## Letter of Notification for Bellefonte Extension 138 kV Line Rebuild Project



BOUNDLESS ENERGY\*\*

PUCO Case No. 21-0111-EL-BLN

Submitted to:

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

Submitted by:

AEP Ohio Transmission Company, Inc.

May 27, 2021

#### LETTER OF NOTIFICATION

#### AEP Ohio Transmission Company, Inc. (AEP Ohio Transco) Bellefonte Extension 138 kV Line Rebuild Project

#### 4906-6-05

AEP Ohio Transmission Company, Inc. ("AEP Ohio Transco" or the "Company") provides the following information to the Ohio Power Siting Board ("OPSB") 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 Letter of Notification.

The Company proposes to construct the Bellefonte Extension 138 kilovolt (kV) Line Rebuild Project in Lawrence County, Ohio (the "Project"). The Project begins at the existing Millbrook Park-South Point 138 kV Transmission Line in Perry Township, Ohio and ends at the existing Bellefonte Substation in Westwood, Kentucky. The total length of the overall transmission line is approximately four miles. The Project represents approximately three miles with the remaining, approximately one mile, located in Boyd County, Kentucky.

The Project involves rebuilding an existing double-circuit 138 kV transmission line within existing and new right-of-way ("ROW"). The existing double-circuit steel lattice structures will be generally replaced with double-circuit steel monopole structures. The majority of the Project will be rebuilt within the Ohio Power Company's existing transmission line ROW; however, approximately 0.6 mile of transmission line will be relocated outside of existing ROW due to constraints and proximity to a major waterway (Ice Creek). Figures 1 and 2 (Appendix A) show the location of the Project. Figure 2 in Appendix A shows the proposed centerline and ROW for the Project. The Project meets the requirements for a Letter of Notification ("LON") because it is within the types of projects defined by item 2(b) of Ohio Administrative Code Section 4906-1-01 Appendix A of the Application Requirement Matrix for Electric Power Transmission Lines:

- (2) Adding new circuits on existing structures designed for multiple circuit use, replacing conductors on existing structures with larger or bundled conductors, adding structures to an existing transmission line, or replacing structures with a different type of structure for a distance of:
  - (b) More than two miles.

The Project has been assigned PUCO Case No. 21-0111-EL-BLN.

#### **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 project will rebuild approximately four miles of transmission line (three miles in Ohio) and is a part of a larger area improvements project. The larger area improvements project includes rebuilding an additional 34.7 miles of the Millbrook Park-South Point 138 kV transmission line, which will be submitted to the OPSB under a separate cover. The Project that is the subject of this LON is necessary in order to replace deteriorating infrastructure. The existing towers and conductors are original 1952 equipment with eight outages since 2015. The majority of the existing structures (12 of the 17 or 71% of the whole line) have asset renewal concerns, which include broken insulators, damaged cross members, and burnt insulators. The Project will reduce the number of outages on the line and increase overall reliability. Failure to move forward with the proposed Project will result in reduced reliability over time and, potentially, preemptive load shedding as the existing line assets continue to deteriorate.

Retirement of the line is not a viable alternative because the line is needed to serve the subtransmission network at Bellefonte Station and growing load demand. Using the 2025 RTEP summer case, if this line is removed from service, the 69 kV lines between the Kenova and Ashland substations will overload under certain contingency scenarios. Although eliminating the existing Bellefonte Extension 138 kV line would not result in any direct loss of load, it would cause overloads on the underlying 69 kV network, exposing population centers in the Tri-State area to outages. Furthermore, the Project is important to support potential future load growth in the region.

The need and solution for the Project was presented to PJM on 5/03/2019 and 5/07/2020, then subsequently assigned a PJM Number of s2272.2. The existing Bellefonte–East Wheelersburg circuit is included as an existing project in Form FE-T9 of Ohio Power Company's 2021 Long-Term Forecast Report on page 85 of 108 (Appendix B).

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

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

The Project is located in Upper Township, Perry Township, and the Village of Coal Grove, in Lawrence County, Ohio. Figures 1 and 2 in Appendix A show the location of the proposed Project in relation to existing transmission facilities, including existing substations and other transmission lines.

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

The applicant shall describe the alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not

be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

The majority of the proposed transmission line rebuild work will occur within existing Ohio Power Company's ROW (see Figures 1 and 2 in Appendix A). Much of the Proposed Route is along the existing transmission line centerline; however, approximately 0.6 mile is proposed to be rebuilt on new ROW due to Project area constraints. The existing transmission line crosses the US 52 and Marion Pike overpass and is located on the edge of Ice Creek, where the current tower foundations have been compromised by erosion of the streambank. The Company conducted an alternatives analysis that included reviewing four alternative routes and two minor route diversions within the Project Focus Area (see Figure 3 in Appendix A). Based on desktop and field examination, the Company concluded that the Proposed Route, shown on Figure 2 in Appendix A, was the most suitable route for the Project. The goal of selecting a suitable route for the Project was to minimize impacts on land use and natural and cultural resources while avoiding circuitous routes, significantly higher costs, and non-standard design requirements. The Proposed Route was selected because it has the least amount of impacts to streams, riparian buffers, floodplains, and forested wetlands, avoids signage and underground utilities, avoids the US52/Marion Pike (State Route 243) overpass, avoids placing structures in Ohio Department of Transportation ("ODOT") ROW, and avoids potential Ice Creek streambank erosion risks. The selection of the Proposed Route was based on siting decisions made throughout the process, the knowledge of subject matter experts from the Company and the Company's consultant, and a comparative analysis of potential impacts.

Finally, the Proposed Route is short, efficient, direct, and represents the most suitable location and most appropriate solution for meeting the Company's needs in the area. 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 Company will inform affected property owners and tenants about this Project through several different mediums. Within seven days of filing this LON, the Company will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements of Ohio Revised Code ("OAC") Section 4906-6-08(A)(1-6). Further, the Company has mailed (or will mail) a letter, via first class mail, to affected landowners, tenants, contiguous owners and any other landowner the Company may approach for an easement necessary for the construction, operation, or maintenance of the Project. The letter will comply with all requirements of OAC Section 4906-6-08(B). The Company maintains a website (https://www.aeptransmission.com/ohio/Bellefonte/) which provides the public access to an electronic copy of this LON and the public notice for this LON. An electronic copy of the LON will be served to the public library in each political subdivision for this Project. The Company retains ROW land agents that discuss Project timelines, construction and restoration activities and convey information to affected owners and tenants throughout the Project.

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

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

Tree clearing will begin in October 2021 and transmission line construction for the Project is planned to begin in January 2022. The anticipated in-service date will be approximately July of 2022.

#### B(7) Area Map

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

Appendix A, Figure 1 provides a map with existing and proposed facilities, and clearly marked roads and highways at 1:48,000 and Figure 2 provides an aerial image showing roads and highways, clearly marked with Project components, at a scale of 1:7,200.

To visit the Project from Columbus, take I-71 South toward Cincinnati (4.4 miles). Take exit 101 to merge onto I-270 toward Wheeling (0.5 miles). Keep left to merge onto I-270 East (1.9 miles). Take exit 52 to merge onto US-23 South toward Circleville (39.9 miles). Take the US-23 exit toward Waverly/US-50 W/Portsmouth (0.9 miles). Continue onto US-23 South for 30.6 miles and take exit toward State Route 823 (0.7 miles). Continue on State Route 823 for 16.5 miles. Merge onto US-52 East and continue for 24.9 miles. Turn left onto Crabtree Hollow and follow for 0.7 miles before continuing onto Hog Back Road. Turn right onto Hoop Pole Creek Road North after 0.6 miles. In 0.3 miles the location of the easternmost portion of the Project will be on the right.

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

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

The Project will primarily be constructed within existing ROW; however, portions of the Project will be constructed outside of the existing ROW. New easements will be needed for the approximately 0.6 mile of transmission line to be located outside of existing ROW. Supplemental easements will be required for approximately one mile of the line due to minor deviations from the centerline. A table of property parcel numbers and road crossing names with an indication as to whether the easement necessary to construct and operate the facility has been obtained is provided in Appendix C.

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

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

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

The transmission line construction is estimated to include the following:

Voltage: 138 kV

Conductors: 795 KCM ACSR

Static Wire: 7#8 Alumoweld & 96 Fiber OPGW

Insulators: Non-ceramic, polymer

ROW Width: 100 Feet

Structure Type: One (1) double circuit, steel lattice tower

Ten (10) double circuit, steel monopole suspension structures Five (5) double circuit, steel dead-end monopole structures One (1) double circuit, steel three-pole dead-end structures

The Ohio River crossing will have two 96 fiber OPGW shield wires rather than the OPGW and Alumoweld.

#### 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.

#### (i) Calculated Electric and Magnetic Field Strength Levels

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

EMF levels were computed one meter above ground under the line and at the ROW edges (50/50 feet, left/right, of centerline). The results, calculated using Electric Power Research Institute's ("EPRI's") EMF Workstation 2015 software, are summarized below.

Bellefonte Extension 138KV Line				
Condition	Bellefonte - North Proctorville/ Bellefonte - East Wheelersburg Load (A)	Minimum Ground Clearance (feet)	Electric Field (kV/m)*	Magnetic Field (mG)*
(1) Normal Max. Loading^	306.27/136.87	46.1	0.32/1.26/0.32	13.84/21.68/11.64
(2) Emergency Line Loading^^	421.84/165.69	40.7	0.30/1.5/0.30	20.92/34.96/16.79
(3) Winter Conductor Rating^^^	2167.20/2167.20	46.1	0.32/1.26/0.32	124.04/206.19/124.04

<sup>\*</sup>EMF levels (left ROW edge/maximum/right ROW edge) computed one meter above ground at the point of minimum ground clearance, assuming balanced phase currents and 1.0 P.U. Voltages. ROW width is 50 feet (left) and 50 feet (right) of centerline, respectively.

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

	General	Controlled
	Public	Environment
Electric Field Limit (kV/m)	5.0	20.0
Magnetic Field Limit (mG)	9,040	27,100

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

#### B(9)(b)(ii) Design Alternatives

A discussion of the applicant's consideration of design alternatives with respect to electric and magnetic fields and their strength levels, including alternate conductor configuration and phasing, tower height, corridor location, and right-of-way width.

Design alternatives were not considered due to the EMF strength levels. Transmission lines, when energized, generate EMF. Laboratory studies have failed to establish a strong correlation between exposure to EMF and effects on human health. However, some people are concerned that EMF have impacts on human health. Due to these concerns, EMF associated with the new circuits was calculated and set forth in the table above. The EMF was computed assuming the highest possible EMF values that could exist along the proposed transmission line. Normal daily EMF levels will operate below these maximum load

<sup>^</sup>Peak line flow expected with all system facilities in service.

<sup>^^</sup>Maximum flow during a critical system contingency

<sup>^^^</sup>Maximum continuous flow that the line, including its terminal equipment, can withstand during winter conditions.

conditions. Based on studies from the National Institutes of Health, the magnetic field (measured in milliGauss, or mG) associated with emergency loading at the highest EMF value for this transmission line is lower than those associated with normal household appliances like microwaves, electric shavers and hair dryers. For additional information regarding EMF, the National Institutes of Health has posted information on their website: http://www.niehs.nih.gov/health/topics/agents/emf/. Additionally, information on electric available AEP Ohio's magnetic fields is on website: https://www.aepohio.com/info/projects/emf/OurPosition.aspx. The information found on AEP Ohio's website describes the basics of electromagnetic field theory, scientific research activities, and EMF exposures encountered in everyday life. Similar material will be made available for those affected by the construction activities for this Project.

#### B(9)(c) Project Cost

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

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

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

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

#### **B(10)(a)** 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 in Upper Township, Perry Township, and the Village of Coal Grove in Lawrence County, Ohio.

The zoning of parcels within the Project area included agricultural, residential, retail, commercial, and exempt (Village-owned, school-owned, State-owned) parcels. Field observations show the Project area is comprised primarily of early successional deciduous forest habitat, pastures, maintained lawns, old field habitat, and residential and commercial development (see Figure 3 in Appendix E). There is also a recreational sports complex crossed by the existing transmission line. Appendix E also contains photographs and descriptions of specific habitat types and land uses within the Project area. There is one park (Joe Swarts Sports Complex) located within 100 feet of the proposed centerline (see Figure 3 in Appendix A). Additionally, the Company's consultant identified one small family cemetery (Crabtree Cemetery) within 100 feet of the proposed centerline in the eastern portion of the Project area where the transmission line is being rebuilt on the existing centerline. The cemetery is located outside of the existing and proposed ROW and will be avoided during construction of the Project. There are no schools, designated places of worship, wildlife management areas, or nature preserve lands within 100 feet of the Project area and no residences located within the 100-foot ROW.

Approximately 22 acres of tree clearing within the existing and proposed ROW will be required for the Project. Any necessary tree clearing will take place between October 1 and March 31, to adhere to recommendations from the U.S. Fish and Wildlife Service ("USFWS") and Ohio Department of Natural Resources ("ODNR"). Additionally, no significant environmental or cultural resources are expected to be impacted as a result of this Project.

