
reflexa*; state threatened), kidneyshell (*Ptychobranchus fasciolaris*; state species of concern), rabbitsfoot
(*Theliderma cylindrica*; state endangered and federally threatened), fawnsfoot (*Truncilla donaciformis*;
state threatened), deertoe (*Truncilla truncata*; state species of concern), rayed-bean (*Villosa fabalis*; state
and federally endangered), Tippecanoe darter (*Etheostoma tippecanoe*; state threatened), and shortnose
gar (*Lepisosteus platostomus*; state endangered). Field observations determined there is potentially
suitable habitat for one fish species (Tippecanoe darter) and several of the listed mussel species within the
ecological resources survey area, within Stream 1 (Big Walnut Creek). However, as stated above, no in-
water work is proposed by the Company as part of the Project and Big Walnut Creek is located well outside
of the station fence expansion area. Therefore, no impacts to any of the state-listed threatened and
endangered species and/or state species of concern aquatic species are anticipated.

A very limited amount of potentially suitable nesting habitat (old field habitat) for the lark sparrow
(*Chondestes grammacus*; state endangered) is present within the station fence expansion area and the
access road widening/grading area. However, vegetation clearing associated within the Project is planned
to take place in February of 2021, outside of the lark sparrow’s nesting season (May 1 to June 30).
Therefore, no impacts to this species are anticipated as part of the Project.
B(10)(f) Areas of Ecological Concern

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

The USFWS response letter indicates that there are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the Project area (Appendix C). Additionally, the ODNR response letter states that no records of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas occur within the Project area (Appendix C).

An ecological resources inventory report was completed by the Company's consultant on September 4, 2020. One stream (Stream 1; Big Walnut Creek) was observed within the Project area but is located well outside the proposed limits of disturbance. Additionally, no wetlands or other waterbodies were observed within the Project area. Therefore, impacts to water resources is not anticipated by the Project (Appendix D).

B(10)(g) Unusual Conditions

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

To the best of the Company's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.
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APPENDIX A   Project Figures
Figure 1
Project Location Map

Legend
- Substation
- Existing 69 kV Line (69 kV or lower)
- Existing Transmission Line (115 kV - 230 kV)
- Existing Station Fence

Data Sources: AEP, USGS

Coordinate System and Datum
NAD 1983 State Plane Ohio South

Harrison Station Expansion Project

August 19, 2020
Figure 2
Project Aerial Map

Legend
- Substation
- Existing 69 kV Line (69 kV or lower)
- Existing Transmission Line (115 kV - 230 kV)
- Proposed Station Fence Expansion
- Existing Station Fence

Data Sources: AEP, ArcMap Basemap, World Imagery, 2019

Coordinate System and Datum
NAD 1983 State Plane Ohio South

August 25, 2020
CONSTRUCTION NOTICE FOR HARRISON STATION EXPANSION PROJECT

APPENDIX B             PJ M RTEP and LTFR Submittals
Previously presented on 1/30/2018 SRRTEP

Problem Statement:
Equipment Material/Condition/Performance/Risk:
The Harrison-Madison 69kV circuit (made up of Picway-Madison, vintage 1944 & Picway Harrison, vintage 1969) is in very poor condition and in need of rebuild. 15.29 miles of the 24.2 mile line is 73 years old and 16.4 miles of it is comprised of copper conductor (25 MVA rating). There are 248 known conditions as of the last inspection. Due to the radial nature of the line, it cannot be rebuilt without first completing and closing the loop at Madison station in order to avoid extensive customer outages.

The transmission line operations crew receives multiple call outs on this line, and it's construction makes it difficult to repair. There are also co-op customers and a pipeline customer served off this line that are affected when the line is outaged.

Four circuit breakers at Harrison station are showing signs of deterioration. These breakers were installed in the late 1960's and early 1970's and use oil as the interrupting medium. Oil breaker maintenance has become more difficult due to the oil handling required to maintain them. Oil spills are frequent with breaker failures and routine maintenance and can become an environmental hazard. The drivers for replacement of these breakers are age, bushing damage, no repair part availability, amount of fault operations and PCB content. Fault operation counts at Harrison include 13 on 69kV CB 61, 58 on 69kV CB 62, and 23 on 69kV CB 63, which exceed the manufacturer's recommended limit of 10.

Harrison 138/69kV transformer 1 is also showing signs deterioration. Drivers for transformer replacement include age, dielectric strength breakdown (winding insulation), short circuit strength breakdown (due to the amount of through fault events) and accessory damage (bushings).
Continued from previous slide...

Operational Flexibility and Efficiency:
A normally opened configuration at Str. 280 (near the Darbyville tap location) allows for limited temporary recovery of loads at Deer Creek, Darbyville, Clark Lakes, Texas Eastern Co., and Madison stations for outages involving Str. 280 to Harrison branch. This configuration depends on utilizing normally radial customer owned 69kV transmission line. However, there are not recovery options if the outages involve Str. 280 to Madison branch. Existing small conductors also limit the load recovery options in this configuration.

Customer Service:
SCP has approached AEP to help address numerous outages affecting customers in this area.

Selected Solution:
Build a new Beatty-Madison 69 kV line utilizing 795 ACSR (129 MVA rating) in new ROW. Acquire existing 636 ACSR & 336 ACSR (73 MVA rating) in existing ROW. (S1493.1) Estimated Transmission Cost: $16.2M
Rebuild single circuit 69kV line from Harrison to Madison with 795 ACSR (129 MVA rating), mostly in existing ROW. (S1493.2) Estimated Transmission Cost: $23.4M
Rebuild tap to Darbyville as double circuit 795 ACSR (129 MVA rating). (S1493.3) Estimated Transmission Cost: $0.9M
At Harrison station, replace the 138/69kV transformer with a 90 MVA. Install 3-69kV CB’s with 2,000A 40kA breakers. Install 1-138kV CB with a 3,000A 63kA breaker. Install a 14.4 MVAr 69kV capacitor. (S1493.4) Estimated Transmission Cost: $5.8M
At Madison station, install 2 new 69kV 2,000A 40kA CB’s and 1 600A 40kA ckt switcher. (S1493.5) Estimated Transmission Cost: $3.0M
At Big Darby Switch, Dry Run Switch, and Ballah Switch, upgrade with 2000A switches at new locations. Retire old switches (S1493.6) Estimated Transmission Cost: $1.3M

Total Estimated Transmission Cost: $50.6M

Projected In-service: 12/1/2019

Project Status: Engineering
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<td>Harrison (CSP) - South Central</td>
<td>E</td>
</tr>
<tr>
<td>HAVILAND</td>
<td>T</td>
<td>138</td>
<td>East Lima - Haviland</td>
<td>E</td>
</tr>
</tbody>
</table>
November 7, 2019

Dan Godec
Stantec
1500 Lake Shore Drive Suite 100
Columbus OH 43204-3800

Re: 19-837; Harrison Road Station Expansion Project

**Project:** The Project involves the expansion of the existing Harrison Road 138 kV substation (Harrison Road Station) on the approximate 39-acre substation property.

**Location:** The proposed project is located in the City of Lockbourne, Pickaway 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:

- Elktoe (*Alasmidonta marginata*), SC, FSC
- Elephant-ea (*Elliptio crassidens*), E
- Snuffbox (*Epioblasma triquetra*), E, FE
- Tippecanoe darter (*Etheostoma tippecanoe*), T
- Wavy-rayed lampmussel (*Lampsilis fasciola*), SC
- Shortnose gar (*Lepisosteus platostomus*), E
- Black sandshell (*Ligumia recta*), T
- Washboard (*Megalonaias nervosa*), E
- Threehorn wartyback (*Obliquaria reflexa*), T
- Kidneyshell (*Ptychobranchus fasciolaris*), SC
- Rabbisfoot (*Theliderma cylindrica*), E, FT
- Fawnsfoot (*Truncilla donaciformis*), T
- Deertoe (*Truncilla truncata*), SC
- Rayed bean (*Villosa fabalis*), E, FE
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.

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

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

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

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), post oak (*Quercus stellata*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the purple cat’s paw (*Epioblasma o. obliquata*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the northern riffleshell (*Epioblasma torulosa rangiana*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the rabbitsfoot (*Quadrula cylindrica*), a state endangered and federal candidate mussel, the washboard (*Megalonaias nervosa*), a state endangered mussel, the butterfly (*Ellipsaria lineolata*), a state endangered mussel, the long-solid (*Fusconaia maculata maculata*), a state endangered mussel, the ebonyshell (*Fusconaia ebena*), a state endangered mussel, the sharp-ridged pocketbook (*Lampsilis ovata*), a state endangered mussel, the pyramid pigtoe (*Pleurobema rubrum*), a state endangered mussel,
the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the elephant-ear (*Elliptio crassidens*), a state endangered mussel, the threethorn wartyback (*Obliquaria reflexa*), a state threatened mussel, the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel, the pondhorn (*Uniomerus tetralasmus*), a state threatened mussel, and the black sandshell (*Ligumia recta*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the Scioto madtom (*Noturus trautmani*), a state endangered and federally endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish and a federal species of concern, the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the northern madtom (*Noturus stigmosus*), a state endangered fish, the goldeye (*Hiodon alosoides*), a state endangered fish, the shortnose gar (*Lepisosteus platostomus*), a state endangered fish, the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, the paddlefish (*Polyodon spathula*), a state threatened fish, the bigeye shiner (*Notropis boops*), a state threatened fish, and the lake chubsucker (*Erimyzon sucetta*), a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

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

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

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

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


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

Mike Pettegrew
Environmental Services Administrator (Acting)
Dear Mr. Godec,

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

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

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered Indiana bat (Myotis sodalis) and the federally threatened northern long-eared bat (Myotis septentrionalis). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.
Should the proposed site contain trees =3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees =3 inches dbh cannot be avoided, we recommend that removal of any trees =3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being 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, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this 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.