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

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

Based on field survey observations by the Company's consultant, there was no agricultural land in the Project area (see Figure 3 in Appendix E). As verified by the Lawrence County Auditor's Office on March 8, 2021, there are no parcels in the Project area that are enrolled in the agricultural district land program.

#### 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.

Phase I Archaeological and Phase I History/Architectural surveys were completed by the Company's consultant in October 2020 and January 2021. No significant archaeological sites were identified within the Project area. Two previously recorded architectural and historical resources were identified within the study area for the Project, one of which is recommended as eligible for listing on the National Register of Historic Places ("NRHP"), but it is not anticipated that the Project will impact either of these resources. Lastly, the Crabtree Cemetery was identified by the Company's consultant within 100 feet of the proposed centerline and where the transmission line is being rebuilt on the existing centerline. The cemetery is located outside of the existing ROW and will be avoided during construction of the Project. Additionally, this cemetery was not recommended as eligible for listing on the NRHP by the Company's consultant.

Correspondence from the State Historic Preservation Office ("SHPO") regarding the Phase I Archaeological survey report was received on April 29, 2021 (see Appendix D). The SHPO stated that with very little documentation and a firm understanding of the Crabtree Cemetery boundaries, it is possible the access road may disturb unmarked burials. The SHPO requested that the Company consider other alternatives to the access road and if an alternative is not possible, they recommended additional investigations to ensure no burials will be disturbed by construction activities in the area. The Company has adjusted the access road plans in this area accordingly to avoid the cemetery. The results of the Phase I History/Architectural surveys are currently being coordinated with the SHPO. A copy of the SHPO correspondence letter regarding the Phase I History/Architectural survey report will be provided once their response is received. No adverse effects on historic properties are anticipated.

#### 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 OHCoooo5, 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. An Earth Moving Permit will also be obtained from Lawrence County prior to the initiation of construction activities.

Coordination with the SHPO, the USFWS, and the ODNR have been completed or is on-going. Coordination letters can be found in Appendix D.

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, wetlands, or open waters will be impacted by the Project. The Project will require a Rivers and Harbors Act Section 10 Permit from the USACE for the Ohio River crossing portion of the Project, which will be obtained by the Company prior to initiation of construction activities associated with the Project. Proposed structures 12, 13, 14, 15, and 16, existing structures 12, 13, 14, 15, and 16, as well as associated proposed access roads are located within mapped Federal Emergency Management Agency ("FEMA") 100-year floodplains (FEMA Map ID Nos. 39087Co351E, 39087Co332D, and 39087Co244E). OPSB-jurisdictional projects are exempt from needing to obtain a floodplain permit (Special Flood Hazard Area Permit) from Lawrence County. However, if applicable, the Company will obtain a floodplain permit from the Village of Coal Grove prior to the initiation of construction activities associated with the Project.

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/endangered/lists/pdf/OhioCtyList29 Jan2018.pdf) was reviewed by the Company's consultant to determine the listed threatened and endangered species that currently are known

to occur, or that have the potential to occur, in Lawrence County. This USFWS publication lists the following threatened and endangered species as occurring in, or having the potential to occur, in Lawrence County: Indiana bat (*Myotis sodalis*; federally endangered), northern long-eared bat (*Myotis septentrionalis*; federally threatened), fanshell (*Cyprogenia stegaria*; federally endangered), pink mucket pearlymussel (*Lampsilis abrupta*; federally endangered), sheepnose (*Plethobasus cyphyus*; federally endangered), snuffbox (*Epioblasma triquetra*; federally endangered), and running buffalo clover (*Trifolium stoloniferum*; federally endangered).

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 December 5, 2019 response letter from the USFWS (see Appendix D) stated all projects in the State of Ohio lie within range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. In Ohio, presence of these species is assumed wherever suitable habitat occurs unless a presence/probable absence survey has been performed to document probable absence. No hibernacula for these species were observed within the Project area. However, the Project area does contain potentially suitable summer roosting and foraging habitat for the Indiana bat and northern long-eared bat. Potentially suitable summer roosting habitat observed within the Project area was limited to mixed early successional/second growth deciduous forest habitat. The USFWS response letter stated that, should the Project site contain trees >3 inches diameter at breast height ("dbh"), the USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, the USFWS recommends that removal of trees ≥3 inches dbh only occur between October 1 and March 31 in order to avoid adverse effects to these species. If implementation of seasonal tree clearing is not possible, the USFWS recommends summer presence/probable absence surveys be conducted between June 1 and August 15. There are no potential bat hibernacula within the Project area and the Company intends to conduct any necessary tree clearing between October 1 and March 31. Therefore, impacts to the northern long eared bat or Indiana bat are not anticipated.

Additionally, the USFWS stated that they do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species due to the project type, size, and location.

Several state-listed threatened species, endangered species, and species of concern are listed by the ODNR (https://ohiodnr.gov/static/documents/wildlife/state-listed-species/lawrence.pdf) as occurring in, or potentially occurring in Lawrence 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 E. An ODNR Ohio Natural Heritage Program data request and environmental review request letter was submitted via email on November 21, 2019.

The ODNR Office of Real Estate response letter dated January 8, 2020 (Appendix D), stated that the Project area is located within a one-mile radius of the following: maypop (*Passiflora incarnata*; state-listed threatened), gray beard-tongue (*Penstemon canescens*; state-listed threatened), blue scorpion-weed (*Phacelia covillei*; state-listed endangered), wartyback (*Cyclonias nodulata*; state-listed endangered), butterfly (*Ellipsaria lineolata*; state-listed endangered), elephant-ear (*Elliptio crassidens crassidens*; state-listed endangered), black sandshell (*Ligumia recta*; state-listed threatened), washboard (*Megalonaias nervosa*; state-listed endangered), threehorn wartyback (*Obliquaria reflexa*; state-listed threatened), Ohio

pigtoe (*Pleurobema cordatum*; state-listed endangered), ebonyshell (*Reginaia ebenus*; state-listed endangered), channel darter (*Percina copelandi*; state-listed threatened), river darter (*Percina shumardi*; state-listed threatened), green salamander (*Aneides aeneus*; state-listed endangered), and Little Ice Creek Conservation Site, a state-listed high quality natural area. No work on the Project is proposed in perennial streams. Therefore, no impacts to the state-listed threatened and endangered mussel or fish species known to occur within a one-mile radius of the Project area are anticipated. Potentially suitable habitat for the green salamander was identified by the Company's consultant within the Project area (moist crevices in sandstone rock faces). However, no impacts to this type of habitat are anticipated. Therefore, impacts to the green salamander are not anticipated. Potentially suitable habitat for maypop, gray beard-tongue, and blue scorpionweed is also present within the Project area, as described in Table 5 in Appendix E. The Little Ice Creek Conservation Site is located approximately 3,000 feet southeast of the easternmost portion of the Project area (see Figure 1 in Appendix A) and therefore will not be impacted.

Additionally, the ODNR stated 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. If suitable roost trees must be cut during the summer months, the ODNR 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 0.5 kilometer for linear projects.

According to the ODNR, the state-listed endangered little brown bat (*Myotis lucifugus*; state-listed endangered), northern long-eared bat (state-listed endangered), and tri-colored bat (*Perimyotis subflavus*; state-listed endangered) occur statewide in Ohio. The Project area contains potentially suitable roosting habitat for these species and the Indiana bat (mixed early successional/second growth deciduous forest), but no potentially suitable hibernacula for these species were observed within the Project area. The Company intends to conduct any required tree clearing between October 1 and March 31. Therefore, no impacts to these species are anticipated.

The ODNR states that the Project is within the range of the following state-listed and federally listed threatened and endangered mussel species: sheepnose, fanshell, pink mucket, snuffbox, ebonyshell, elephant-ear, washboard, monkeyface (*Quadrula metanevra*; state-listed endangered), little spectaclecase (*Villosa lienosa*; state-listed endangered), Ohio pigtoe, threehorn wartyback, and the black sandshell. Furthermore, the ODNR stated that this project must not have an impact on freshwater native mussels at the Project site and this ruling applies to both listed and non-listed mussel species. Since no in-water work is proposed by the Company in a perennial stream, impacts to the above listed mussel species are not anticipated.

The ODNR also states that the Project is within the range of the following state-listed endangered and threatened fish species: the goldeneye (*Hiodon alosoides*; state-listed endangered), shoal chub (*Macrhybopsis hyostoma*; state-listed endangered), shovelnose sturgeon (*Scaphirhynchus platorynchus*; state-listed endangered), channel darter, and river darter. The ODNR recommends no in-water work in the Ohio River from March 15 through June 30, and in other perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the ODNR stated that this project is not likely to impact these or other aquatic species.

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Because no in-water work is proposed by the Company in a perennial stream, impacts to the above listed fish species are not anticipated.

Additionally, the ODNR states that the Project is within the range of the timber rattlesnake (*Crotalus horridus horridus*), a state-listed endangered species and federal species of concern. However, due to the location of the Project, and/or the type of work proposed, the ODNR stated that this Project is not likely to impact this species.

The Project is also within range of the following state-listed endangered and threatened amphibian species: the green salamander, eastern spadefoot (*Scaphiopus holbrookii*), and the mud salamander (*Pseudotriton montanus*). However, the ODNR stated that due to the location, type of work proposed, and/or the type of habitat present at the Project site and within the vicinity of the Project area, this Project is not likely to impact these species.

#### 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 D). Additionally, the ODNR response letter stated that the Little Ice Creek Conservation Site is located within a one mile radius of the Project area, but there are 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 occurring within the Project area (Appendix D). As stated and shown on Figure 1 (Appendix A), the Little Ice Creek Conservation site is located approximately 3,000 feet southeast of the easternmost portion of the Project area and therefore will not be impacted by the Project.

An ecological resources inventory report for the Project was completed by the Company's consultant on February 12, 2021 (Appendix E). During the ecological field surveys, three palustrine emergent wetlands totaling approximately 0.19 acre, one palustrine scrub-shrub wetland totaling approximately 0.39 acre, one palustrine forested wetland totaling approximately 0.08 acre, and one mixed palustrine emergent/palustrine scrub-shrub wetland totaling approximately 0.10 acre were identified within the Project area. Four perennial streams totaling approximately 998 linear feet in length, nine intermittent streams totaling approximately 1,216 linear feet in length, and five ephemeral streams totaling approximately 484 linear feet in length were delineated within the Project area. Of the four perennial streams identified within the Project area, three are named U.S. Geological Survey ("USGS") streams (Ohio River, Ice Creek, and Little Ice Creek). See Appendix E for more information regarding these aquatic

#### LETTER OF NOTIFICATION FOR BELLEFONTE EXTENSION 138 KV LINE REBUILD PROJECT

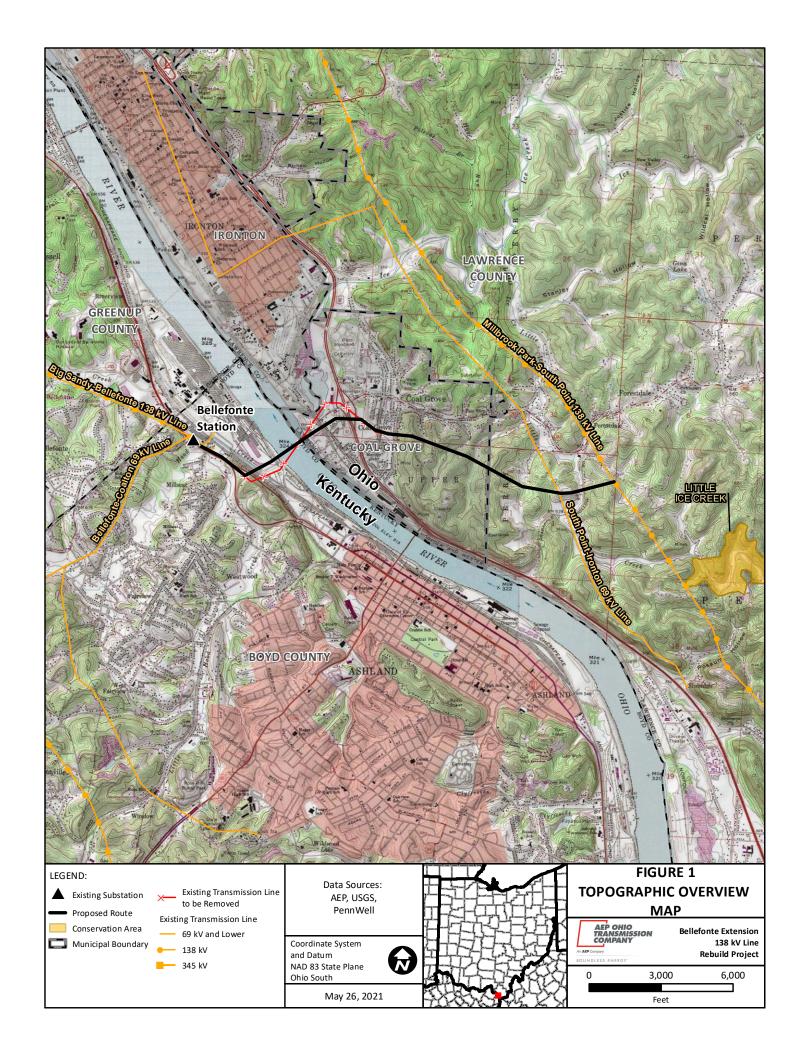
resources. No impacts to the wetlands or streams identified within the Project area are anticipated to be required for the Project.

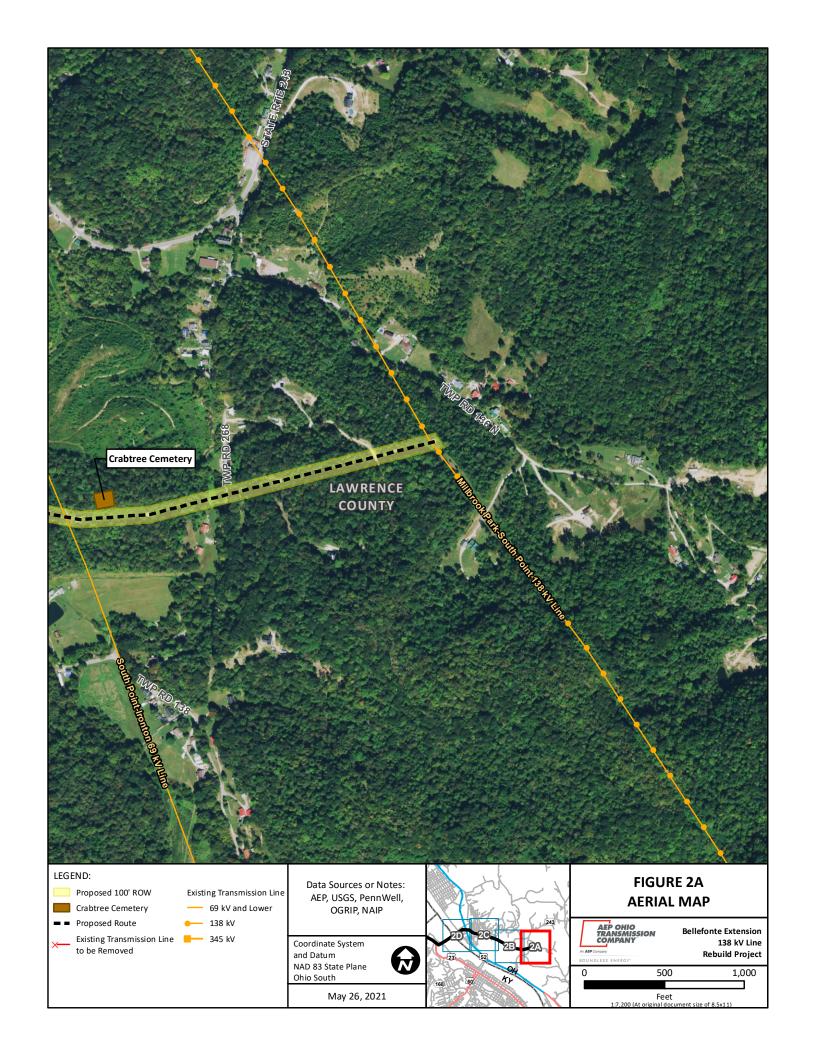
#### **B(10)(g)** Unusual Conditions

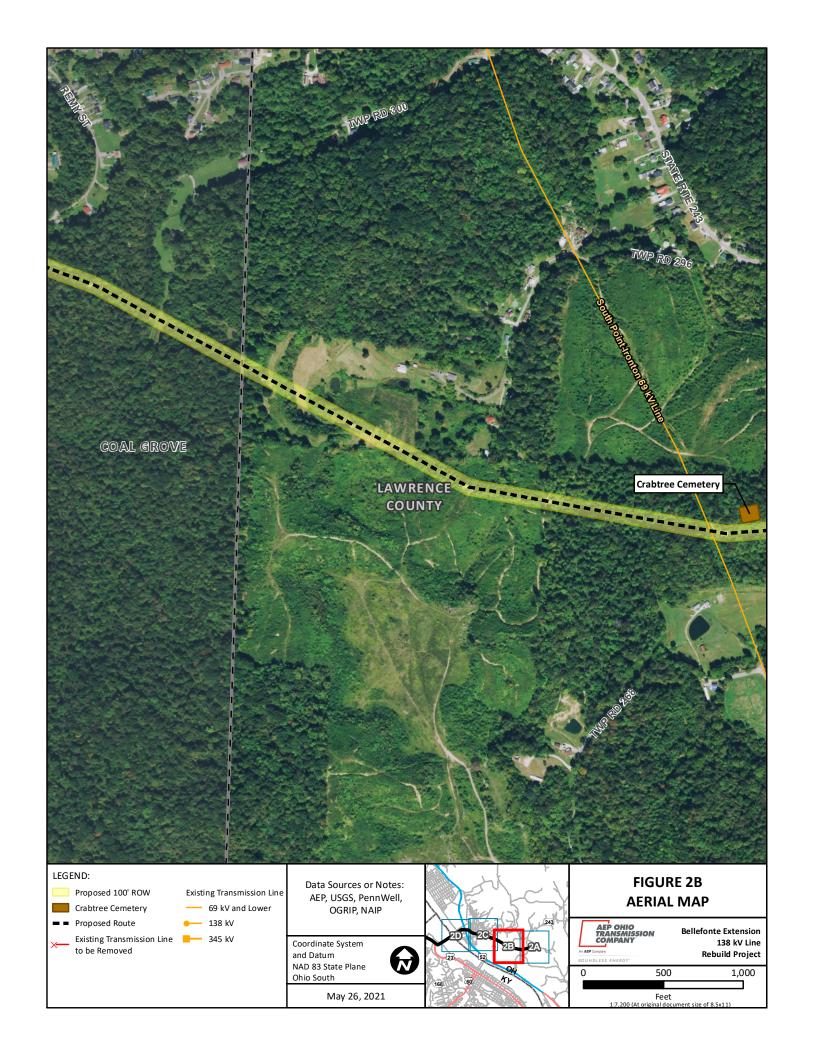
Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

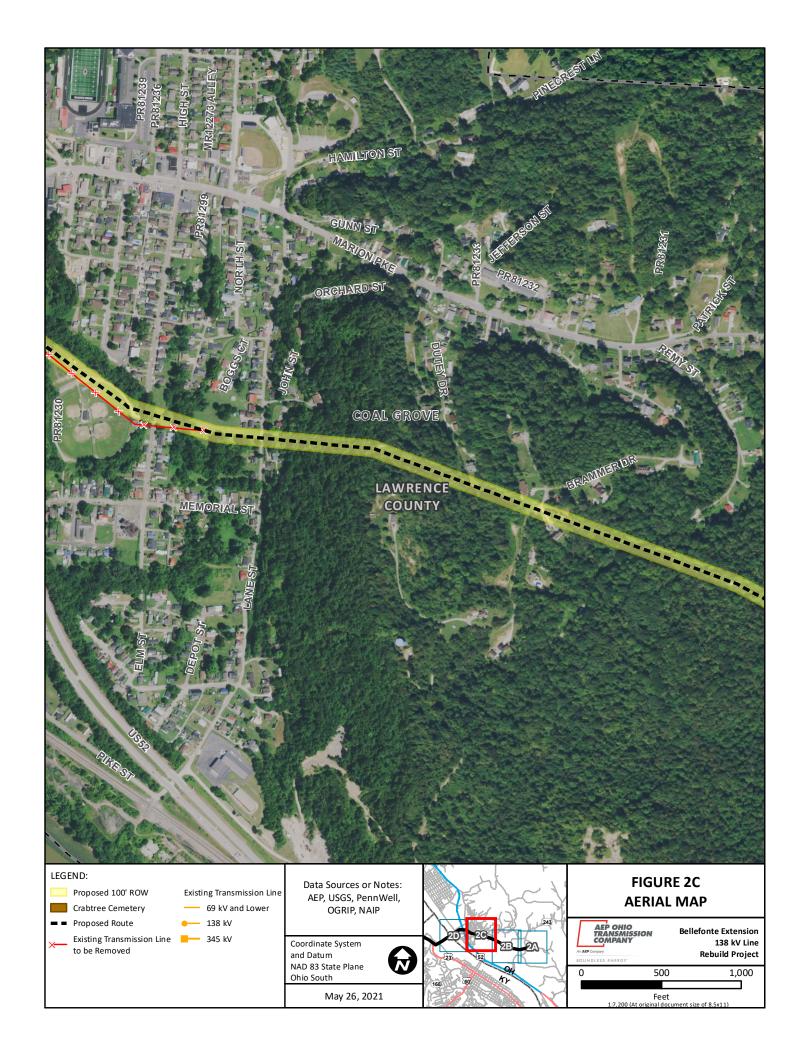
To the best of the Company's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

## APPENDIX A Project Figures

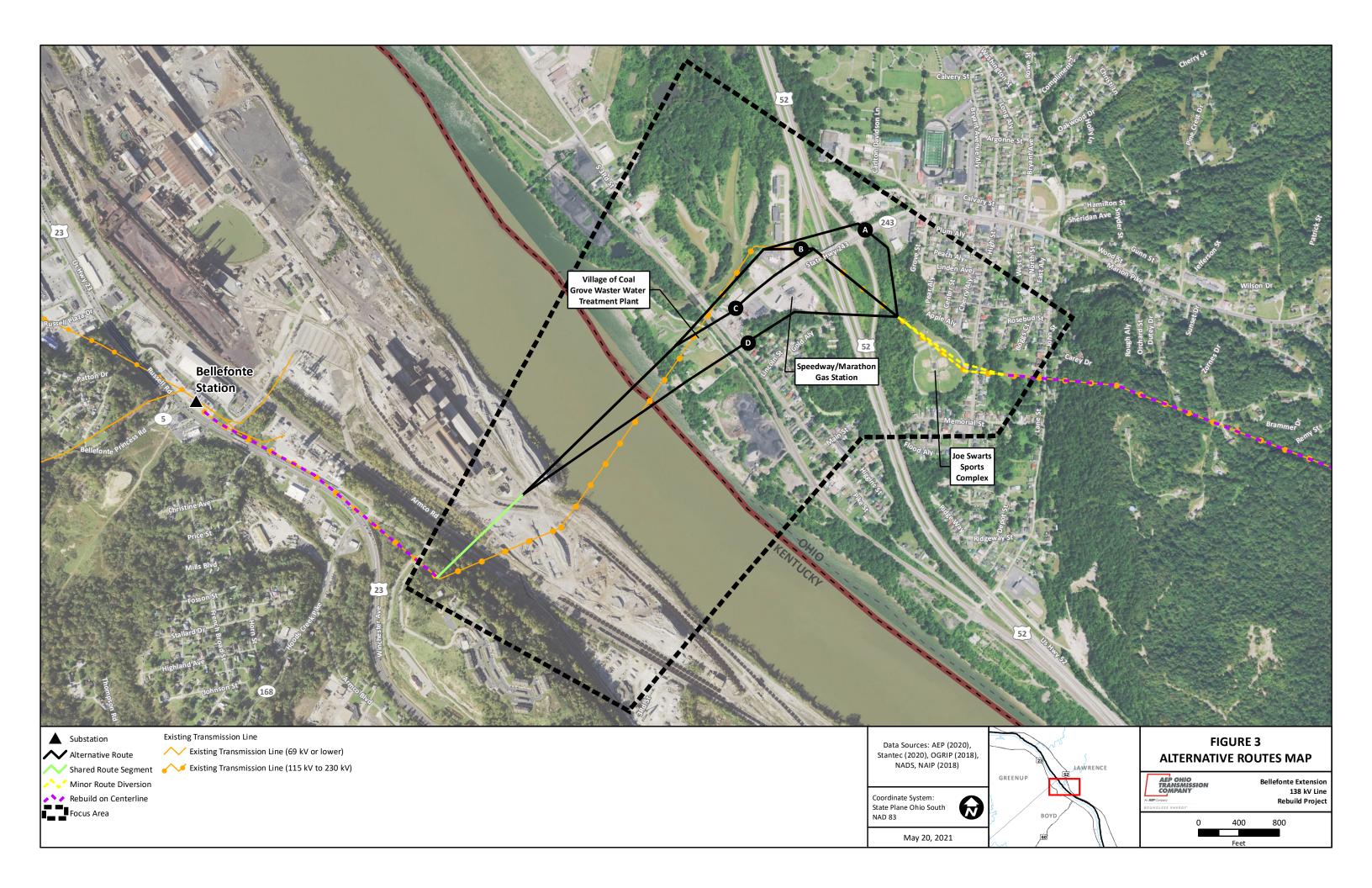












# APPENDIX B PJM Submittal and Long Term Forecast Report

# PUCO Form FE-T9 AEP Ohio Transmission Company Specifications of Planned Transmission Lines

LINE NAME AND NUMBER:	Millbrook Park - South Point / Millbrook Park - E. Wheelersburg - Bellefonte - N. Proctorville - S. Point (s2272) TP2019104	
POINTS OF ORIGIN AND TERMINATION	Millbrook Park, South Point INTERMEDIATE STATION - Dogwood Ridge, East Wheelersburg, Hanging Rock, Bellefonte, North Proctorvielle, South Point	
RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS	38 mi / 100 ft / 2 circuit	
VOLTAGE: DESIGN / OPERATE	138 kV/ 138 kV	
APPLICATION FOR CERTIFICATE:	2021	
CONSTRUCTION:	2024-2026	
CAPITAL INVESTMENT:	\$140M	
PLANNED SUBSTATION:	N/A	
SUPPORTING STRUCTURES:	Steel	
PARTICIPATION WITH OTHER UTILITIES	N/A	
PURPOSE OF THE PLANNED TRANSMISSION LINE	Rebuild of existing 138 kV line	
CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION	Increased risk of equipment failure.	
MISCELLANEOUS:	Double circuit accounts for on Millbrook Park - South Point, Millbrook Park - East Wheelersburg, East Wheelersburg - Bellefonte, Bellefonte - North Proctorville, North Proctorville - South Point 138 kV	