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

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

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

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

Sincerely,
Patrice M. Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
    Kate Parsons, ODNR-DOW
November 14, 2019

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

RE: Harrison Station Expansion Project, Harrison Township, Pickaway County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on October 30, 2019 regarding the proposed Harrison Station Expansion Project, Harrison Township, Pickaway 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 15.8 ha (39 ac) Harrison Station Expansion Project in Harrison Township, Pickaway County, Ohio by Weller & Associates, Inc. (2019).

A literature review, visual inspection, surface collection, and shovel test unit excavation was completed as part of the investigations. Six (6) previously identified archaeological sites are located within the project area. One (1) of the six sites was re-identified during survey. The site, Ohio Archaeological Inventory (OAI) #33PU1400, identified in 2016 during the Long Good Hope-Harrison 138kV Transmission Line Rebuild Project, was originally not recommended for further survey. However, during this survey, the site boundaries expanded and additional artifacts (fire-cracked rock) were identified. The site is now recommended for avoidance or additional investigations. The remaining five (5) previously identified archaeological sites within the project area, OAI#33PI1394, 33PI1395, 33PI1399, 33PI1401, and 33PI1419, are not recommended eligible for listing in the National Register of Historic Places (NRHP). Our office also agrees with this recommendation. Eleven (11) new archaeological sites, OAI#33PI1572-33PI1582, were identified during the survey. None of these sites are recommended eligible for listing in the NRHP. Our office agrees with this recommendation and no additional investigations are recommended on the newly identified archaeological sites.

In summary, Phase II site assessment investigation, or avoidance, is recommended for OAI#33PI1400. We look forward to additional coordination regarding the Harrison Station Expansion Project. If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrocks@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

cc: Amy Toohey, AEP (ajtoohey@aep.com)
January 14, 2020

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

RE: Harrison Station Expansion Project, Harrison Township, Pickaway County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on December 31, 2019 regarding the proposed Harrison Station Expansion Project, Harrison Township, Pickaway 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 II Archaeological Assessment at Site 33PL1400 within the Proposed Harrison Station Expansion Project in Harrison Township, Pickaway County, Ohio by Weller & Associates, Inc. (2019).

Phase II archaeological assessment took place on Ohio Archaeological Inventory (OAI) site 33PL1400. Methodology included geophysical survey, close-interval shovel test excavation, and test unit excavation. A total of ninety-three (93) prehistoric artifacts were recovered and no subsurface features were identified. The site was recommended not eligible for listing in the National Register of Historic Places (NRHP). Our office agrees with this recommendation and no future archaeological investigation 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 khorrocks@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

cc: Amy Toohey, AEP (ajtoohey@aep.com)
APPENDIX D  Ecological Resources Inventory Report
Harrison Station Expansion
Project, Pickaway County, Ohio

Ecological Resources Inventory Report

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

Prepared by:
Stantec Consulting Services, Inc.
11687 Lebanon Road
Cincinnati, OH 45241

September 4, 2020
Sign-off Sheet

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

Prepared by Kate Bomar

(signature)

Kate Bomar

Reviewed by Daniel J. Godec

(signature)

Dan Godec
ECOLOGICAL RESOURCES INVENTORY REPORT, HARRISON STATION EXPANSION PROJECT, PICKAWAY COUNTY, OHIO

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1.0 INTRODUCTION

AEP Ohio Transmission Company, Inc. (AEP) is proposing to expand the existing Harrison 138 kV substation (Harrison Station) in Pickaway County, Ohio (Figure 1, Appendix A). The Project area includes the 39-acre substation property. The Project area was surveyed for wetlands, waterbodies, open water features, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on October 11, 2019. The approximate locations of features located up to 50 feet outside of the Project area were also recorded during the field surveys, where landowner access was permitted. However, no data forms were collected on features that did not extend into the parcel. The approximate locations of these features are shown on the Figure 2 maps in Appendix A as “approximate” wetlands, streams, open waters, and upland drainage features.
2.0 METHODS

2.1 WETLAND DELINEATION

Prior to completing the field surveys, a desktop review of the Project area was conducted using U.S. Geological Survey (USGS) topographic mapping, National Wetlands Inventory (NWI) maps, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data, and aerial imagery mapping. Stantec completed a wetland delineation study in accordance with the Corps of Engineers Wetlands Delineation Manual (USACE 1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) (USACE 2010). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high-water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area, per the protocols outlined in the USACE’s Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05) (USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the Federal Register/Vol. 67, No. 10 (USACE 2002). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency’s (OEPA) Headwater Habitat Evaluation Index (HHEI; OEPA 2012) and/or Qualitative Habitat Evaluation Index (QHEI; OEPA 2006). The centerline and/or the OHWM locations of each waterway were identified and surveyed using a handheld sub-meter accuracy GPS unit and mapped with GIS software. Additionally, the locations of upland drainage features (which lacked a continuously defined bed and bank/OHWM) identified within the Project area were also recorded with a sub-meter accuracy GPS unit during the field surveys.

2.3 RARE SPECIES

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

3.1 TERRESTRIAL HABITAT

Stantec completed field surveys within the Project area on October 11, 2019 for potential threatened and endangered species habitats. Figure 3 (Appendix A) shows the land uses and habitats and locations of any rare, threatened, or endangered species habitat observed within the Project area during the habitat assessment surveys. Representative photographs of the vegetation communities/habitats identified within the Project area are included in Appendix C of this report (photo locations are shown on Figures 3, Appendix A). Information regarding the vegetation communities/habitats identified within the Project area is provided in Table 1.

Table 1. Vegetation Communities and Land Cover Found within the Harrison Station Expansion Project Area, Pickaway County, Ohio

<table>
<thead>
<tr>
<th>Vegetation Communities and Land Cover Types within the Project Area</th>
<th>Degree of Human-Related Ecological Disturbance</th>
<th>Unique, Rare, or High Quality?</th>
<th>Approximate Acreage Within Project Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agricultural Field</td>
<td>Extreme Disturbance/Ruderal Community dominated by planted non-native species, opportunistic invaders, and/or native highly tolerant taxa. These agricultural fields were planted with corn (<em>Zea mays</em>) at the time of the field surveys.</td>
<td>No</td>
<td>13.96</td>
</tr>
<tr>
<td>New Field</td>
<td>Extreme Disturbance/Ruderal Community dominated by opportunistic invaders and/or native highly tolerant taxa. Common plant species included Canada goldenrod (<em>Solidago canadensis</em>), chicory (<em>Cichorium intybus</em>), alsike clover (<em>Trifolium hybridum</em>), common dandelion (<em>Taraxacum officinale</em>), Fuller’s teasel (<em>Dipsacus fullonum</em>), grape (<em>Vitis sp.</em>), red clover (<em>Trifolium pratense</em>), narrowleaf plantain (<em>Plantago lanceolata</em>), tall fescue (<em>Schedonorus arundinaceus</em>), Queen Anne’s lace (<em>Daucus carota</em>), Canada thistle (<em>Cirsium</em>).</td>
<td>No</td>
<td>0.81</td>
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</tbody>
</table>
## Results
September 4, 2020

<table>
<thead>
<tr>
<th>Vegetation Communities and Land Cover Types within the Project Area</th>
<th>Degree of Human-Related Ecological Disturbance</th>
<th>Unique, Rare, or High Quality?</th>
<th>Approximate Acreage Within Project Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Field</td>
<td>Extreme Disturbance/Ruderal Community dominated by planted non-native herbaceous species, opportunistic invaders, and/or native highly tolerant taxa. Common plant species included Amur honeysuckle (Lonicera maackii), American pokeweed (Phytolacca americana), Fuller’s teasel, honeylocust (Gleditsia triacanthos), eastern daisy fleabane, rough cocklebur (Xanthium strumarium), lesser burdock (Arctium minus), red mulberry (Morus rubra), and white snakeroot (Ageratina altissima).</td>
<td>No</td>
<td>4.42</td>
</tr>
<tr>
<td>Industrial Land</td>
<td>Extreme Disturbance (paved and/or graveled areas associated with existing facilities).</td>
<td>No</td>
<td>3.02</td>
</tr>
<tr>
<td>Second Growth Riparian Forest</td>
<td>Moderate Disturbance/Natural Community dominated by native trees and herbaceous species. Common plant species included eastern poison ivy (Toxicodendron radicans), green ash (Fraxinus pennsylvanica), riverbank grape (Vitis riparia), sugar maple (Acer saccharum), riverbank wildrye (Elymus riparius), boxelder (Acer negundo), pawpaw (Asimina triloba), and American basswood (Tilia americana).</td>
<td>No</td>
<td>2.13</td>
</tr>
</tbody>
</table>
3.2 WETLANDS

Stantec completed field surveys for wetlands within the Project area on October 11, 2019. There were no wetlands identified within the Project area. One wetland determination sample point (SP 1) was evaluated within the Project area (Figure 2 (Appendix A)). This area was assessed because it was near a mapped NWI palustrine scrub-shrub (PSS) wetland located outside of the Project area. The area had hydric vegetation but lacked wetland hydrology and the soils were not found to be hydric. The wetland determination data form completed for SP 1 is provided in Appendix D. Representative photographs are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A).
3.3 STREAMS

Stantec completed field surveys for waterbodies (streams) within the Project area on October 11, 2019. One perennial stream (Stream 1; Big Walnut Creek) was identified within the Project area (Figure 2, Appendix A). Representative photographs of the stream are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A). The completed QHEI data form for Stream 1 is included in Appendix D. Information regarding the stream identified within the Project area is provided in Table 2.

### Table 2. Summary of Stream Resources Found within the Harrison Station Expansion Project Area, Pickaway County, Ohio

<table>
<thead>
<tr>
<th>Stream Name</th>
<th>Photo Location Number(^1)</th>
<th>Receiving Waters</th>
<th>Stream Flow Regime(^2)</th>
<th>Stream Evaluation Method</th>
<th>Stream Evaluation Score</th>
<th>OHWM(^3) Width (feet)</th>
<th>Delineated Length (feet) within Project Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stream 1 (Big Walnut Creek)</td>
<td>1, 2</td>
<td>Scioto River</td>
<td>Perennial</td>
<td>QHEI</td>
<td>56</td>
<td>95</td>
<td>2,531</td>
</tr>
</tbody>
</table>

\(^1\) Appendix C – Representative photographs as shown on Figure 2 (Appendix A)

\(^2\) Stream classification is based on Federal Register/Vol. 67, No. 10 (USACE 2002)

\(^3\) OHWM = Ordinary High Water Mark

3.4 OPEN WATERS

No open waters (ponds or lakes) were delineated within the Project area during the field surveys completed on October 11, 2019.
### 3.5 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 3. Summary of Potential Ohio State-Listed Species within the Harrison Station Expansion Project Area, Pickaway County, Ohio

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>State Listing</th>
<th>Known to Occur in Pickaway County?</th>
<th>Known Within One Mile of Project Area?</th>
<th>Habitat Preference</th>
<th>Potential Habitat Observed in Project Area?</th>
<th>Impact Assessment</th>
<th>ODNR Comments/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Insects</strong></td>
<td></td>
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</tr>
<tr>
<td>Plains Clubtail</td>
<td>Gomphus externus</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>Dragonflies require freshwater habitats such as lakes, ponds, wetlands and perennial streams. The water quality and/or rate of water flow may affect habitat preference (ODNR 2020b).</td>
<td>Yes</td>
<td>Potentially suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>No comments received.</td>
</tr>
<tr>
<td><strong>Fish</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spotted Darter</td>
<td>Etheostoma maculatum</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>This fish is found in medium sized rivers and streams. They are typically found in areas of swift current at the top or bottom end of a riffle where there are many very large boulders or flab slabs or rock. They spend most of their time hiding under the upstream edge of these large rocks (ODNR 2020b).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area and no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within range of the spotted darter, a state endangered fish and federal species of concern. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Goldeye</td>
<td>Hiodon alosoides</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>Goldeye are found in large rivers and are rather tolerant of (and actually seem to have a preference for) turbid waters from clay silts. They do not, however, tolerate industrial chemical pollutants. They are often found in areas with swift currents, often below dams. In Ohio the goldeye is found in the Ohio River and its larger tributaries, particularly the Sciota River. Likely because of its preference for somewhat turbid waters it used to be much more abundant than the closely related mooneye. Today the goldeye is very rare in Ohio waters of the Ohio River and is far out numbered by the clear water preferring mooneye (ODNR 2020b).</td>
<td>Yes</td>
<td>Potentially suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within range of the goldeye, a state endangered fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Shortnose Gar</td>
<td>Lepisosteus platostomus</td>
<td>E</td>
<td>Yes</td>
<td>Yes</td>
<td>Shortnose gar are found in large rivers and associated overflow ponds and backwaters. They are more tolerant of turbid (murky) waters than most gar species but young are rather dependent on stagnant backwaters making them sensitive to destruction of these habitats. In Ohio this is a rather</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to</td>
<td>The Project is within range of the shortnose gar, a state endangered fish. Due to the location, and that there is no in-water work proposed in a</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>State Listing</td>
<td>Known to Occur in Pickaway County?</td>
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</tr>
<tr>
<td>Scioto Madtom</td>
<td>Noturus trautmani</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>rare species and is only found in the Ohio River and some of its larger tributaries, particularly the Scioto River (ODNR 2020b).</td>
<td>this species are anticipated.</td>
<td>Yes</td>
<td>perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Northern Brook Lamprey</td>
<td>Ichthyomyzon fossor</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>Adult northern brook lampreys are found in clear brooks with fast flowing water and either sand or gravel bottoms. Juveniles or ammocoetes are found in slow moving water buried in soft substrate of medium to large streams. Water sources must be free flowing (free of dams for both life phases (ODNR 2020b).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within range of the northern brook lamprey, a state endangered fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Northern Madtom</td>
<td>Noturus stigmosus</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>The Northern madtom is found in deep swift riffles of large rivers. They usually are found in and around cobbles and boulders. In Ohio this species has a limited range and is only found in a few locations in the Muskingum, Scioto, and Little Miami River drainages (ODNR 2020b).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within range of the northern madtom, a state endangered fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
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</table>
**Shovelnose Sturgeon**

*Scaphirhynchus platyrhynchus*

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<tr>
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</thead>
<tbody>
<tr>
<td>Shovelnose Sturgeon</td>
<td><em>Scaphirhynchus platyrhynchus</em></td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>The shovelnose sturgeon is a large river species that prefers sand and gravel substrates with rather fast current. Historically they were abundant in the Ohio River all the way upstream to the Pennsylvania line. They steadily decreased in abundance in the Ohio River after 1910 when the present day lock and dam system was first constructed. Today they are a rare find in Ohio. Small numbers of shovelnose sturgeon can still be found in the Ohio River from Portsmouth to the Indiana line and in the lower Scioto River (ODNR 2020b).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>No comments received.</td>
</tr>
</tbody>
</table>

**Bigeye Shiner**

*Notropis boops*

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<tr>
<th>Common Name</th>
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</thead>
<tbody>
<tr>
<td>Bigeye Shiner</td>
<td><em>Notropis boops</em></td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>Bigeye shiners are found in pools of small, very clear streams with sand or gravel substrate that often cease to flow in late summer, trapping the shiners in the pools. They are very intolerant of turbid (murky) waters and have become a very rare species in Ohio. They can still be found in the southwest part of the state, occasionally in the Little Miami River system and other direct Ohio River tributaries such as White Oak and Turkey Creeks. There may also still be a population in parts of the Scioto River tributary Sunfish Creek (ODNR 2020b).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within range of the bigeye shiner, a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
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**Paddlefish**