Need Number: AEP-2019-OH025

**Process Stage:** Solutions Meeting 05/22/2020

Previously Presented: Needs Meeting 05/20/2019

Supplemental Project Driver: Equipment/Material/Performance/Risk

Specific Assumptions Reference: AEP Guidelines for Transmission Owner Identified

Needs (AEP Assumptions Slide 8), Presentation on pre-1930s lines

#### **Problem Statement:**

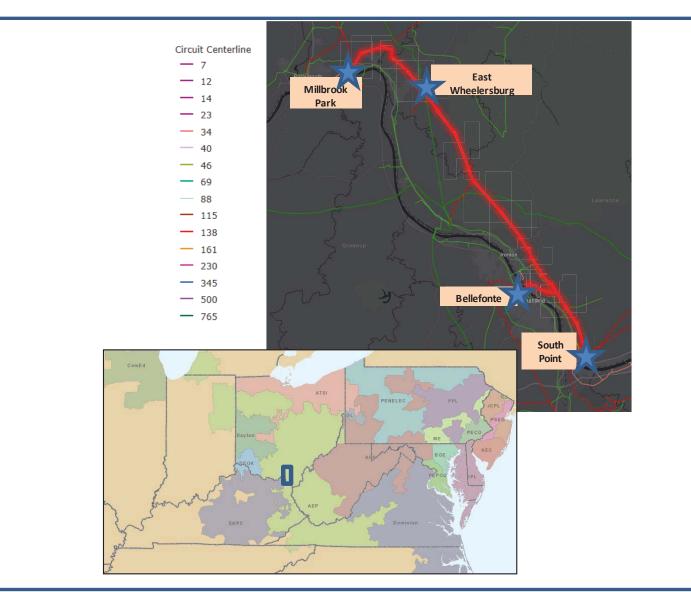
- The South Point Portsmouth 138 kV double circuit is 34.7 miles and the Bellefonte 138 kV Extension is 4 miles in length.
- The conductor is primarily 397.5 ACSR (167 MVA).
- The South Point-Portsmouth line was originally constructed in 1929, with the majority of the structures and conductor being original.
- There are 45 open conditions on the line, including conductor issues, burnt/broken insulators, and loose/broken conductor hardware.
- Insulators of this vintage have shown heightened failure rates.

In general, several issues impact 1920 lattice tower lines:

- The steel conductor attachment plates have significant wear resulting in a loss of 50% of its strength.
- The cross arm hanger tension members are single mode of failure elements that are deteriorated and undersized due to the original design criteria.
- Lattice towers of this vintage do not meet current design requirements for wind and ice loading.
- Foundations are undersized for modern wind loading.
- Towers are beginning to show corrosion.

Model: N/A

## AEP Transmission Zone M-3 Process Millbrook Park-South Point Rebuild





Need Number: AEP-2019-OH025

Process Stage: Solutions Meeting 05/22/2020

**Proposed Solution:** 

Rebuild the 35-miles of the South Point-Portsmouth double circuit 138 kV line between Millbrook Park – South Point; with 795 ACSR (257MVA) or equivalent

conductor. Estimated Cost: \$128.0M

Rebuild the 3.8-miles of the Bellefonte Extension Line from the South Point – Portsmouth line to Bellefonte; with 795 ACSR (257MVA) or equivalent conductor.

Estimated Cost: \$20.1M

Remote end work at South Point station. Estimated Cost: \$0.6M

**Total Estimated Transmission Cost:** \$148.7M

#### **Alternatives Considered:**

Rebuild the Millbrook Park – South Point 138 kV corridor as single circuit by retiring the existing Millbrook Park – South Point 138 kV circuit and rebuilding the Millbrook Park – Bellefonte – North Proctorville 138 kV circuits.

The area that the line traverses consistently receives a significant amount of large load inquiries due to its proximity to the Ohio River and railways. Reducing the corridor to a single circuit would greatly diminish the ability to support new load in the area due to the existing connections to the area's 69 kV system. Flexibility in how to address the area's existing 69 kV system in the future would also be greatly limited.

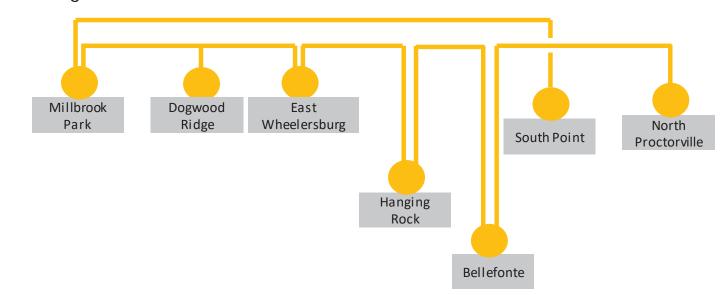
**Estimated Alternative Transmission Cost: \$138.7M** 

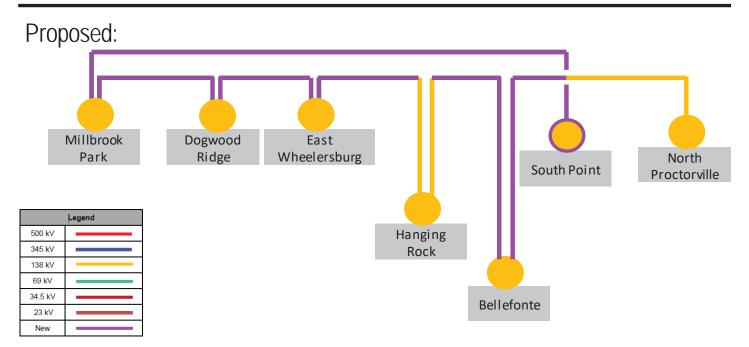
Projected In-Service: 12/15/2025

**Project Status:** Scoping

## AEP Transmission Zone M-3 Process Millbrook Park-South Point Rebuild

### Existing:





## APPENDIX C Property Parcel Number Table

Property Parcel Number	Agreement Type	Easement Agreement Obtained (Yes/No)			
Structure 26 Tap Location					
14-021-1200.000	Existing Easement Rights	Yes			
14-069-0900.000	Existing Easement Rights	Yes			
14-069-0500.002	Existing Easement Rights	Yes			
14-069-0500.000	Existing Easement Rights	Yes			
14-069-1100.000	Existing Easement Rights	Yes			
14-071-1200.000	Existing Easement Rights	Yes			
Township Road 268					
14-069-1102.000	Existing Easement Rights	Yes			
14-069-1200.000	Existing Easement Rights	Yes			
14-069-1400.000	Existing Easement Rights	Yes			
14-068-1400.000	Existing Easement Rights	Yes			
14-068-1500.000	Existing Easement Rights	Yes			
14-068-0400.000	Existing Easement Rights	Yes			
14-068-0700.000	Existing Easement Rights	Yes			
29-037-0900.000	Existing Easement Rights	Yes			
29-037-0600.000	Existing Easement Rights	No			
29-037-0700.000	Supplement Existing Easement	No			
29-037-0400.000	Supplement Existing Easement	No			
29-038-1000.000	Supplement Existing Easement	No			
	Remy Street				
29-038-0800.000	Supplement Existing Easement	No			
29-038-1100.000	Supplement Existing Easement	No			
29-038-0901.000	Supplement Existing Easement	No			
29-022-1800.000	Supplement Existing Easement	No			
	Brammer Drive				
29-038-0600.000	Supplement Existing Easement	No			
29-013-0101.000	Supplement Existing Easement	No			
29-013-0102.000	Supplement Existing Easement	No			
29-011-1500.000	Supplement Existing Easement	No			
29-029-1100.000	Supplement Existing Easement	No			
29-024-0500.000	Supplement Existing Easement	No			
Lane Street					
29-029-0900.000	Supplement Existing Easement	No			
29-029-0200.000	Supplement Existing Easement	No			
29-029-0300.000	Supplement Existing Easement	No			
29-029-0400.000	Supplement Existing Easement	No			
High Street					
29-002-1800.000	Supplement Existing Easement	No			
29-002-0500.000	Supplement Existing Easement	No			
29-002-0300.000	Supplement Existing Easement	No			
29-035-1300.000	Supplement Existing Easement	No			
US Highway 52					
29-035-0900.000	New ROW Needed	No			

Property Parcel Number	Agreement Type	Easement Agreement Obtained (Yes/No)	
29-035-1400.000	Supplement Existing Easement	No	
29-035-1200.000	New ROW Needed	No	
29-054-1000.000	New ROW Needed	No	
29-054-1200.000	New ROW Needed	No	
29-054-1400.000	New ROW Needed	No	
29-054-0900.000	New ROW Needed	No	
Stanley Street			
29-054-1100.000	New ROW Needed	No	
29-054-1300.000	New ROW Needed	No	
29-035-1500.000	New ROW Needed	No	
29-054-1500.000	New ROW Needed	No	
29-048-0300.000	New ROW Needed	No	
29-056-0100.000	New ROW Needed	No	
29-048-0100.001	New ROW Needed	No	
29-047-1801.001	New ROW Needed	No	
29-047-1700.000	New ROW Needed	No	
29-050-0600.000	New ROW Needed	No	
29-048-0400.000	New ROW Needed	No	
29-036-0400.000	New ROW Needed	No	
29-051-1800.000	New ROW Needed	No	
Pike Street			
29-049-1800.000	Supplement Existing Easement	No	

## APPENDIX D Agency Correspondence



### Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Fax: (614) 267-4764

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

January 8, 2020

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

Re: 19-1008; Bellefonte Extension 138 kV Line Rebuild Project

**Project:** The Project involves rebuilding approximately 3.6 miles of existing 138 kV electric transmission line in Ohio and approximately and 1.4 miles of existing 138 kV electric transmission line in Kentucky.

**Location:** The proposed project is located in Perry Township, Lawrence 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:

Maypop (Passiflora incarnata), T
Gray beard-tongue (Penstemon canescens), T
Blue scorpion-weed (Phacelia covillei), E
Wartyback (Cyclonaias nodulata), E
Butterfly (Ellipsaria lineolata), E
Elephant-ear (Elliptio crassidens), E
Black sandshell (Ligumia recta), T
Washboard (Megalonaias nervosa), E
Threehorn wartyback (Obliquaria reflexa), T
Ohio pigtoe (Pleurobema cordatum), E
Ebonyshell (Reginaia ebenus), E
Channel darter (Percina copelandi), T
River darter (Percina shumardi), T
Green salamander (Aneides aeneus), E
Little Ice Creek Conservation Site

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

A Conservation Site is an area deemed by the Natural Heritage Database to be a high-quality natural area not currently under formal protection. It may, for example, harbor one or more rare species, be an outstanding example of a plant community or have geologically significant features, etc. These sites may be in private ownership and our listing of them does not imply permission for access.

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 (Carva laciniosa), bitternut hickory (Carva 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), 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 sheepnose (*Plethobasus cyphyus*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the pink mucket (*Lampsilis orbiculata*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally

endangered mussel, the ebonyshell (Fusconaia ebenus), a state endangered mussel, the elephantear (Elliptio crassidens), a state endangered mussel, the washboard (Megalonaias nervosa), a state endangered mussel, the monkeyface (*Quadrula metanevra*), a state endangered mussel, the little spectaclecase (Villosa lienosa), a state endangered mussel, the Ohio pigtoe (Pleurobema cordatum), a state endangered mussel, the threehorn wartyback (Obliquaria reflexa), a state threatened mussel, and the black sandshell (*Ligumia recta*), a state threatened mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2018), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2018) can be found at: http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Su rvey%20Protocol.pdf

The project is within the range of the goldeye (*Hiodon alosoides*), a state endangered fish, the shoal chub (*Macrhybopsis hyostoma*), a state endangered fish, the shovelnose sturgeon (*Scaphirhynchus platorynchus*), a state endangered fish, the channel darter (*Percina copelandi*), a state threatened fish, and the river darter (*Percina shumardi*), a state threatened fish. The DOW recommends no in-water work in the Ohio River from March 15 through June 30, and in other perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species, utilizing dry slopes and rocky outcrops. In addition to using wooded areas, the timber rattlesnake utilizes sunlit gaps in the canopy for basking and deep rock crevices for overwintering. Due to the location, this project is not likely to impact this species.