*Polyodon spathula*

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<th>Impact Assessment</th>
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</thead>
<tbody>
<tr>
<td>Paddlefish</td>
<td><em>Polyodon spathula</em></td>
<td>T</td>
<td>Yes</td>
<td>No</td>
<td>Paddlefish are found in the Ohio River and up to the first dam on its larger tributaries. They prefer the sluggish pools and backwater areas of these rivers and streams. Historically they were much more common and could be found as far up the Ohio River as Pennsylvania. It is also probable that there was a small population in Lake Erie at one time. Today paddlefish are most common in the Ohio River from Portsmouth downstream to the Indiana state line (ODNR 2020b).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within range of the paddlefish, a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
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</tr>
<tr>
<td>Tippecanoe Darter</td>
<td>Etheostoma tippecanoe</td>
<td>T</td>
<td>Yes</td>
<td>Yes</td>
<td>This fish prefers medium to large streams in the Ohio River drainage system and are found in riffles of moderate current with substrates of gravel or cobble sized rocks [ODNR 2020b].</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within range of the Tippecanoe darter, a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Lake Chubsucker</td>
<td>Erimyzon sucetta</td>
<td>T</td>
<td>Yes</td>
<td>Yes</td>
<td>Lake chubsuckers are found in natural lakes and very sluggish streams or marshes with dense aquatic vegetation and clear waters. In Ohio they are primarily found in glacially formed natural lakes often referred to as pothole or kettle lakes. Historically they were found in Nettle Lake of extreme NW Ohio, a group of small pothole lakes between Bellefontaine and Urbana Ohio, and in many small pothole lakes in NE Ohio. Additionally, they were found in three man-made lakes where one or several of these small natural lakes were flooded to form a larger reservoir. These included Buckeye Lake, Indian Lake, and the Portage Lakes. Today they are still present in these natural lakes that still have very clear water and an abundance of aquatic vegetation primarily in the group of lakes between Bellefontaine and Urbana. Additionally, three slow moving stream systems that have interconnected wetland complexes, these include Killbuck Marsh, the upper Cuyahoga River, and the Black Fork of Symmes Creek including Jackson Lake which is part of this system. They are also still present in parts of the Portage Lakes (ODNR 2020b).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within range of the lake chubsucker, a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Common Name</td>
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<tr>
<td>Blue Sucker</td>
<td>Cycleptus elongatus</td>
<td>T</td>
<td>Yes</td>
<td>No</td>
<td>Blue suckers are an inhabitant of deep, swiftly flowing chutes or channels of large rivers. They are not uncommon in fast, gravel-bottomed chutes of the lower Scioto River, from around Piketon downstream to the Ohio River. They are also present in the lower portions of the Great and Little Miami, Muskingum, and Hocking Rivers. They can also be found in the Ohio River where they eat various aquatic invertebrates (ODNR 2020b).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>No comments received.</td>
</tr>
<tr>
<td>Mussels</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Fanshell</td>
<td>Cyprogenia stegaria</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>Medium to large streams and rivers with moderate to strong current in coarse sand and gravel and depths ranging from shallow to deep (NatureServe 2019).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the fanshell, a state endangered and federally endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Butterfly</td>
<td>Ellipsaria lineolata</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>This species reaches its greatest abundance in large rivers in stretches with pronounced current and a substrate of coarse sand and gravel. It appears to have been successful in adapting to impoundment conditions in the Cumberland and Tennessee Rivers where it is locally common and can be found at depths of up to 20 feet (Parmalee and Bogan 1998; NatureServe 2019).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the butterfly, a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Elephant-ear</td>
<td>Elliptio crassidens</td>
<td>E</td>
<td>Yes</td>
<td>Yes</td>
<td>This species inhabits muddy sand, sand and rocky substrates in moderate currents (Heard, 1979). It is also an inhabitant of channels. In the ACF basin, it is most common in large creeks to rivers with moderate to swift currents primarily on sand and limestone or rock substrates (Brim Box and Williams, 2000; NatureServe 2019).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the elephant-ear, a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
</tbody>
</table>
**Common Name** | **Scientific Name** | **State Listing** | **Known to Occur in Pickaway County?** | **Known Within One Mile of Project Area?** | **Habitat Preference** | **Potential Habitat Observed in Project Area?** | **Impact Assessment** | **ODNR Comments/Recommendations**
--- | --- | --- | --- | --- | --- | --- | --- | ---
Purple Cat's Paw | *Epioblasma obliquata* | E | Yes | No | Inhabits large river systems in sand and gravel substrates in runs and riffles (NatureServe 2019). | Yes | No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated. | The Project is within the range of the purple cat's paw, a state endangered and federally endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species. |
Northern Riffleshell | *Epioblasma torulosa rangiana* | E | No | No | Preferred habitat appears to require swiftly moving water. The high oxygen concentrations in swift streams may be necessary for survival. It is a species of riffle areas of smaller streams, and as such has fared better than larger river species, which have been heavily impacted by dredging and impoundment (NatureServe 2019). | Yes | Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated. | The Project is within the range of the northern riffleshell, a state endangered and federally endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species. |
Pink Mucket | *Lampsilis abrupta* | E | Yes | No | Characterized as a large river species (Dennis 1984) associated with fast-flowing waters, although in recent years it has been able to survive and reproduce in impoundments with river-lake conditions but never in standing pools of water (USFWS 1985). Found in waters with strong currents and sand and gravel substrates (Gordon and Layzer 1989; USFWS 1985; NatureServe 2019). | No | No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated. | No comments received. |
Snuffbox | *Epioblasma triquetra* | E | Yes | Yes | Occurs in medium-sized streams to large rivers, generally on mud, rocky, gravel, or sand substrates in flowing water. This species is often deeply buried in substrate and overlooked by collectors (NatureServe 2019). It is found in a wide range of particle sized substrates. However, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogan 1998; Watters et al. 2009). | Yes | Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated. | The Project is within the range of the snuffbox, a state endangered and federally endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species. |
Ebonyshell | *Fusconaia ebena* | E | Yes | No | This species inhabits large rivers and prefers swift water and stable sandy or gravelly shoals (Cummings and Mayer, 1992). Parmalee and Bogan (1998) list it as occurring in current at depths of 10 to 15 feet or more. A course sand and gravel substrate provides the most suitable habitat, although this species | No | No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to | The Project is within the range of the ebonyshell, a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species. |
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</thead>
<tbody>
<tr>
<td>Long-solid</td>
<td>Fusconaia maculata</td>
<td>E Yes No</td>
<td>This species thrives in rivers composed of sand, silt, and mud (NatureServe 2019).</td>
<td>No</td>
<td>this species are anticipated.</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the long-solid, a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
<td></td>
</tr>
<tr>
<td>Pocketbook</td>
<td>Lampsis ovata</td>
<td>E Yes No</td>
<td>This species is very generalized in habitat preference, adapting well to both impoundment situations as well as free-flowing, shallow rivers. It may be found in big rivers (reservoirs) at depths of 15 to 20 feet and in small streams in less than two feet of water. Although usually found in moderate to strong current, it can survive in standing water. The most suitable substrate consists of a mixture of gravel and coarse sand mixed with some silt or mud (Parmalee and Bogan 1998; NatureServe 2019).</td>
<td>Yes</td>
<td>Potentially suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the sharp-ridged pocketbook, a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washboard</td>
<td>Megalonaias nervosa</td>
<td>E Yes Yes</td>
<td>This species is typically a large river species, living in the main channel and in some of the overbank areas of reservoirs, but in some instances, it may also become established in medium-sized and even small rivers. It is found in areas with a slow current with muddy to coarse gravel substrates, often in water up to 50 feet in depth (Parmalee and Bogan 1998; NatureServe 2019).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the washboard, a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
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</tr>
<tr>
<td>Clubshell</td>
<td><em>Pleurobema clava</em></td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>The clubshell is found in small to medium rivers, but occasionally is also found in large rivers, especially those having large shoal areas. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle and cannot tolerate mud or slackwater conditions (USFWS 1994). Badra and Goforth (2001) found the clubshell in gravel/sand substrate, runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams (NatureServe 2019).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the clubshell, a state endangered and federally endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Ohio Pigtoe</td>
<td><em>Pleurobema cordatum</em></td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>This species primarily inhabits large rivers but may be found in medium-sized rivers. It is also tolerant of some reservoir environments. In lotic situations it is found in or immediately above riffles in heterogenous assemblages of gravel, cobble, and boulder. It also occurs in some habitats with greater depth and substrates of mud/sand/gravel but seems to require flowing water. In reservoirs, it tends to occur in the sublotic areas of dam tailwaters and may be in some overbank beds (Gordon and Layzer 1989; NatureServe 2019).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the Ohio pigtoe, a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Rabbitsfoot</td>
<td><em>Quadrula cylindrica cylindrica</em></td>
<td>E</td>
<td>Yes</td>
<td>Yes</td>
<td>According to Gordon and Layzer (1989) the typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams it inhabits bars or gravel and cobble close to the fast current. Found in medium to large rivers in sand and gravel shoals (NatureServe 2019).</td>
<td>Yes</td>
<td>Potentially suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the rabbitsfoot, a state endangered and federal candidate mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Pyramid Pigtoe</td>
<td><em>Pleurobema rubrum</em></td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>This mussel is a riffle and shoal species that prefers the swift currents of coarse gravel, sand, and mud substrates within medium to large rivers (NatureServe 2019).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the pyramid pigtoe, a state endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>State Listing1</td>
<td>Known to Occur in Pickaway County?2</td>
<td>Known Within One Mile of Project Area?3</td>
<td>Habitat Preference</td>
<td>Potential Habitat Observed in Project Area?4</td>
<td>Impact Assessment</td>
<td>ODNR Comments/Recommendations</td>
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<tr>
<td>Rayed Bean</td>
<td>Villosa fabalis</td>
<td>E</td>
<td>Yes</td>
<td>Yes</td>
<td>Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increase substrate stability (NatureServe 2018; Parmalee and Bogan 1998). Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (Parmalee and Bogan 1998).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the rayed bean, a state endangered and federally endangered mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Black Sandshell</td>
<td>Ligumia recta</td>
<td>T</td>
<td>Yes</td>
<td>Yes</td>
<td>It is typically found in medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more (Parmalee and Bogan 1998; NatureServe 2019).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the black sandshell, a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Threehorn Wartyback</td>
<td>Obliquaria reflexa</td>
<td>T</td>
<td>Yes</td>
<td>Yes</td>
<td>This species is typical of the large rivers where there is moderately strong current and a stable substrate composed of gravel, sand, and mud. Although found at depths of up to 20 feet, it seems to do well at a depth of no more than four to six feet often in shallow, sand- and mud-bottom river embayments with little or no current. It also occurs in many reservoirs (Parmalee and Bogan 1998; NatureServe 2019).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the threehorn wartyback, a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Fawnsfoot</td>
<td>Truncilla donaciformis</td>
<td>T</td>
<td>Yes</td>
<td>Yes</td>
<td>This species occurs in both large and medium-sized rivers at normal depths varying from less than three feet up to 15 to 18 feet in big rivers such as the Tennessee. A substrate of either sand or mud is suitable and although it is typically found in moderate current, it can adapt to a lake or embayment environment lacking current (Parmalee and Bogan 1998; NatureServe 2019).</td>
<td>No</td>
<td>No suitable habitat was observed within the Project area. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the fawnsfoot, a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>State Listing</td>
<td>Known to Occur in Pickaway County?</td>
<td>Known Within One Mile of Project Area?</td>
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<tr>
<td>Pondhorn</td>
<td>Uniomerus tetralasmus</td>
<td>T</td>
<td>Yes</td>
<td>No</td>
<td>This species typically inhabits the quiet or slow-moving, shallow waters of sloughs, borrow pits, ponds, ditches, and meandering streams. It is tolerant of poor water conditions and can be found well buried in a substrate of fine silt and/or mud. It has been known to survive for extended periods of time when a pond or slough has temporarily dried up by burying itself deep into the substrate (Cordeiro, 1999; Parmalee and Bogan 1998; NatureServe 2019).</td>
<td>Yes</td>
<td>Potentially suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the pondhorn, a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Elktoe</td>
<td>Alasmidonta marginata</td>
<td>SC</td>
<td>Yes</td>
<td>Yes</td>
<td>Although it occurs in large to medium sized streams, it is more typical of smaller streams (Buchanan 1980; Goodrich and Van Der Schalie 1944; Oesch 1984; Parmalee 1967; Wilson and Clark 1914). Ortman (1919) described it as a riffle species that is found in swift current in firmly packed fine to coarse gravel. Parmalee (1967) reported the preferred habitat to be small streams with good current and sand or gravel bottoms at depths of several inches to two feet. Buchanan (1980) found it to be common in gravel and cobble substrate in two to 18 inches of water. Neel and Allen (1964) found it to be more abundant in the mainstream Cumberland River than in small streams. Parmalee and Bogan (1998) state that it reaches its greatest abundance in small, shallow rivers with a moderately fast current in a mixture of fine gravel and sand (NatureServe 2019).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>According to the ODNR Natural Heritage Data Search, this species is known to occur within a 1-mile radius of the Project. No further comments were received from the ODNR regarding this species.</td>
</tr>
<tr>
<td>Wavy-rayed Lampmussel</td>
<td>Lampsilis fasciola</td>
<td>SC</td>
<td>Yes</td>
<td>Yes</td>
<td>This species is mainly found in and around riffle areas of clear, hydrologically stable small to medium-sized streams and rivers of various sizes of depths of up to 1 m with clean substrates of gravel and sand stabilized with cobble and boulders (Cudmore et al. 2004).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>According to the ODNR Natural Heritage Data Search, this species is known to occur within a 1-mile radius of the Project. No further comments were received from the ODNR regarding this species.</td>
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<td>Common Name</td>
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<tr>
<td>Kidneyshell</td>
<td>Ptychobranchus fasciolaris</td>
<td>SC</td>
<td>Yes</td>
<td>Yes</td>
<td>This species is most commonly found in small (6-16 m wide) to medium-sized (15-20 m wide) rivers and is rarely found in large rivers (&gt;30-50 m wide). It also occurs in Lake Erie, Lake St. Clair, and Lake Chautauqua, where it attains a much smaller size. It has also been found in shallow (&lt;1 m) sections of impoundments that still have some moving water. It is usually absent from headwater creeks less than 3 m wide. The species is tolerant of a variety of habitat conditions, although rivers with moderately strong current and a substrate of coarse gravel and sand provide the most suitable one (NatureServe 2019).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>According to the ODNR Natural Heritage Data Search, this species is known to occur within a 1-mile radius of the Project. No further comments were received from the ODNR regarding this species.</td>
</tr>
<tr>
<td>Deertoe</td>
<td>Truncilla truncata</td>
<td>SC</td>
<td>Yes</td>
<td>Yes</td>
<td>This species is a generalist in terms of substrate preference, usually occurring in fine gravel mixed with sand and mud. It is also considered a generalist in terms of the size of rivers it inhabits. It is more common in medium-sized rivers but may become numerous in large rivers, where it can live at depths of 12 to 18 feet. It will also establish viable populations in lakes lacking current (Parmalee and Bogan 1998).</td>
<td>Yes</td>
<td>Potentially suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>According to the ODNR Natural Heritage Data Search, this species is known to occur within a 1-mile radius of the Project. No further comments were received from the ODNR regarding this species.</td>
</tr>
<tr>
<td>Upland Sandpiper</td>
<td>Bartramia longicauda</td>
<td>E</td>
<td>No</td>
<td>No</td>
<td>Upland sandpipers breed in grasslands, pastures, and unkept agricultural land with a mosaic of old fields and crop lands, and sometimes the grassy expanses of airports (ODNR 2020b). Large areas of grassland/lightly-moderately grazed pasture habitats (≥ 20 acres) are required to be suitable as upland sandpiper nesting habitat (McCormac and Kennedy 2004; NatureServe 2019; USFWS 2001).</td>
<td>No</td>
<td>No suitable nesting habitat (large areas of grasslands/lightly-moderately grazed pasture habitats ≥ 20 acres (McCormac and Kennedy 2004) is present within the Project area. Additionally, the upland sandpiper is not known to occur in Pickaway County (ODNR 2020a). Therefore, no impacts to this species are anticipated.</td>
<td>The Project is within the range of the upland sandpiper, a state endangered bird. If suitable habitat for this species will be impacted, construction should be avoided in this habitat during the species’ nesting period of April 15 to July 31. If this type of habitat will not be impacted, this Project is not likely to impact this species.</td>
</tr>
<tr>
<td>Lark Sparrow</td>
<td>Chondestes grammacus</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>This sparrow nests in grassland habitats with scattered shrub layers, disturbed open areas, as well as patches of bare soil. In the Oak Openings area west of Toledo, lark sparrows occupy open grass and</td>
<td>Yes</td>
<td>Limited amounts of potentially suitable nesting habitat was observed within the Project area in the form of</td>
<td>No comments received.</td>
</tr>
</tbody>
</table>
Results
September 4, 2020