The project is within the range of the green salamander (*Aneides aeneus*), a state endangered amphibian. This species inhabits the deep moist cracks of rock cliffs. Due to the location, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, and the type of habitat present at the project site, and within the vicinity of the project area, this project is not likely to impact this species.

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

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the 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.

 $\frac{http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List\_8\_16.pdf}{}$ 

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

Mike Pettegrew Environmental Services Administrator (Acting)

#### Godec, Daniel

From:

susan\_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>

Sent:

Thursday, December 05, 2019 8:14 AM

To:

Godec, Daniel

Cc:

nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us

Subject:

Bellefonte Extension 138 kV Line Rebuild Project, Lawrence Co.



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



TAILS# 03E15000-2020-TA-0292

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 humanmade 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  $\geq 3$  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  $\geq 3$  inches dbh cannot be avoided, we recommend that removal of any trees  $\geq 3$  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 <a href="http://www.fws.gov/midwest/endangered/mammals/nleb/index.html">http://www.fws.gov/midwest/endangered/mammals/nleb/index.html</a>), 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



In reply, refer to 2021-LAW-51026

April 29, 2021

Lee Arco GAI Consultants, Inc. 500 Lee Street, Suite 700 Charleston, WV 25301 l.arco@gaiconsultants.com

RE: Bellefonte Extension 138kV Line Rebuild Project, Perry Township, Lawrence County, Ohio

Dear Mr. Arco:

This letter is in response to the correspondence received on March 31, 2021 regarding the proposed Bellefonte Extension 138kV Line Rebuild Project, Perry Township, Lawrence 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 Resources Investigation, Bellefonte Extension 138 kV Line Rebuild Project, Lawrence County, Ohio* by Lee J. Arco (GAI Consultants, Inc. 2021).

A literature review, visual inspection and shovel test unit excavation was completed as part of the investigations. No previously identified archaeological resources are located within in the project area and no new archaeological sites were identified during survey. Crabtree Cemetery (OGSID 6502, OHI#LAW0139112) was identified during survey. Crabtree Cemetery was not identified on SHPO mapping because our office did not have good locational information. Our office will add Crabtree Cemetery to our mapping under the OGS Cemetery layer. Our office agrees the proposed location of the access road which runs to the west and south of the cemetery is a concern. With very little documentation and a firm understanding of the cemetery boundaries, it is possible the access road may disturb unmarked burials. Our office requests AEP consider other alternatives to the access road. If an alternative is not possible, our office recommends proposing additional investigations to ensure no burials will be disturbed by construction activities in the area.

The report states that "a complete review of the historic and architectural resources in the project vicinity was completed concurrently with the Phase I archaeological studies. Results of that study are presented under separate cover." Please provide the history/architecture survey to our office for review.

Our office looks forward to additional coordination regarding Crabtree Cemetery (OGSID 6502, OHI#LAW0139112) and the history/architecture survey. If you have any questions, please contact me at (614) 298-2022, or by e-mail at <a href="mailto:khorrocks@ohiohistory.org">khorrocks@ohiohistory.org</a> or Joy Williams at <a href="mailto:jwilliams@ohiohistory.org">jwilliams@ohiohistory.org</a>. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager

Resource Protection and Review

# APPENDIX E Ecological Resources Inventory Report



Bellefonte Extension 138 kV Line Rebuild Project, Lawrence County, Ohio

**Ecological Resources Inventory Report** 

Prepared for:

AEP Ohio Transmission Company, Inc. 8600 Smith's Mill Road New Albany, OH 43054

Prepared by:

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

### Sign-off Sheet

This document entitled Ecological Resources Inventory Report, Bellefonte Extension 138 kV Line Rebuild Project, Lawrence 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

(signature)

**Aaron Kwolek** 

Reviewed by

(signature)

Dan Godec

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Introduction May 19, 2021

#### 1.0 INTRODUCTION

AEP Ohio Transmission Company, Inc. (AEP) is proposing to rebuild approximately 2.8 miles of the existing Bellefonte Extension 138 kV double circuit electric transmission line in Lawrence County, Ohio (Figure 1, Appendix A). The Project area includes the existing right-of-way, a 200-foot survey corridor for a proposed reroute of a portion of the transmission line, and the associated access roads needed to complete construction activities. 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 19 to 21, 2020, December 17 and 18, 2020, and January 21 and 22, 2021. The approximate locations of features located up to 50 feet outside of the Project area were also recorded during the field surveys, where landowner access was permitted. However, no data forms were collected on features that did not extend into the Project area. The approximate locations of these features are shown on the Figure 2 maps in Appendix A as "approximate" wetlands, streams (waterways), open waters, and upland drainage features.

Methods May 19, 2021

#### 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: Eastern Mountains and Piedmont Region (Version 2.0) (USACE 2012). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

#### 2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area, per the protocols outlined in the USACE's Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05) (USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the Federal Register/Vol. 67, No. 10 (USACE 2002) and determined as potential Waters of the U.S. (WOTUS) per "The Navigable Waters Protection Rule" published in the Federal Register/Vol. 85, No. 77 (USACE and USEPA 2020). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency's (OEPA) Headwater Habitat Evaluation Index (HHEI; OEPA 2018) and/or Qualitative Habitat Evaluation Index (QHEI; OEPA 2006). The centerline of each waterway was identified and surveyed using a handheld sub-meter accuracy global positioning system (GPS) unit and mapped with geographic information system (GIS) software. Additionally, the locations of ponds/open water features and upland drainage features (which lacked a continuously defined bed and bank/OHWM) identified within the Project area were also recorded with a sub-meter accuracy GPS unit during the field surveys.

#### 2.3 RARE SPECIES

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

#### 3.0 RESULTS

#### 3.1 TERRESTRIAL HABITAT

Stantec completed field surveys within the Project area on October 19 to 21, 2020, December 17 and 18, 2020, and January 21 and 22, 2021, for threatened and endangered species or their habitats. Figure 3 (Appendix A) shows the habitats and locations of any identified rare, threatened, or endangered species habitat observed within the Project area during the habitat assessment surveys. Representative photographs of the vegetation communities/habitats and land cover types identified within the Project area are included in Appendix C of this report (photo locations are shown on Figures 3, Appendix A). Information regarding the vegetation communities/habitats/land cover types identified within the Project area is provided in Table 1.

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

Vegetation Communities and Land Cover Types within the Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
Old Field	Moderate to Extreme Disturbance/Ruderal Community dominated by non-native herbaceous and woody species, opportunistic invaders, and/or native highly tolerant taxa. Common plant species included Allegheny blackberry (Rubus allegheniensis), multiflora rose (Rosa multiflora), Callery pear (Pyrus calleryana), Johnsongrass (Sorghum halapense), smooth sumac (Rhus glabra), and Queen Anne's lace (Daucus carota).	No	3.19
Early Successional Deciduous Forest	Moderate Disturbance/Natural Community (dominated by native woody and herbaceous species and opportunistic invaders). Common plant species included tuliptree (Liriodendron tulipifera), sweetgum (Liquidambar styraciflua), Chinese privit (Ligustrum sinense), spicebush (Lindera benzoin), Allegheny blackberry, sugar maple (Acer saccharinum), zigzag goldenrod (Solidago flexicaulis), Canada wildrye (Elymus canadensis), and eastern bottlebrush grass (Elymus hystrix).	No	29.32
Mixed Early Successional/Second	Moderate Disturbance/Natural Community (dominated by native woody species, and opportunistic invaders). Common plant species included black walnut (Juglans nigra), hackberry	No	1.42

Vegetation Communities and Land Cover Types within the Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
Growth Deciduous Forest	(Celtis occidentalis), redbud (Cercis canadensis), sugar maple, black cherry (Prunus serotina), spicebush, poison ivy (Toxicodendron radicans), Allegheny blackberry, multiflora rose, giant ragweed (Ambrosia trifida), winter creeper (Euonymus fortunei), and wineberry (Rubus phoenicolasius).		
Pasture	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa). Common plant species included tall fescue (Schedonorus arundinaceus), Kentucky bluegrass (Poa pratensis), red clover (Trifolium pratense), common dandelion (Taraxacum officinale), and white clover (Trifolium repens).	No	3.08
Maintained Lawn	Extreme Disturbance/Ruderal Community (dominated by opportunistic invaders, planted non-native species, and/or native highly tolerant taxa). Common plant species included tall fescue (Schedonorus arundinaceus), narrowleaf plantain (Plantago lanceolata), common dandelion, and white clover.	No	10.11
Industrial Land	Extreme Disturbance/Ruderal Community (little to no vegetation is present in these habitats).	No	2.29
Existing Paved Roadway	Extreme Disturbance/Ruderal Community (little to no vegetation is present in these habitats).	No	3.67
Existing Gravel Roadway	Extreme Disturbance/Ruderal Community (little to no vegetation is present in these habitats).	No	3.15
Existing ATV Trail	Extreme Disturbance/Ruderal Community (little to no vegetation is present in these habitats).	No	3.95
Existing Railroad	Extreme Disturbance/Ruderal Community (little to no vegetation is present in these habitats).	No	0.42
Palustrine Emergent Wetland	Moderate Disturbance/Natural Community (dominated by native herbaceous species). Common plant species included purple loosestrife (Lythrum salicaria), common rush (Juncus effusus), purpleleaf willowherb (Epilobium coloratum), green bulrush (Scirpus	No	0.26

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Vegetation Communities and Land Cover Types within the Project Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Area
	atrovirens), and spotted joe-pye weed (Eutrochium maculatum).		
Palustrine Scrub- Shrub Wetland	Moderate Disturbance/Natural Community (dominated by native shrubs and trees). Common plant species included American elm (Ulmus americana), silver maple (Acer saccharinum), sycamore (Platanus occidentalis), Allegheny blackberry, boxelder (Acer negundo), buttonbush (Cephalanthus occidentalis), sandbar willow (Salix interior), and reed canarygrass (Phalaris arundinacea).	No	0.42
Palustrine Forested Wetland	Moderate Disturbance/Natural Community (dominated by native woody and herbaceous species). Dominant plant species included silver maple (Acer saccharinum), green ash (Fraxinus pennsylvanica), pin oak (Quercus palustris), Canadian wood nettle (Laportea canadensis), creeping Jenny (Lysimachia nummularia), trumpet creeper (Campsis radicans), and devil's beggartick (Bidens frondosa).	No	0.08
		TOTAL	61.36

#### 3.2 WETLANDS

Stantec completed field surveys within the Project area on October 19 to 21, 2020, December 17 and 18, 2020 and January 21 and 22, 2021, for wetlands. As a result of the field surveys, Stantec identified three palustrine emergent (PEM) wetlands, one palustrine scrub-shrub (PSS) wetland, one palustrine forested (PFO) wetland, and one mixed PEM/PSS wetland within the Project area. Figure 2 (Appendix A) shows the locations of the wetlands identified by Stantec within the Project area. Representative photographs of the wetlands identified within the Project area are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A). Completed wetland determination data forms and ORAM data forms are included in Appendix D. Information regarding the Cowardin classification and ORAM categories of wetlands identified within the Project area is provided in Table 2. Four NWI-mapped wetlands are located within the Project area. The disposition of these NWI-mapped wetlands is provided in Table 3.

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Table 2. Summary of Wetland Resources Found within the Bellefonte Extension 138 kV Line Rebuild Project Area, Lawrence County, Ohio

	Loc	ation				C	RAM		Existing	Proposed		Proposed	l Impacts
Wetland ID	Latitude	Longitude	Isolated?	Habitat Type <sup>1</sup>	Delineated Area (acre)	Score	Category	Nearest Structure Number (Existing/Proposed)	Structure Number in Wetland	Structure Number in Wetland	Structure Installation Method	Temporary Matting Area (acre)	Permanent Impact Area (acre)
Wetland 1	38.499014	-82.648285	No	PSS <sup>3</sup>	0.39	30	1 or 2 Gray Zone	13/14	None	N/A	N/A	TBD⁵	TBD⁵
Wetland 2	38.499486	-82.649087	No	PSS <sup>3</sup>	0.03	11	11 1 -	13/14	None	N/A	N/A	TBD⁵	TBD⁵
welland 2	38.499849	-82.649669	No	PEM <sup>2</sup>	0.07	11		13/14	None	N/A	N/A	TBD⁵	TBD⁵
Wetland 3	38.498557	-82.647889	No	PFO <sup>4</sup>	0.08	45	2	13/14	None	N/A	N/A	TBD⁵	TBD⁵
Wetland 4	38.490939	-82.623648	No	PEM <sup>2</sup>	0.01	22	1	6/6	None	N/A	N/A	TBD⁵	TBD⁵
Wetland 5	38.49888	-82.650818	No	PEM <sup>2</sup>	0.02	9	1	None/15	None	N/A	N/A	TBD⁵	TBD <sup>5</sup>
Wetland 6	38.497509	-82.654277	No	PEM <sup>2</sup>	0.16	13	1	None/16	None	N/A	N/A	TBD⁵	TBD⁵
		TOTAL	(4074	۵)	0.76							0.000	0.000

<sup>1</sup>Wetland classification is based on Cowardin et al. (1979).

<sup>&</sup>lt;sup>2</sup>PEM = Palustrine Emergent Wetland

<sup>&</sup>lt;sup>3</sup>PSS= Palustrine Scrub-Shrub Wetland

<sup>&</sup>lt;sup>4</sup>PFO=Palustrine Forested Wetland

<sup>5</sup>TBD - To be determined. Impact information and/or structure installation method is unknown at this time.

Table 3. Summary of NWI Disposition within the Bellefonte Extension 138 kV Line Rebuild Project Area, Lawrence County, Ohio

NWI Code	NWI Description	Figure 2 Page Number	Related Field Inventoried Resource(s)	Comments
PUBGx	Palustrine unconsolidated bottom, intermittently exposed, excavated	7	SP10	Wetland determination sample point (SP10) was evaluated within the mapped NWI feature. This sample point documented upland maintained lawn habitat with disturbed soils. The wetland determination data form for SP10 is available in Appendix D and representative photographs are available in Appendix C.
PFO1A	Palustrine Forested, broad-leaved deciduous, temporarily flooded	9	Wetland 1, Wetland 3	Wetland 1 (PSS) and Wetland 3 (PFO) were delineated within the mapped NWI feature. ORAM data forms and associated wetland determination data forms for Wetland 1 and Wetland 3 are available in Appendix D. Representative photographs are available in Appendix C.
R2UBH	Riverine, lower perennial, unconsolidated bottom, permanently flooded	10	Stream 2 (Ice Creek)	Stream 2 (Ice Creek) was delineated and evaluated within the Project area. The QHEI data form for Stream 2 is available in Appendix D and representative photographs are available in Appendix C.
R2UBH	Riverine, lower perennial, unconsolidated bottom, permanently flooded	10	Stream 1 (Ohio River)	Stream 1 (Ohio River) was delineated and evaluated within the Project area. The QHEI data form for Stream 1 is available in Appendix D and representative photographs are available in Appendix C.

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#### 3.3 STREAMS

Stantec completed field surveys within the Project area on October 19 to 21, 2020, December 17 and 18, 2020 and January 21 and 22, 2021, for waterways (streams). As a result of the field surveys, Stantec identified four perennial streams, nine intermittent streams, and five ephemeral streams within the Project area. Figure 2 (Appendix A) shows the locations of streams identified by Stantec within the Project area. Representative photographs of the streams are included in Appendix C of this report (photo locations are shown on Figure 2, Appendix A). Completed QHEI and HHEI data forms for the identified streams are included in Appendix D. Information regarding the identified streams is provided in Table 4.

Table 4. Summary of Stream Resources Found within the Bellefonte Extension 138 kV Line Rebuild Project Area, Lawrence County, Ohio

	Loc	Location Field Evaluation  Delineated Bankfull OHWM				aluation	Ohio EPA			oosed pacts				
Stream ID	Latitude	Longitude	Stream Type	Stream Name <sup>1</sup>	Length (feet)	Width (feet)	Width (feet)	Method	Score <sup>2,3</sup>	Category/Rating/ OAC Use Designation <sup>2.3,4</sup>	401 Eligibility	Stream Crossing?	Fill Type	Length (LF)
Stream 1	38.497107	-82.656103	Perennial	Ohio River	295	1,400	1,300	Chapter 3745-1	N/A	Warmwater Habitat	Eligible	No	None	0
Stream 2	38.499785	-82.653666	Perennial	lce Creek	634	135	115	Chapter 3745-1	N/A	Warmwater Habitat	Eligible	No	None	0
Stream 3	38.499135	-82.648492	Intermittent	UNT to Ice Creek	265	8.0	5.0	HHEI	60	Modified Small Drainage Warmwater Stream	Eligible	No	None	0
Stream 4	38.497175	-82.644593	Perennial	UNT to Ice Creek	253	11.0	8.0	HHEI	71	Modified Small Drainage Warmwater Stream	Eligible	No	None	0
Stream 5	38.495193	-82.635004	Intermittent	UNT to Ice Creek	198	8.0	4.0	HHEI	66	Spring Water	Eligible	No	None	0
Stream 6	38.495181	-82.634868	Intermittent	UNT to Ice Creek	34	8.0	4.0	HHEI	48	Small Drainage Warmwater Stream	Eligible	No	None	0
Stream 7	38.496204	-82.638342	Ephemeral	UNT to Ice Creek	48	3.0	1.25	HHEI	30	Modified Ephemeral Stream	Eligible	No	None	0
Stream 8	38.496577	-82.639142	Ephemeral	UNT to Ice Creek	118	2.75	1.0	HHEI	12	Ephemeral Stream	Eligible	No	None	0
Stream 9	38.491309	-82.613644	Ephemeral	UNT to Little Ice Creek	109	2.75	1.0	HHEI	18	Ephemeral Stream	Eligible	No	None	0
Stream 10	38.490779	-82.615643	Perennial	Little Ice Creek	117	50	40	Chapter 3745-1	N/A	Warmwater Habitat	Eligible	No	None	0

	Loca	ation	Stream Type		Delineated	Bankfull	OHWM		Field Eva	aluation	Ohio EPA			oosed oacts
Stream ID	Latitude	Longitude		Stream Name <sup>1</sup>	Length (feet)	Width (feet)	Width (feet)	Method	Score <sup>2,3</sup>	Category/Rating/ OAC Use Designation <sup>2.3,4</sup>	401 Eligibility	Stream Crossing?	Fill Type	Length (LF)
Stream 11	38.490598	-82.619984	Ephemeral	UNT to Little Ice Creek	148	1.5	0.75	HHEI	13	Modified Ephemeral Stream	Eligible	No	None	0
Stream 12	38.490487	-82.620528	Ephemeral	UNT to Little Ice Creek	61	1.5	0.75	HHEI	13	Modified Ephemeral Stream	Eligible	No	None	0
Stream 13	38.491139	-82.62362	Intermittent	UNT to Little Ice Creek	119	4.0	2.0	HHEI	44	Modified Small Drainage Warmwater Stream	Eligible	No	None	0
Stream 14	38.491468	-82.625327	Intermittent	UNT to Little Ice Creek	107	3.75	1.5	HHEI	27	Ephemeral Stream	Eligible	No	None	0
Stream 15	38.494051	-82.63126	Intermittent	UNT to Little Ice Creek	101	6.0	2.5	HHEI	56	Modified Small Drainage Warmwater Stream	Eligible	No	None	0
Stream 16	38.494843	-82.633326	Intermittent	UNT to Ice Creek	111	3.75	1.5	HHEI	29	Ephemeral Stream	Eligible	No	None	0
Stream 17	38.492008	-82.614764	Intermittent	UNT to Ohio River	575	4	2.5	HHEI	42	Modified Small Drainage Warmwater Stream	Eligible	No	None	0
Stream 18	38.498786	-82.651382	Intermittent	UNT to Little Ice Creek	6	4	3.0	HHEI	42	Modified Small Drainage Warmwater Stream	Eligible	No	None	0
	amod Tributor	Total:			3,299									0

<sup>&</sup>lt;sup>1</sup>UNT = Unnamed Tributary

<sup>&</sup>lt;sup>2</sup>Based on the designated use evaluation presented in the Field Methods for Evaluating Primary Headwater Habitat Streams in Ohio, Version 4.0 (OEPA 2018). <sup>3</sup>Based on the designated use evaluation presented in the Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (OEPA 2006).

<sup>&</sup>lt;sup>4</sup>Based on the Ohio Administrative Code (OAC) 3745-1-16.

Results May 19, 2021

#### 3.4 OPEN WATERS

No open waters (ponds or lakes) were delineated within the Project area during the field surveys completed on October 19 to 21, 2020, December 17 and 18, 2020, and January 21 and 22, 2021.

### 3.5 RARE, THREATENED, OR ENDANGERED SPECIES HABITAT

Table 5. Summary of Potential Federally Listed and Ohio State-Listed Species within the Bellefonte Extension 138 kV Line Rebuild Project Area, Lawrence County, Ohio

Common Name/Scientific Name	Listed   Listed   Typical Habitat		Typical Habitat	Habitat Observed	Agency Comment (Appendix B)	Potential Impacts and Avoidance Dates
				Reptiles		
Timber Rattlesnake/ Crotalus horridus horridus	E	SC	In the central Midwest, optimum habitat is a high, dry ridge with oak-hickory forest interspersed with open areas. Hibernacula are typically located in a rocky area where underground crevices provide retreats for overwintering, such as a fissure in a ledge, a crevice between ledge and ground, and fallen rock associated or unassociated with cliffs (NatureServe 2021).	Potentially suitable habitat was observed within the Project area within the early successional deciduous forest habitats east of Structure 11 (Figure 3, Appendix A).	ODNR - The Project is within the range of the timber rattlesnake. The timber rattlesnake is a woodland species, utilizing dry slopes and rocky outcrops. In addition to using wooded areas, the timber rattlesnake utilizes sunlit gaps in the canopy for basking and deep rock crevices for overwintering. Due to the location, this project is not likely to impact this species.  USFWS – Due to the project type, size, and location, we do not anticipate adverse effects to this species.	Potentially suitable habitat was observed within the Project area. However, due to the location of the Project and the mobility of the species, impacts to this species are not anticipated.
	•			Fishes		
Goldeye/Hiodon alosoides	E	N/A	This species is found in large rivers and are tolerant of turbid waters with clay silt substrates. This species does not inhabit streams with industrial chemical pollutants. They can often be found below dams where current is swift (ODNR 2020).	Suitable habitat was observed within the Project area within the Ohio River (Figure 2, Appendix A).	ODNR – The Project area is within the range of the goldeye. The ODNR recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact this species or other aquatic species.  USFWS – No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Shoal Chub/Macrhybopsis hyostoma	E	N/A	Shoal chub are found in large rivers with continuously murky waters over fine gravel or sandy substrates. They spend most of their time near the bottom and remain in water greater than four feet deep during the day. In Ohio, this species was historically found in the Ohio River and the lower portion of some of its larger tributaries, particularly the Muskingum River. However, it has not been found in Ohio waters since the early 1980's (ODNR 2020).	Suitable habitat was observed within the Project area within the Ohio River (Figure 2, Appendix A).	ODNR - The Project area is within the range of the shoal chub. The ODNR recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact this species or other aquatic species.  USFWS - No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
River Darter/Percina shumardi	Т	N/A	Large rivers and lower portions of tributaries; deep chutes and riffles where current is swift and bottom is coarse gravel or rock (NatureServe 2021).	Potentially suitable habitat was observed within the Project area within the Ohio River and Ice Creek (Figure 2, Appendix A).	ODNR - The Project area is within the range of the river darter. The Natural Heritage Database has records of the river darter within one mile of the Project area. The ODNR recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no inwater work is proposed, this project is not likely to impact this species or other aquatic species.  USFWS - No comments received.	No suitable habitat was observed within the Project area and no in-water work is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.

Common Name/Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comment (Appendix B)	Potential Impacts and Avoidance Dates
Channel Darter/Persina copelandi	T	N/A	Channel darters are found in areas of large, coarse sand or fine gravel bars in large rivers, or along the shore of Lake Erie. It is likely the Lake Erie population no longer exists. They are still found in the Ohio River and the lower portion of the Scioto, Muskingum, and Hocking Rivers. There may also be a small remnant population in the lower Maumee and Sandusky Rivers in the Lake Erie drainage (ODNR 2020).	Suitable habitat was observed within the Project area within the Ohio River (Figure 2, Appendix A).	ODNR - The Project area is within the range of the channel darter. The Natural Heritage Database has records of the channel darter within one mile of the Project area. The ODNR recommends no in-water work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact this species or other aquatic species.  USFWS - No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore impacts to this species are not anticipated and avoidance dates are not applicable.
Shovelnose Sturgeon/ Scaphirhynchus platorynchus	E	N/A	This species prefers the deep channels and embayments of large, turbid rivers. Shovelnose sturgeon typically occur in areas with strong current with a substrate of sand mixed with gravel or mud (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River and Ice Creek (Figure 2, Appendix A).	ODNR - The Project area is within the range of the shovelnose sturgeon. The ODNR recommends no inwater work in perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed, this project is not likely to impact this species or other aquatic species.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
	1			Mussels		
Butterfly/Ellipsaria lineolata	E	N/A	This mussel is found in large rivers and stretches with pronounced current and substrate of coarse sand and gravel. It can also be found in deep impoundment areas (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River (Figure 2, Appendix A).	ODNR -The Natural Heritage Database has records of the butterfly within one mile of the Project area. The Natural Heritage Database has records of the butterfly within one mile of the Project area. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, ODNR recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol.  USFWS - No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP, therefore impacts to this species are not anticipated and avoidance dates are not applicable.
Elephant-ear/Elliptio crassidens crassidens	E	N/A	This mussel is found in muddy sand, sand, and rocky substrates in moderate currents. In some areas, it is common in large creeks to rivers with moderate to swift currents primarily on sand and limestone or rock substrates (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River and Ice Creek (Figure 2, Appendix A).	ODNR - The Project area is within the range of the elephant-ear mussel. The Natural Heritage Database has records of the elephant-ear within one mile of the Project area. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.