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>State Listing</th>
<th>Known to Occur in Pickaway County?</th>
<th>Known Within One Mile of Project Area?</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Northern Harrier</td>
<td>Circus hudsonius</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>shrubby fields along sandy beach ridges (ODNR 2020b).</td>
<td>old field habitat and recently cleared areas. However, vegetation clearing is planned to take place in February of 2021, outside of the lark sparrow’s nesting season. Therefore, no impacts to this species are anticipated.</td>
<td>No</td>
<td>No comments received.</td>
</tr>
<tr>
<td>Loggerhead Shrike</td>
<td>Lanius ludovicianus</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>Breeding habitats include, open country with scattered trees and shrubs, savanna, desert scrub and occasionally, open woodland; often perches on poles, wires or fenceposts. Prefers to nest in shrubs or small trees. The average territory sizes in studies conducted in Missouri and New York is approximately 11 acres and 18.5 acres, respectively (NatureServe 2019).</td>
<td>No</td>
<td>A very limited amount of old field habitat with scattered trees and shrubs is present within the Project area. However, loggerhead shrikes require large areas of old field, grassland, and/or pastures with scattered trees and shrubs for nesting/breeding territories. Therefore, no impacts to this species are anticipated.</td>
<td>No comments received.</td>
</tr>
<tr>
<td>Sandhill Crane</td>
<td>Grus canadensis</td>
<td>T</td>
<td>Yes</td>
<td>No</td>
<td>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 (ODNR 2020b).</td>
<td>No</td>
<td>No suitable breeding/nesting habitat is present within the Project area. Therefore, no impacts are anticipated.</td>
<td>No comments received.</td>
</tr>
<tr>
<td>Least Bittern</td>
<td>Ixobrychus exilis</td>
<td>T</td>
<td>Yes</td>
<td>No</td>
<td>Of the regularly breeding Ohio marsh birds, this is one of the most secretive. They hide in dense emergent marshes, particularly where there are thick cattail stands (ODNR 2020b).</td>
<td>No</td>
<td>No suitable breeding/nesting habitat is present within the Project area. Therefore, no impacts are anticipated.</td>
<td>No comments received.</td>
</tr>
</tbody>
</table>
### ECOLOGICAL RESOURCES INVENTORY REPORT, HARRISON STATION EXPANSION PROJECT, PICKAWAY COUNTY, OHIO

#### Results

**September 4, 2020**

<table>
<thead>
<tr>
<th>Common Name</th>
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<th>Known to Occur in Pickaway County?</th>
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<tbody>
<tr>
<td>Barn Owl</td>
<td>Tyto alba</td>
<td>T</td>
<td>Yes</td>
<td>No</td>
<td>Barn owls depend on open grassland over which to hunt. However, because of the way much of Ohio is farmed today, there is little of this kind of habitat around. When there are few grassy meadows, there are few meadow voles. And when there are few meadow voles, there are few barn owls. When barn owls are not haunting an old building, barn, silo or chimney, they may roost and nest in a hollow tree. They will also use nesting boxes placed in barns just for them to use (ODNR 2020b).</td>
<td>Yes</td>
<td>Very limited potentially suitable habitat is present within the riparian forested areas along Big Walnut Creek. Though the barn owl prefers manmade structures such as barns, silos and chimneys to roost in, they can be found in hollows of trees. However, due to the limited size of Project’s limits of disturbance and no impacts to the riparian forested habitat areas along Big Walnut Creek are anticipated. The Project may affect but is not likely to affect this species.</td>
<td>No comments received.</td>
</tr>
<tr>
<td>Indiana Bat</td>
<td>Myotis sodalis</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>The Indiana bat is likely distributed over the entire state of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas. Dead trees are preferred as maternity roosts. However, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007a; USFWS 2019). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).</td>
<td>Yes</td>
<td>No potential hibernacula or roost trees were observed within the Project area. However, suitable summer foraging habitat was observed. Any necessary tree clearing is planned to take place between October 1 and March 31. Therefore, no impacts to this species are anticipated.</td>
<td>If suitable habitat occurs within the Project area, ODNR recommends trees be conserved. If suitable habitat occurs within the Project area and trees must be cut, ODNR recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, ODNR recommends a net survey be conducted between June 1 and August 15, prior to any cutting.</td>
</tr>
<tr>
<td>Common Name</td>
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</tr>
<tr>
<td>Northern Long-eared Bat</td>
<td>Myotis septentrionalis</td>
<td>T</td>
<td>Yes</td>
<td>No</td>
<td>The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016a). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).</td>
<td>Yes</td>
<td>No potential hibernacula or roost trees were observed within the Project area. However, suitable summer foraging habitat was observed. Any necessary tree clearing is planned to take place between October 1 and March 31. Therefore, no impacts to this species are anticipated.</td>
<td>No comments received.</td>
</tr>
<tr>
<td>Little Brown Bat</td>
<td>Myotis lucifugus</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>The little brown bat is found throughout Ohio. This species seems to prefer to forage over water but also forages among trees in rather open areas (Harvey et al. 1999). During summer, it typically inhabits buildings, attics, church belfries, barns and outbuildings, and occasionally more natural habitats such as sloughing bark of a dead tree. During summer, two types of roosts are utilized: day roosts and night roosts. Day roosts are the maternity colony roost, while little brown bats often roost in other areas where they rest and congregate to digest their food in between foraging bouts. In Ohio, this species typically utilizes caves and mines as hibernacula, although at least one hibernaculum was found to be located in an attic of an old building (Brack et al. 2010).</td>
<td>Yes</td>
<td>No potential hibernacula, roost trees, or other summer roosting habitats were observed within the Project area. However, potentially suitable summer foraging habitat was observed (early successional deciduous forest; pasture; streamside habitats). AEP intends to avoid areas with potential summer roost habitat to the extent possible and intends to clear forested habitat between October 1 and March 31, as necessary. AEP will determine if any summer tree clearing is necessary in areas containing suitable roost habitat and will proceed accordingly.</td>
<td>No comments received.</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
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<td>Known to Occur in Pickaway County?</td>
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<tr>
<td>Tri-colored Bat</td>
<td>Perimyotis subflavus</td>
<td>E</td>
<td>Yes</td>
<td>No</td>
<td>The tricolored bat is found throughout Ohio. This species has been found to forage above and within a variety of habitats, including woodlands, agricultural fields, grassy areas, and over streamside vegetation (Sparks et al. 2011). Maternity colonies have also often been found within clusters of dead leaves, hanging in trees. Maternity colonies have been found in or on buildings. Little is known of male tri-colored bats in summer, but it is thought that they are probably solitary and spend their days in similar situations, as well as crevices, caves and mines (Brack et al. 2010). In Ohio, this species typically utilizes caves and mines as hibernacula, utilizing a variety of situations, including very cold areas near cave entrances to deeper passages that seem to be too warm for other species of bats (Brack et al. 2010).</td>
<td>Yes</td>
<td>No potential roost trees or other roosting habitats were observed within the Project area. However, potentially suitable summer foraging habitat was observed (early successional deciduous forest; pasture; streamside habitats). AEP intends to avoid areas with potential summer roost habitat to the extent possible and intends to clear forested habitat between October 1 and March 31, as necessary. AEP will determine if any summer tree clearing is necessary in areas containing suitable roost habitat and will proceed accordingly.</td>
<td>No comments received.</td>
</tr>
</tbody>
</table>

1 E=Endangered; T=Threatened; SC=Species of Concern
2 According to Ohio Department of Natural Resources, State Listed Wildlife Species by County (ODNR Division of Wildlife 2020a).
3 According to Ohio Natural Heritage Program (Appendix B).
### Table 4. Summary of Potential Federally Listed Species within the Harrison Station Expansion Project Area, Pickaway County, Ohio

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Listing¹</th>
<th>Known to Occur in Pickaway County?²</th>
<th>Habitat Preference</th>
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<tbody>
<tr>
<td><strong>Mammals</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indiana Bat</td>
<td><em>Myotis sodalis</em></td>
<td>E</td>
<td>Yes</td>
<td></td>
<td></td>
<td>Yes</td>
<td>All Projects in the state of Ohio lie within the range of the Indiana bat. The USFWS recommends that trees 3 inches dbh or greater be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with the USFWS office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and tree removal is unavoidable, USFWS recommends that removal of any trees 3 inches dbh or greater only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats are insignificant or discountable. If implementation of seasonal tree clearing recommendation is not possible, summer surveys may be conducted between June 1 and August 15.</td>
</tr>
</tbody>
</table>
| Northern Long-eared Bat | *Myotis septentrionalis* | T                | Yes                                 |                    |                                             | Yes               | All Projects in the state of Ohio lie within the range of the Indiana bat. The USFWS recommends that trees 3 inches dbh or greater be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with the USFWS office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and tree removal is unavoidable, USFWS recommends that removal of any trees 3 inches dbh or greater only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats are insignificant or discountable. If
## Fish

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Listing</th>
<th>Known to Occur in Pickaway County?</th>
<th>Habitat Preference</th>
<th>Potential Habitat Observed in Project Area?</th>
<th>Impact Assessment</th>
<th>USFWS Comments/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scioto Madtom</td>
<td>Noturus trautmani</td>
<td>E</td>
<td>Yes</td>
<td>Only 18 individuals of the Scioto madtom have ever been found. Of those, 14 were found in the fall of 1957 and none have been seen since. No other fish has been searched for more persistently by researchers in Ohio than this species. This fish has never been found outside of Ohio and all 18 individuals were found in a small area of Big Darby Creek. They were found in the tail end of riffles over a sand and gravel substrate. Since all the individuals were found in the fall it has been speculated that they may spend the remainder of the year further upstream. They likely eat various aquatic invertebrates like most other madtom species (ODNR 2020b).</td>
<td>Yes</td>
<td>Potentially suitable habitat was observed within the Project area (Big Walnut Creek). However, this species has only been found in Big Darby Creek within Ohio and has not been recorded in Big Darby Creek since 1957. Additionally, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.</td>
</tr>
</tbody>
</table>

## Mussels

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Listing</th>
<th>Known to Occur in Pickaway County?</th>
<th>Habitat Preference</th>
<th>Potential Habitat Observed in Project Area?</th>
<th>Impact Assessment</th>
<th>USFWS Comments/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rayed Bean</td>
<td>Villosa fabalis</td>
<td>E</td>
<td>Yes</td>
<td>Habitat includes gravel or sandy substrate, especially in areas of thick roots of aquatic plants, increase substrate stability (Parmalee and Bogan 1998). Rayed bean can be associated with shoal or riffle areas, and in shallow, wave-washed areas of glacial lakes. It is generally found in smaller, headwater creeks, but sometimes in larger rivers and open-water bodies. It can occur in shallow riffles or in lakes with water depths up to four feet. It has been found in riffles, generally in vegetation, and deeply buried in sand and gravel bound together by roots (Parmalee and Bogan 1998).</td>
<td>Yes</td>
<td>Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.</td>
<td>Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.</td>
</tr>
<tr>
<td>Common Name</td>
<td>Scientific Name</td>
<td>Federal Listing</td>
<td>Known to Occur in Pickaway County?</td>
<td>Habitat Preference</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Northern Riffleshell</td>
<td>Epioblasma torulosa rangiana</td>
<td>E</td>
<td>Yes</td>
<td>Preferred habitat appears to require swiftly moving water. The high oxygen concentrations in swift streams may be necessary for survival. It is a species of riffle areas of smaller streams, and as such has fared better than larger river species, which have been heavily impacted by dredging and impoundment. (NatureServe 2019).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Snuffbox</td>
<td>Epioblasma triquetra</td>
<td>E</td>
<td>Yes</td>
<td>Occurs in medium-sized streams to large rivers, generally on mud, rocky, gravel, or sand substrates in flowing water. This species is often deeply buried in substrate and overlooked by collectors (NatureServe 2019). It is found in a wide range of particle sized substrates, However, swift shallow riffles with sand and gravel are where it is typically found (Parmalee and Bogam 1998; Walters et al. 2009).</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Clubshell</td>
<td>Pleurobema clava</td>
<td>E</td>
<td>Yes</td>
<td>The clubshell is found in small to medium rivers, but occasionally found in large rivers, especially those having large shoal areas. It is generally found in clean, coarse sand and gravel in runs, often just downstream of a riffle and cannot tolerate mud or slackwater conditions (USFWS 1994). Badra and Goforth (2001) found the clubshell in gravel/sand substrate, in runs having laminar flow (0.06-0.25 m/sec) within small to medium sized streams.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rabbitsfoot</td>
<td>Quadrula cylindrica</td>
<td>T</td>
<td>Yes</td>
<td>According to Gordon and Layzer (1989) the typical habitat for this species is small to medium rivers with moderate to swift currents, and in smaller streams it inhabits bars or gravel and cobble close to the fast current. Found in medium to large rivers in sand and gravel shoals (NatureServe 2019).</td>
<td></td>
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</tbody>
</table>

**Impact Assessment**

- Suitable habitat was observed within the Project area (Big Walnut Creek). However, no in-water work is proposed by AEP. Therefore, no impacts to this species are anticipated.

- Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.
## Results

**September 4, 2020**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Listing¹</th>
<th>Known to Occur in Pickaway County?²</th>
<th>Habitat Preference</th>
<th>Potential Habitat Observed in Project Area?</th>
<th>Impact Assessment</th>
<th>USFWS Comments/Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Running Buffalo Clover</td>
<td><em>Trifolium stoloniferum</em></td>
<td>E</td>
<td>Yes</td>
<td>Running buffalo clover habitat most commonly consists of mesic woodland in partial to filtered sunlight, where there is a pattern of moderate periodic disturbance for a prolonged period, such as mowing, trampling, or grazing. It has also been found in a variety of disturbed woodland habitats, floodplains, streambanks, grazed woodlots, cemeteries, lawns, old logging roads, and jeep trails (USFWS 2007b; USFWS 2016b).</td>
<td>Yes</td>
<td>Potentially suitable habitat is present in forested riparian areas adjacent to Big Walnut Creek where the banks aren’t steeply sloped. However, no populations are known to occur within one mile of the Project area and none of the potential running buffalo clover habitat will be impacted during the substation expansion construction activities. Therefore, no adverse effects to this species are anticipated.</td>
<td>Due to the Project type, size, and location, USFWS does not anticipate adverse effects to this species.</td>
</tr>
</tbody>
</table>

¹ E=Endangered; T=Threatened

² According to USFWS (2018).
Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species within the Project area on October 11, 2019. During the field surveys, no wetlands or open waters were observed within the Project area. One perennial stream (Big Walnut Creek) totaling approximately 2,531 linear feet in length was delineated within the Project area. See Table 2 for more information regarding the stream identified within the Project area. The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project area at the time of the field work. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment.

Table 3 above provides summary information for all state-listed threatened and endangered species known to occur within Pickaway County, as well as state species of concern with known occurrences within a one-mile radius of the Project area. An ODNR Ohio Natural Heritage Program data request and environmental review request letter was sent to the ODNR Office of Real Estate on September 24, 2019.

The ODNR-Office of Real Estate response letter dated November 7, 2019 (Appendix B), states that the Project area is within the range of the Indiana bat. If suitable habitat occurs within the Project area, the ODNR recommends trees be conserved. If suitable habitat occurs within the Project area and trees must be cut, the ODNR recommends cutting occur between October 1 and March 31. If no tree removal is proposed, this Project is not likely to impact this species. Any tree clearing that is necessary for the Project is planned to take place between October 1 and March 31 during the allotted winter tree clearing window. Therefore, no impacts to this species are anticipated.