Common Name/Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comment (Appendix B)	Potential Impacts and Avoidance Dates
					recommends a professional malacologist conduct a mussel survey in the Project area.	
					USFWS – No comments received.	
Snuffbox/Epioblasma triquetra	E	E	Occurs in medium-sized streams to large rivers, generally on mud, rocky, gravel, or sand substrates in flowing water. Often deeply buried in substrate and overlooked by collectors (NatureServe 2021). Snuffbox is commonly found buried in the substrate. 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).	Suitable habitat was observed within the Project area within the Ohio River and Ice Creek (Figure 2, Appendix A).	ODNR - The Project area is within the range of the snuffbox mussel. This project must not have an impact on freshwater native mussels at the project site. If inwater work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area. USFWS - Due to the project type, size, and location, we do not anticipate adverse effects to this species.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Washboard/Megalonaias nervosa	E	N/A	Occurs in large rivers, typically in main channel or overbank areas of reservoirs. It is found in areas of slow current with muddy to coarse gravel substrates and water can be up to 50 feet deep (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River (Figure 2, Appendix A).	ODNR - The Project area is within the range of the washboard mussel. The Natural Heritage Database has records of the washboard within one mile of the Project area. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area.  USFWS - No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Ohio Pigtoe/Pleurobema cordatum	E	N/A	Occurs in medium to large rivers directly above riffles of gravel, cobble, and boulder, but occasionally in muddy or sandy or gravel habitats at great depths (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River and Ice Creek (Figure 2, Appendix A).	ODNR - The Project area is within the range of the Ohio pigtoe mussel. The Natural Heritage Database has records of the Ohio pigtoe within one mile of the Project area. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area. USFWS - No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Pink Mucket/Lampsilis abrupta	E	E	Large rivers in habitats ranging from silt to boulders, but apparently more commonly from gravel and cobble. Collected from shallow and	Suitable habitat was observed within the Project area within	ODNR - The Project area is within the range of the pink mucket mussel. This project must not have an impact on freshwater native mussels at the project site. If in-water	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are

Common Name/Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comment (Appendix B)	Potential Impacts and Avoidance Dates
			deep water with current velocity ranging from zero to swift, but never standing pools of water (NatureServe 2021).	the Ohio River (Figure 2, Appendix A).	work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area. USFWS - Due to the project type, size, and location, we do not anticipate adverse effects to this species.	not anticipated and avoidance dates are not applicable.
Threehorn Wartyback/ Obliquaria reflexa	Т	N/A	Habitat includes large rivers with moderately strong current and stable substrate of gravel, sand, and mud (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River (Figure 2, Appendix A).	ODNR - The Project area is within the range of the threehorn wartyback mussel. The Natural Heritage Database has records of the threehorn wartyback within one mile of the Project area. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area. USFWS - No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Black Sandshell/Ligumia recta	T	N/A	Typically found in medium-sized to large rivers in locations with strong current and substrates of coarse sand and gravel with cobbles in water depths from several inches to six feet or more (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River and Ice Creek (Figure 2, Appendix A).	ODNR – The Project area is within the range of the black sandshell mussel. The Natural Heritage Database has records of the black sandshell within one mile of the Project area. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area  USFWS – No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Fanshell/Cyprogenia stegaria	E	E	Medium to large streams and rivers with moderate to strong current in coarse sand and gravel and depth ranging from shallow to deep (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River and Ice Creek (Figure 2, Appendix A).	ODNR - The Project area is within the range of the fanshell mussel. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area.  USFWS - Due to the project type, size, and location, we do not anticipate adverse effects to this species.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.

Common Name/Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comment (Appendix B)	Potential Impacts and Avoidance Dates
Sheepnose/Plethobasus cyphyus	E	E	Usually found in large rivers in current on mud, sand, or gravel bottoms at depth of 1-2 meters or more (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River and Ice Creek (Figure 2, Appendix A).	ODNR - The Project area is within the range of the sheepnose mussel. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area.  USFWS - Due to the project type, size, and location, we do not anticipate adverse effects to this species.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Little Spectaclecase/Villosa lienosa	E	N/A	Typically inhabits small creeks to medium-sized rivers, usually along the banks in slower currents (NatureServe 2021).	Suitable habitat was observed within the Project area within Ice Creek and Little Ice Creek (Figure 2, Appendix A).	ODNR - The Project area is within the range of the little spectaclecase mussel. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area. USFWS - No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Ebonyshell/Reginaia ebenus	E	N/A	Inhabits large rivers and prefers swift water and stable sand or gravel shoals. Coarse sand and gravel substrate provide the most suitable habitat. It can occur at depths of 10-15 feet with current associated (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River (Figure 2, Appendix A).	ODNR - The Project area is within the range of the ebonyshell mussel. The Natural Heritage Database has records of the ebonyshell within one mile of the Project area. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area. USFWS - No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
Wartyback/Cyclonias nodulata	E	N/A	The wartyback occurs in medium to large rivers with a substrate of sand and mud. The species is typically found at depths of five to six meters (Parmalee and Bogan 1998).	Suitable habitat was observed within the Project area within the Ohio River and Ice Creek (Figure 2, Appendix A).	ODNR - The Project area is within the range of the wartyback mussel. The Natural Heritage Database has records of the wartyback within one mile of the Project area. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area. USFWS - No comments received.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.

Common Name/Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comment (Appendix B)	Potential Impacts and Avoidance Dates
Monkeyface/Quadrula metanevra	E	N/A	The monkeyface prefers medium to large rivers. This species typically occurs in areas with a depth greater than two meters and a stable substrate of gravel or mixed sand and gravel (NatureServe 2021).	Suitable habitat was observed within the Project area within the Ohio River (Figure 2, Appendix A).	ODNR – The Project area is within the range of the monkeyface mussel. This project must not have an impact on freshwater native mussels at the project site. If in-water work is planned in any stream that meets the Ohio Mussel Survey Protocol criteria, ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, ODNR recommends a professional malacologist conduct a mussel survey in the Project area.	Suitable habitat was observed within the Project area. However, no in-water work in perennial streams is proposed by AEP. Therefore, impacts to this species are not anticipated and avoidance dates are not applicable.
					USFWS – No comments received.	
Indiana Bat/Myotis sodalis	E	E	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007a; USFWS 2020b). 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).		ODNR – 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 suitable trees must be cut during the summer months, the ODNR recommends a net survey be conducted between June 1 and August 15, prior to any cutting. Net surveys should incorporate four net nights per kilometer for linear projects. If no tree removal is proposed, this project is not likely to impact this species.  USFWS – All projects in the State of Ohio lie within range of the Indiana bat. Should the proposed project site contain trees ≥3 inches diameter at breast height (dbh), we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats.	No potential hibernacula were observed. However, suitable summer roosting and foraging habitat was observed within mixed early successional/second growth deciduous forest habitat areas within the Project area. It is anticipated that AEP will conduct any necessary tree clearing between October 1 and March 31. Therefore, impacts to this species are not anticipated. If any summer tree clearing is determined necessary, AEP will proceed in accordance with agency requirements.
Northern Long-eared Bat/ Myotis septentrionalis	T	Т	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 2020a). 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).	Suitable summer roosting and foraging habitat was observed within mixed early successional/second growth deciduous forest habitat areas within the Project area (Figure 3, Appendix A).	ODNR - No comments received.  USFWS - All projects in the State of Ohio lie within range of the northern long-eared bat. Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between	No potential hibernacula were observed. However, suitable summer roosting and foraging habitat was observed within mixed early successional/second growth deciduous forest habitat areas within the Project area. It is anticipated that AEP will conduct any necessary tree clearing between October 1 and March 31. Therefore, impacts to this species are not anticipated. If any summer tree clearing is determined necessary, AEP will proceed in accordance with agency requirements.

Common Name/Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comment (Appendix B)	Potential Impacts and Avoidance Dates
					October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to northern long-eared bats. Incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule.	
Little Brown Bat/Myotis Iucifugus	E	N/A	The little brown bat is found throughout Ohio. This species seems to prefer to forage over water but also forages among trees in rather open areas (Harvey et al. 1999). During summer, it typically inhabits buildings, attics, church belfries, barns and outbuildings, and occasionally more natural habitats such as sloughing bark of a dead tree. During summer, two types of roosts are utilized: day roosts and night roosts. Day roosts are the maternity colony roost, while little brown bats often roost in other areas where they rest and congregate to digest their food in between foraging bouts. In Ohio, this species typically utilizes caves and mines as hibernacula, although at least one hibernaculum was found to be located in an attic of an old building (Brack et al. 2010).	Suitable summer roosting and foraging habitat was observed within mixed early successional/second growth deciduous forest habitat areas within the Project area. Additionally, suitable foraging habitat was observed along larger streams within the Project area (Figure 3, Appendix A).	ODNR - No comments received.  USFWS - All projects in the State of Ohio lie within range of the northern long-eared bat. Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to northern long-eared bats. Incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule.	No potential hibernacula were observed. However, suitable summer roosting and foraging habitat was observed within mixed early successional/second growth deciduous forest habitat areas and along larger streams within the Project area. It is anticipated that AEP will conduct any necessary tree clearing between October 1 and March 31. Therefore, impacts to this species are not anticipated. If any summer tree clearing is determined necessary, AEP will proceed in accordance with agency requirements.
Tri-colored Bat/Perimyotis subflavus	E	N/A	The tricolored bat is found throughout Ohio. This species has been found to forage above and within a variety of habitats, including woodlands, agricultural fields, grassy areas, and over streamside vegetation (Sparks et al. 2011). Maternity colonies have often been found within clusters of dead leaves, hanging in trees. Maternity colonies have also been found in or on buildings. Little is known of male tri-colored bats in summer, but it is thought that they are probably solitary and spend their days in similar situations, as well as crevices, caves and mines (Brack et al. 2010). In Ohio, this species typically utilizes caves and mines as hibernacula, utilizing a variety of situations, including very cold areas near cave entrances to deeper passages that seem to be too warm for other species of bats (Brack et al. 2010).	growth deciduous forest habitat areas within the Project area. Additionally, suitable foraging habitat was observed along larger streams within the Project area (Figure 3, Appendix A).	ODNR – No comments received. USFWS – No comments received.	No potential hibernacula were observed. However, suitable summer roosting and foraging habitat was observed within mixed early successional/second growth deciduous forest habitat areas and along larger streams within the Project area. It is anticipated that AEP will conduct any necessary tree clearing between October 1 and March 31. Therefore, impacts to this species are not anticipated. If any summer tree clearing is determined necessary, AEP will proceed in accordance with agency requirements.
				Plants  Potentially suitable		Potentially suitable habitat was observed within the
Running Buffalo Clover/Trifolium stoloniferum	E	E	Mesic habitats with partial to filtered sunlight including woodlands and mowed lawn (USFWS 2007b).	habitat was observed throughout the Project area along ATV trails and bottom lands surrounding	ODNR - No comments received.  USFWS - Due to the project type, size, and location, we do not anticipate adverse effects to this species.	Project area along existing ATV trails and bottom land surrounding intermittent and perennial streams. However, no running buffalo clover individuals were observed and no impacts to the potentially suitable habitat are anticipated as part of the Project. If the suitable habitat areas will need to be impacted during construction, a pre-construction flowering season survey may be