The ODNR-Office of Real Estate also states that the Project area is within the range of 19 mussel species and 10 fish species (Appendix B). However, the ODNR states that due to the location, and that there is no in-water work proposed in a perennial stream, this Project is not likely to impact fish or mussel species. Additionally, the Project area is within range of the upland sandpiper a state endangered species. However, the ODNR states that if no suitable nesting habitat is present within the Project area and/or if construction is avoided in suitable nesting habitat for this species during its nesting period (April 1 – July 31), the Project is not likely to impact this species. Field observations determined there is no suitable nesting habitat for the upland sandpiper present within the Project area. Therefore, the Project is not likely to impact this species.

Furthermore, the ODNR lists the following species as occurring within a one-mile radius of the Project area: elktoe – state and federal species of concern; elephant-ear – state endangered; snuffbox - state and federally endangered; Wavy-rayed – state species of concern; black sandshell – state threatened; washboard – state endangered; threehorn wartyback – state threatened; kidneyshell – state species of concern, rabbitsfoot – state endangered and federally threatened, fawnsfoot – state threatened; deertoe – state species of concern; rayed-bean – state
Conclusions and Recommendations
September 4, 2020

and federally endangered; Tippecanoe darter – state threatened; and shorthose gar – state endangered. Field observations determined there is potentially suitable habitat for one of the fish species (Tippecanoe darter) and several of the listed mussel species within the Project area, within Stream 1 (Big Walnut Creek). However, because no in-water work is proposed by AEP, no impacts to any of the state-listed aquatic species are anticipated.

Field observations also determined that a small amount of potentially suitable nesting habitat for the lark sparrow, a state-listed endangered species, was present within the Project area. These consisted of old field habitat and recently cleared areas. Vegetation clearing associated with substation expansion construction activities will be limited and are anticipated to take place in February of 2021. Therefore, no impacts to the lark sparrow are anticipated. Additionally, limited amounts of potentially suitable nesting habitat for the barn owl, a state-listed threatened bird species, was present within the riparian forested habitat areas along Big Walnut Creek within the Project area. However, the proposed limits of disturbance is not anticipated to impact the riparian forested habitat along Big Walnut Creek. Therefore, the Project is not anticipated to impact the barn owl.

Along with the ODNR request for review letter, a technical assistance request letter was submitted to the USFWS on September 24, 2019. The USFWS response letter dated October 7, 2019, states that there are no federal wilderness areas, wildlife refuges, or designated critical habitat within the vicinity of the Project area (Appendix B). The USFWS fully recommends that impacts to wetlands and other water resources be avoided or minimized where possible, and that best management practices be utilized to minimize erosion and sedimentation.

According to the USFWS response letter (Appendix B), all Projects in the State of Ohio lie within the range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. In Ohio presence of these species are assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. The Project area includes suitable foraging habitat for the Indiana bat and northern long-eared bat. However, no suitable winter hibernacula or roost trees for these species were observed in the Project area. The USFWS response letter (Appendix B) stated that should the Project site contain trees ≥3 inches dbh, USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, USFWS recommends that removal of trees ≥3 inches dbh only occur between October 1 and March 31 to avoid adverse effects to this species. If implementation of seasonal tree clearing is not possible, the USFWS recommends summer presence/absence surveys be conducted between June 1 and August 15.

Any tree clearing that is necessary for the Project is planned to take place between October 1 and March 31. Therefore, no impacts to the Indiana bat or northern long-eared bat are anticipated.

The USFWS does not anticipate adverse effects to any other federally endangered, threatened, proposed or candidate species due to the Project type, size, and location (Appendix B).
5.0 REFERENCES


References
September 4, 2020


Ohio Environmental Protection Agency (OEPA). 2006. Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI).


References
September 4, 2020


Watters, G.T. 1995. A field guide to the freshwater mussels of Ohio. revised 3rd edition. Ohio Department of Natural Resources, Division of Wildlife, Columbus, Ohio. 122 pp


Appendix A  FIGURES

A.1 FIGURE 1 – PROJECT LOCATION MAP
A.2 FIGURE 2 – WETLAND AND WATERBODY DELINEATION MAP
Figure No.

Wetland and Waterbody
Definition Map

Project Location

Pickaway County, Ohio

Client/Project

AEP Ohio Transmission Company, Inc.
Harrison Station Expansion Project

Figure No.

Title

Notes

Legend

Project Area
Existing Culvert
Wetland Determination Sample Point
Photo Location
Upland Drainage Feature
Approximate Upland Drainage Feature
Field Delineated Waterway
Approximate Waterway
Field Delineated Waterway Area
FEMA Flood Hazard Area
100-year Flood Zone
100-year Roadway

No Features Within Data Frame

Notes

1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources Include: Stantec, AEP, USGS, FEMA, NADS, OGRIP
3. Orthophotography: 2017 NAIP
4. No Features Within Data Frame

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for ensuring the accuracy and completeness of the data. The recipient releases Stantec, its officers, any persons, its subsidiaries and agents, from any and all claims relating to any use of the content or provision of the data.

Prepared by SF on 2019-10-21
Technical Review by DJG on 2019-11-05
Independent Review by KB on 2019-11-05
A.3 FIGURE 3 – HABITAT ASSESSMENT MAP
Appendix B AGENCY CORRESPONDENCE
November 7, 2019

Dan Godec
Stantec
1500 Lake Shore Drive Suite 100
Columbus OH 43204-3800

Re: 19-837; Harrison Road Station Expansion Project

Project: The Project involves the expansion of the existing Harrison Road 138 kV substation (Harrison Road Station) on the approximate 39-acre substation property.

Location: The proposed project is located in the City of Lockbourne, Pickaway 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:

Elktoe (Alasmidonta marginata), SC, FSC
Elephant-ear (Elliptio crassidens), E
Snuffbox (Epioblasma triquetra), E, FE
Tippecanoe darter (Etheostoma tippecanoe), T
Wavy-rayed lampmussel (Lampsilis fasciola), SC
Shortnose gar (Lepisosteus platostomus), E
Black sandshell (Ligumia recta), T
Washboard (Megalonaias nervosa), E
Threehorn wartyback (Obliquaria reflexa), T
Kidneyshell (Ptychobranchus fasciolaris), SC
Rabbitsfoot (Theliderma cylindrica), E, FT
Fawnsfoot (Truncilla donaciformis), T
Deertoe (Truncilla truncata), SC
Rayed bean (Villosa fabalis), E, FE
The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity.

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

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

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

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

The project is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (*Carya ovata*), shellbark hickory (*Carya laciniosa*), bitternut hickory (*Carya cordiformis*), black ash (*Fraxinus nigra*), green ash (*Fraxinus pennsylvanica*), white ash (*Fraxinus americana*), shingle oak (*Quercus imbricaria*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), American elm (*Ulmus americana*), eastern cottonwood (*Populus deltoides*), silver maple (*Acer saccharinum*), sassafras (*Sassafras albidum*), northern red oak (*Quercus rubra*), slippery elm (*Ulmus rubra*), and white oak (*Quercus alba*). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If suitable trees must be cut during the summer months, the DOW recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate either nine net nights per square 0.5 kilometer of project area, or four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the purple cat’s paw (*Epioblasma o. obliquata*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triqueta*), a state endangered and federally endangered mussel, the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the northern riffleshell (*Epioblasma torulosa rangiana*), a state endangered and federally endangered mussel, the rayed bean (*Villosa fabalis*), a state endangered and federally endangered mussel, the rabbitsfoot (*Quadrula cylindrica*), a state endangered and federal candidate mussel, the washboard (*Meganaias nervosa*), a state endangered mussel, the butterfly (*Ellipsaria lineolata*), a state endangered mussel, the long-solid (*Fusconaia maculata maculata*), a state endangered mussel, the ebonyshell (*Fusconaia ebenus*), a state endangered mussel, the sharp-ridged pocketbook (*Lampsilis ovata*), a state endangered mussel, the pyramid pigtoe (*Pleurobema rubrum*), a state endangered mussel,
the Ohio pigtoe (*Pleurobema cordatum*), a state endangered mussel, the elephant-ear (*Elliptio crassidens*), a state endangered mussel, the threehorn wartyback (*Obliquaria reflexa*), a state threatened mussel, the fawnsfoot (*Truncilla donaciformis*), a state threatened mussel, the pondhorn (*Uniomerus tetralasmus*), a state threatened mussel, and the black sandshell (*Ligumia recta*), a state threatened mussel. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

The project is within the range of the Scioto madtom (*Noturus trautmani*), a state endangered and federally endangered fish, the spotted darter (*Etheostoma maculatum*), a state endangered fish and a federal species of concern, the northern brook lamprey (*Ichthyomyzon fossor*), a state endangered fish, the northern madtom (*Noturus stigmosus*), a state endangered fish, the goldeye (*Hiodon alosoides*), a state endangered fish, the shortnose gar (*Lepisosteus platostomus*), a state endangered fish, the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, the paddlefish (*Polyodon spathula*), a state threatened fish, the bigeye shiner (*Notropis boops*), a state threatened fish, and the lake chubsucker (*Erimyzon sucetta*), a state threatened fish. Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these species.

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

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

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

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


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

Mike Pettegrew
Environmental Services Administrator (Acting)
Dear Mr. Godec,

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

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

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered Indiana bat (Myotis sodalis) and the federally threatened northern long-eared bat (Myotis septentrionalis). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.
Should the proposed site contain trees =3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees =3 inches dbh cannot be avoided, we recommend that removal of any trees =3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being 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, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this 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.

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

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

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

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

Sincerely,
Patrice M. Ashfield  
Field Office Supervisor  

cc:  Nathan Reardon, ODNR-DOW  
     Kate Parsons, ODNR-DOW
Appendix C  REPRESENTATIVE PHOTOGRAPHS

C.1  WETLAND AND WATERBODY PHOTOGRAPHS
Photo Location 1. View of Stream 1 (Big Walnut Creek). Photograph taken facing upstream/southeast.

Photo Location 1. View of Stream 1 (Big Walnut Creek). Photograph taken facing downstream/northwest.
Photo Location 1. View of substrates of Stream 1 (Big Walnut Creek).

Photo Location 2. View of Stream 1 (Big Walnut Creek). Photograph taken facing upstream/southeast.
AEP Ohio Transmission Company, Inc.
Harrison Station Expansion Project
Pickaway County, Ohio

Photo Location 2. View of Stream 1 (Big Walnut Creek). Photograph taken facing downstream/northwest.

Photo Location 2. View of substrates of Stream 1 (Big Walnut Creek).
Photo Location 3. View of recently cleared area at wetland determination sample point (SP 1). Photograph taken facing north.

Photo Location 3. View of recently cleared area at wetland determination sample point (SP 1). Photograph taken facing east.
Photo Location 3. View of recently cleared area at wetland determination sample point (SP 1). Photograph taken facing south.

Photo Location 3. View of recently cleared area at wetland determination sample point (SP 1). Photograph taken facing west.
C.2 HABITAT PHOTOGRAPHS
Photo Location 1. Representative view of new field habitat and existing gravel road. Photograph taken facing east.

Photo Location 2. Representative view of old field habitat. Photograph taken facing west.
AEP Ohio Transmission Company, Inc.
Harrison Station Expansion Project
Pickaway County, Ohio

Photo Location 2. Representative view of mixed early successional/second growth deciduous forest. Photograph taken facing east.

Photo Location 3. Representative view of agricultural land. Photograph taken facing east.
Photo Location 4. Representative view of recently cleared areas in the Project area. Photograph taken facing southeast.

Photo Location 5. Representative view of second growth riparian forest. Photograph taken facing southeast.
Photo Location 6. Representative view of industrial land. Photograph taken facing east.

Photo Location 6. Representative view of old field habitat, industrial land, and agricultural land. Photograph taken facing south.
Appendix D  DATA FORMS

D.1  WETLAND DETERMINATION DATA FORM
**SUMMARY OF FINDINGS**

- Are climatic/hydrologic conditions on the site typical for this time of year? (No)
- Are Vegetation, Soil, or Hydrology significantly disturbed? (Yes)
- Are Vegetation, Soil, or Hydrology naturally problematic? (No)
- Are normal circumstances present? (Yes)
- Are hydrophytic vegetation and wetland hydrology present? (Yes)
- Are hydric soils present? (Yes)
- Are this sampling point within a wetland? (Yes)

**HYDROLOGY**

### Hydrophytic Vegetation Present?
- Yes
- No

### Hydric Soils Present?
- Yes
- No

### Is This Sampling Point Within A Wetland?
- Yes
- No

**Wetland Hydrology Present?**
- Yes
- No

**Field Observations:**
- Surface Water Present? (Yes)
- Water Table Present? (Yes)
- Saturation Present? (Yes)

**SOILS**

**Map Unit Name:** Eldean loam, 2-6% slopes

**Profile Description**

<table>
<thead>
<tr>
<th>Top Depth</th>
<th>Bottom Depth</th>
<th>Color (Moist)</th>
<th>Horizon</th>
<th>%</th>
<th>Color (Moist)</th>
<th>%</th>
<th>Type</th>
<th>Location</th>
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</table>

**Redox Features**

- NRCS Hydric Soil Field Indicators
- Indicators for Problematic Soils

**Hydric Soil Present?**
- Yes
- No

**Remarks:** Recently cleared area near PSS NWI wetland

---

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

**Tree Stratum (Plot size: 30 ft radius)**

<table>
<thead>
<tr>
<th>Species Name</th>
<th>% Cover</th>
<th>Dominant</th>
<th>Int Status</th>
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</thead>
<tbody>
<tr>
<td>Celtis occidentalis</td>
<td>10 Y</td>
<td>FAC</td>
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<tr>
<td>Platanus occidentalis</td>
<td>10 Y</td>
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**Woody Vine Stratum (Plot size: 70 ft radius)**

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<thead>
<tr>
<th>Species Name</th>
<th>% Cover</th>
<th>Dominant</th>
<th>Int Status</th>
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<tbody>
<tr>
<td>Rumex crispus</td>
<td>5 Y</td>
<td>FAC</td>
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<tr>
<td>Verbesina alternifolia</td>
<td>5 Y</td>
<td>FACW</td>
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<td>Rudbeckia laciniata</td>
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**Herb Stratum (Plot size: 15 ft radius)**

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<tr>
<th>Species Name</th>
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**Total Cover = 12**

**Hydrophytic Vegetation Present**

- Yes
- No

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

**Definitions of Vegetation Strata:**

- **Tree** - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.
- **Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.
- **Woody Vines** - All woody vines greater than 3.28 ft. in height.

**Total Cover = 12**

**Remarks:**
No evidence of stunted/stressed crop or weedy competition

---

**Woody Vine Stratum (Plot size: 30 ft radius)**

- Yes
- No

**Total Cover = 0**

**Additional Remarks:**

---

**WOODY VINE STRATUM**

<table>
<thead>
<tr>
<th>Species Name</th>
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**Hydrophytic Vegetation Present**

- Yes
- No

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

---

**Herb Stratum (Plot size: 5 ft radius)**

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**Total Cover = 5**

**Remarks:**
No evidence of stunted/stressed crop or weedy competition

---

**Midwest Region**

**Additional Remarks:**

---

**Tree Stratum (Plot size: 30 ft radius)**

<table>
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**Woody Vine Stratum (Plot size: 70 ft radius)**

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**Total Cover = 12**

**Hydrophytic Vegetation Present**

- Yes
- No
D.2 QHEI DATA FORM
### Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

**Stream & Location:** Harrison Station Expansion Project

**QHEI Score:** [57]

<table>
<thead>
<tr>
<th><strong>Stream &amp; Location:</strong> Harrison Station Expansion Project</th>
<th><strong>QHEI Score:</strong> [57]</th>
</tr>
</thead>
</table>

**River Code:**

**Scorers Full Name & Affiliation:**

**Lat./Long.:**

**Office verified location:**

### 1) SUBSTRATE

- **BEST TYPES**
  - BLDR SLABS [10]
  - BOULDER [9]
  - COBBLE [8]
  - GRAVEL [7]
  - SAND [6]
  - BEDROCK [5]

- **OTHER TYPES**
  - POOL RIFFLE
  - HARDPAN [4]
  - DETRITUS [3]
  - MUCK [2]
  - ARTIFICIAL [0]

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

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

- **Check ONE (Or 2 & average)**

- **Number of BEST TYPES:**
  - 4 or more [2]
  - 3 or less [0]

- **Comments**

### 2) INSTREAM COVER

- **Check ONE**
  - UNDERCUT BANKS [1]
  - OVERHANGING VEGETATION [1]
  - SHALLOWS (IN SLOW WATER) [1]
  - ROOTMAT [1]

- **Check ONE (Or 2 & average)**

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

- **Comments**

### 3) CHANNEL MORPHOLOGY

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

- **Development**
  - EXCELLENT [7]
  - GOOD [6]
  - FAIR [5]
  - POOR [1]

- **Channelization**
  - NONE [6]
  - RECOVERED [4]
  - RECOVERING [3]
  - RECENT OR NO RECOVERY [1]

- **Stability**
  - HIGH [3]
  - MODERATE [2]
  - LOW [1]

- **Comments**

### 4) BANK EROSION AND RIPARIAN ZONE

- **erosion**
  - NONE / LITTLE [3]
  - MODERATE [2]
  - HEAVY / SEVERE [1]

- **Riparian Width**
  - WIDE > 50m [4]
  - MODERATE 10-50m [3]
  - NARROW 5-10m [2]
  - VERY NARROW < 5m [1]
  - NONE [0]

- **Flood Plain Quality**
  - FOREST, SWAMP [3]
  - SHRUB OR OLD FIELD [2]
  - RESIDENTIAL, PARK, NEW FIELD [1]
  - OPEN FENCING, ROWCROP [0]

- **Comments**

### 5) POOL / GLIDE AND RIFFLE / RUN QUALITY

- **Maximum Depth**
  - Check ONE (ONLY)
    - > 1m [6]
    - 0.7-1m [4]
    - 0.4-0.7m [2]
    - 0.2-0.4m [1]
    - < 0.2m [0]

- **Channel Width**
  - POOL WIDTH > RIFFLE WIDTH [2]
  - POOL WIDTH = RIFFLE WIDTH [1]
  - POOL WIDTH < RIFFLE WIDTH [0]

- **Current Velocity**
  - TORRENTIAL [-1]
  - VERY FAST [1]
  - INTERSTITIAL [-2]
  - MODERATE [1]
  - EDIES [1]

- **Recreational Potential**
  - NO RIFFLE [metric=8]

- **Riparian Run Substrate**
  - STABLE (e.g., Cobble, Boulder) [2]
  - MOD STABLE (e.g., Larg Gravel) [1]
  - UNSTABLE (e.g., Fine Gravel, Sand) [0]

- **Riffle Embededness**
  - NONE [2]
  - LOW [1]
  - MODERATE [0]
  - EXTENSIVE [-1]

- **Comments**

### 6) GRADIENT

- **DRAINAGE AREA**
  - VERY LOW - LOW [2-4]
  - MODERATE [6-10]
  - HIGH - VERY HIGH [10-6]

- **% POOL:** [3] **% GLIDE:** [0] **% RUN:** [10] **% RIFFLE:** [10]

- **Gradient**
  - 1.1 [ft/mi]

- **EPA 4520**

- **6/16/06**
oil sheen present in isolated areas, right downstream bank is very steep, eroded