Common Name/Scientific Name	State Listed Status <sup>1,2</sup>	Federally Listed Status <sup>1,3</sup>	Typical Habitat	Habitat Observed	Agency Comment (Appendix B)	Potential Impacts and Avoidance Dates
				intermittent and perennial streams (Figure 3, Appendix A).		necessary to confirm presence/absence and to accurately determine if the Project could have potential impacts on this species.
Maypop/Passiflora incarnata	Т	N/A	This species is typically found in dry soils in usually open situations: open woods, thickets, rocky open riverbanks; also, fields, roadsides, and railroad banks (ODNR 2020).	A limited amount of potentially suitable habitat is present within the Project area in the form of old field (thickets), railroad banks, and roadsides.	ODNR – The Natural Heritage Database has records of the maypop within one mile of the Project area. USFWS – No comments received.	A limited amount of potentially suitable habitat is present within the Project area in the form of old field (thickets), railroad banks, and roadsides. Therefore, impacts to this species are possible but not anticipated.
Gray Beard-Tongue/ Penstemon canescens	Т	N/A	This species is typically found in dry, open fields and roadsides (ODNR 2020).	A limited amount of potentially suitable habitat is present within the Project area in the form of old field and roadside habitats.	ODNR - The Natural Heritage Database has records of the gray beard-tongue within one mile of the Project area. USFWS - No comments received.	A limited amount of potentially suitable habitat is present within the Project area in the form of old field and roadside habitats. Therefore, impacts to this species are possible but not anticipated.
Blue Scorpion-Weed/ Phacelia covillei	E	N/A	This species is typically found in sun or semi- shade in a variety of moist or well-drained woods and thickets (ODNR 2020).	Potentially suitable habitat is present within the Project area in the form of old field, early successional forest, and mixed second growth/early successional deciduous forest.	ODNR – The Natural Heritage Database has records of the blue scorpion-weed within one mile of the Project area. USFWS – No comments received.	Potentially suitable habitat is present within the Project area in the form of old field, early successional forest, and mixed second growth/early successional deciduous forest. Therefore, impacts to this species are possible but not anticipated.
	I.			Amphibian	S	
Eastern Spadefoot/ Scaphiopus holbrookii	Е	N/A	Eastern spadefoots occur in areas of sandy, gravelly, or soft, light soils in wooded or unwooded terrain. In Ohio, it is found only in areas of sandy soils that are associated with river valleys in the southeastern portion of the State. Breeding habitats are located within these areas and may include flooded agricultural fields or other water-holding depressions (NatureServe 2021; ODNR 2020).	was observed within	ODNR - The Project is within the range of the eastern spadefoot. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, and the type of habitat present at the project site, and within the vicinity of the Project area, this project is not likely to impact this species.  USFWS - No comments received.	No suitable habitat was observed within the Project. Therefore, impacts to this species are not anticipated.
Green Salamander/ Aneides aeneus	E	N/A	The green salamander typically utilizes the damp crevices of shaded rock outcroppings and ledges, Also, occurs less frequently nearby under the loose bark of fallen trees, and the damp ground under fallen trees (NatureServe 2021).	habitat was	ODNR - The Project area is within the range of the green salamander. This species inhabits the deep moist cracks of rock cliffs. Due to the location, and the type of work proposed, this project is not likely to impact this species.  USFWS - No comments received.	Potentially suitable habitat was present within the Project area (moist crevices in sandstone rock faces), however, no impacts to this type of habitat are anticipated.  Therefore, impacts to this species are not anticipated.

Results May 19, 2021

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Mud Salamander Pseudotriton montanus  No suitable habitat was observed within the Project area.  No suitable habitat was observed within the Project area.  No suitable habitat was observed within the Project area.  No suitable habitat was observed within the Project area.  No suitable habitat was observed within the Project area.					observed along		
		T	N/A	swamps along slow streams; backwater ponds and marshes created by beaver activity	was observed within	salamander. Due to the location, and the type of work proposed, this project is not likely to impact this species.	No suitable habitat was observed within the Project area. Therefore, impacts to this species are not anticipated.

<sup>2</sup>According to Ohio Department of Natural Resources, State Listed Wildlife and Plant Species by County (ODNR 2021). <sup>3</sup>According to USFWS (2018).

Conclusions and Recommendations May 19, 2021

#### 4.0 CONCLUSIONS AND RECOMMENDATIONS

Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species within the Project area on October 19 to 21, 2020, December 17 and 18, 2020, and January 21 and 22, 2021. During the field surveys, three PEM wetlands totaling approximately 0.19 acres, one PSS wetland totaling approximately 0.39 acres, one PFO wetland totaling approximately 0.08 acres, and one mixed PEM/PSS wetland totaling approximately 0.10 acres were identified within the Project area. Additionally, four perennial streams totaling approximately 1,299 linear feet in length, nine intermittent streams totaling approximately 1,516 linear feet in length, and five ephemeral streams totaling approximately 484 linear feet in length were delineated within the Project area. Of the four perennial streams identified within the Project area, three are named USGS streams (Ohio River, Ice Creek, and Little Ice Creek). See Table 2 and Table 4 for more information regarding wetlands and streams identified within the Project area, respectively. 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. Data forms for the identified features are provided in Appendix D and representative photographs are provided in Appendix C.

An ODNR Ohio Natural Heritage Program data request and environmental review request letter was sent to the ODNR Office of Real Estate on November 21, 2019. The ODNR Office of Real Estate Response dated January 8, 2020 (Appendix B), stated that the Project area is within a one mile radius of the following species: maypop (state-listed threatened); gray beard-tongue (state-listed blue scorpion-weed (state-listed endangered); wartyback (state-listed endangered); butterfly (state-listed endangered); elephant-ear (state-listed endangered); black sandshell (state-listed threatened); washboard (state-listed endangered); threehorn wartyback (state-listed threatened); Ohio pigtoe (state-listed endangered); ebonyshell (state-listed endangered); channel darter (state-listed threatened); river darter (state-listed threatened); green salamander (state-listed endangered); and Little Ice Creek Conservation Site, a state-listed high quality natural area. No work on the Project is proposed in perennial streams. Therefore, no impacts to the state-listed threatened and endangered mussel species known to occur within a one mile radius of the Project area are anticipated. Potentially suitable habitat for maypop, gray beard-tongue, and blue scorpion-weed is present within the Project area, as described in Table 5. The Little Ice Creek Conservation Site is located approximately 3,000 feet southeast of the easternmost portion of the Project area and therefore will not be impacted.

Additionally, the ODNR stated 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. If suitable roost trees must be cut during the summer months, the

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ODNR 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 0.5 kilometer for linear projects.

According to the ODNR, the state-listed endangered northern long-eared bat occurs statewide in Ohio. The Project area contains potentially suitable roosting habitat for this species and the Indiana bat (mixed early successional/second growth deciduous forest), but no potentially suitable hibernacula for these species were observed within the Project area. AEP intends to conduct any required tree clearing between October 1 and March 31. Therefore, no impacts to these species are anticipated.

The ODNR states that the Project is within the range of the following state-listed and federally listed threatened and endangered mussel species: the sheepnose, fanshell, pink mucket, snuffbox, ebonyshell, elephant-ear, washboard, monkeyface, little spectaclecase, Ohio piqtoe, threehorn wartyback, and the black sandshell. Furthermore, the ODNR stated that this project must not have an impact on freshwater native mussels at the Project site and this ruling applies to both listed and non-listed mussel species. Per the Ohio mussel Survey Protocol (ODNR and USFWS 2020), all Group 2, 3, and 4 streams require a mussel survey if impacts to them will be required for construction of the Project. Additionally, Group 1 streams and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (ODNR and USFWS 2020) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the ODNR recommends the applicant provide information to indicate no mussel impacts will occur. If impacts are unavoidable, a professional malacologist is recommended to conduct a mussel survey in the Project area. If mussels that cannot be avoided are found in the Project area, those mussels are to be collected and relocated by a professional malacologist and done in accordance with the Ohio Mussel Survey Protocol. Since no in-water work is proposed by AEP in a perennial stream, impacts to the above listed mussel species are not anticipated.

The ODNR also states that the Project is within the range of the following state-listed endangered and threatened fish species: the goldeneye, shoal chub, shovelnose sturgeon, channel darter, and river darter. The ODNR recommends no in-water work in the Ohio River from March 15 through June 30, and in other perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the ODNR stated that this project is not likely to impact these or other aquatic species. Because no in-water work is proposed by AEP in a perennial stream, impacts to the above listed fish species are not anticipated.

Additionally, The ODNR states that the project is within the range of the timber rattlesnake, a state endangered species and federal species of concern. However, due to the location of the project, and/or the type of work proposed, the ODNR stated that this project is not likely to impact this species.

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The Project is also within range of the following state-listed endangered and threatened amphibian species: the green salamander, eastern spadefoot, and the mud salamander. However, the ODNR stated that due to the location, type of work proposed, and/or the type of habitat present at the Project site and within the vicinity of the Project area, this Project is not likely to impact these species.

A technical assistance request letter was also submitted to the USFWS on November 18, 2019. The USFWS response letter dated December 5, 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 recommends that impacts to wetlands and other water resources be avoided or minimized to the fullest extent possible, and that best management practices be utilized to minimize erosion and sedimentation.

According to the USFWS response, all projects in the State of Ohio lie within range of the federally endangered Indiana bat and the federally threatened northern long-eared bat. In Ohio, presence of these species is assumed wherever suitable habitat occurs unless a presence/probable absence survey has been performed to document probable absence. No hibernacula for these species were observed within the Project area. However, the Project area does contain potentially suitable summer roosting and foraging habitat for the Indiana bat and northern long-eared bat. Potentially suitable summer roosting habitat observed within the Project area was limited to mixed early successional/second growth deciduous forest habitat. The USFWS response letter stated that, should the Project site contain trees ≥3 inches dbh, the USFWS recommends trees be saved whenever possible. If any caves or abandoned mines may be disturbed, further coordination is requested. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, the USFWS recommends that removal of trees ≥3 inches dbh only occur between October 1 and March 31 in order to avoid adverse effects to these species. If implementation of seasonal tree clearing is not possible, the USFWS recommends summer presence/probable absence surveys be conducted between June 1 and August 15. There are no potential bat hibernacula within the Project area and AEP intends to conduct any necessary tree clearing between October 1 and March 31. Therefore, impacts to the northern long eared bat or Indiana bat are not anticipated.

Additionally, the USFWS stated that they do not anticipate adverse effects to any other federally endangered, threatened, proposed or candidate species due to the project type, size, and location.

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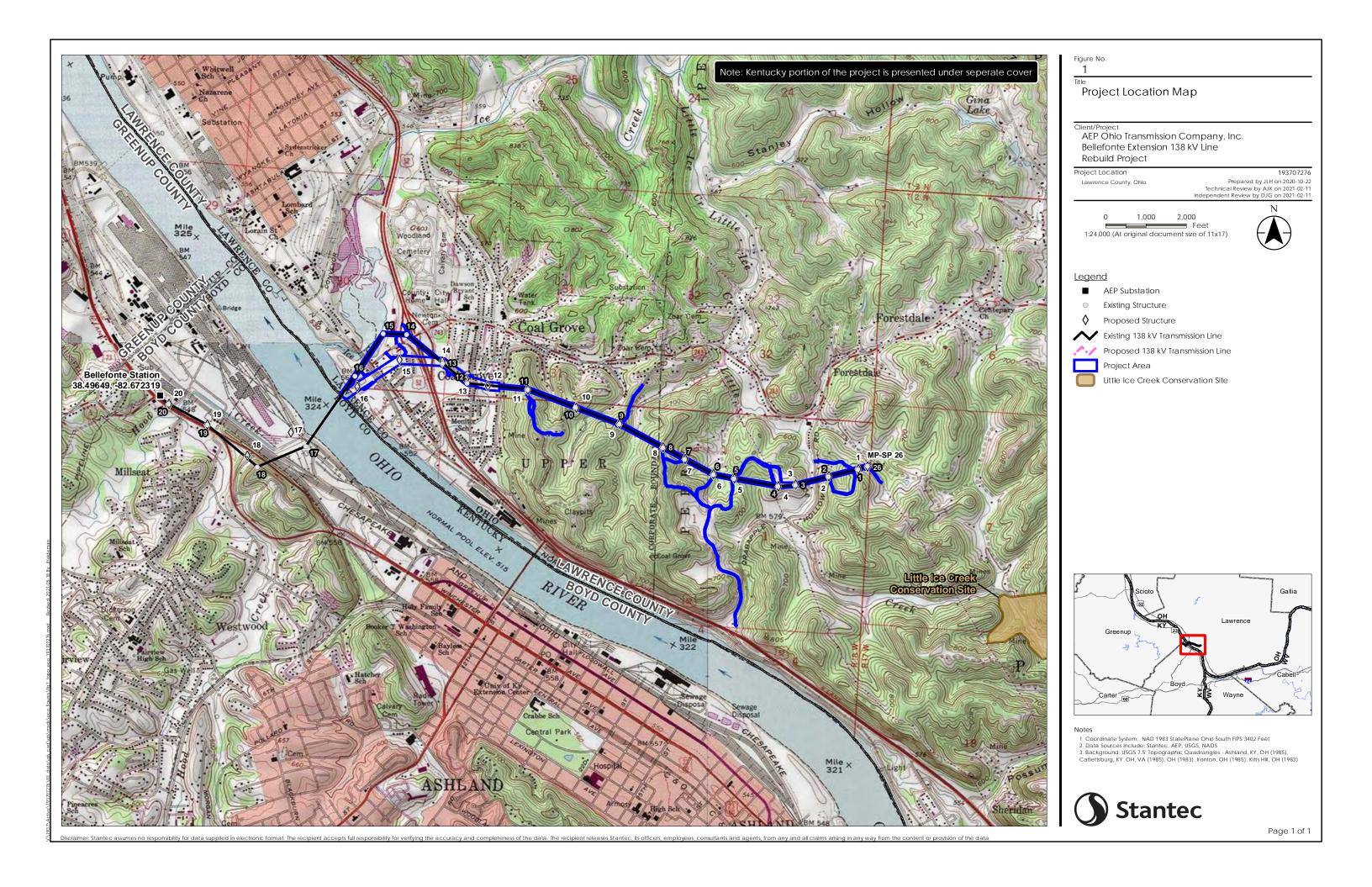
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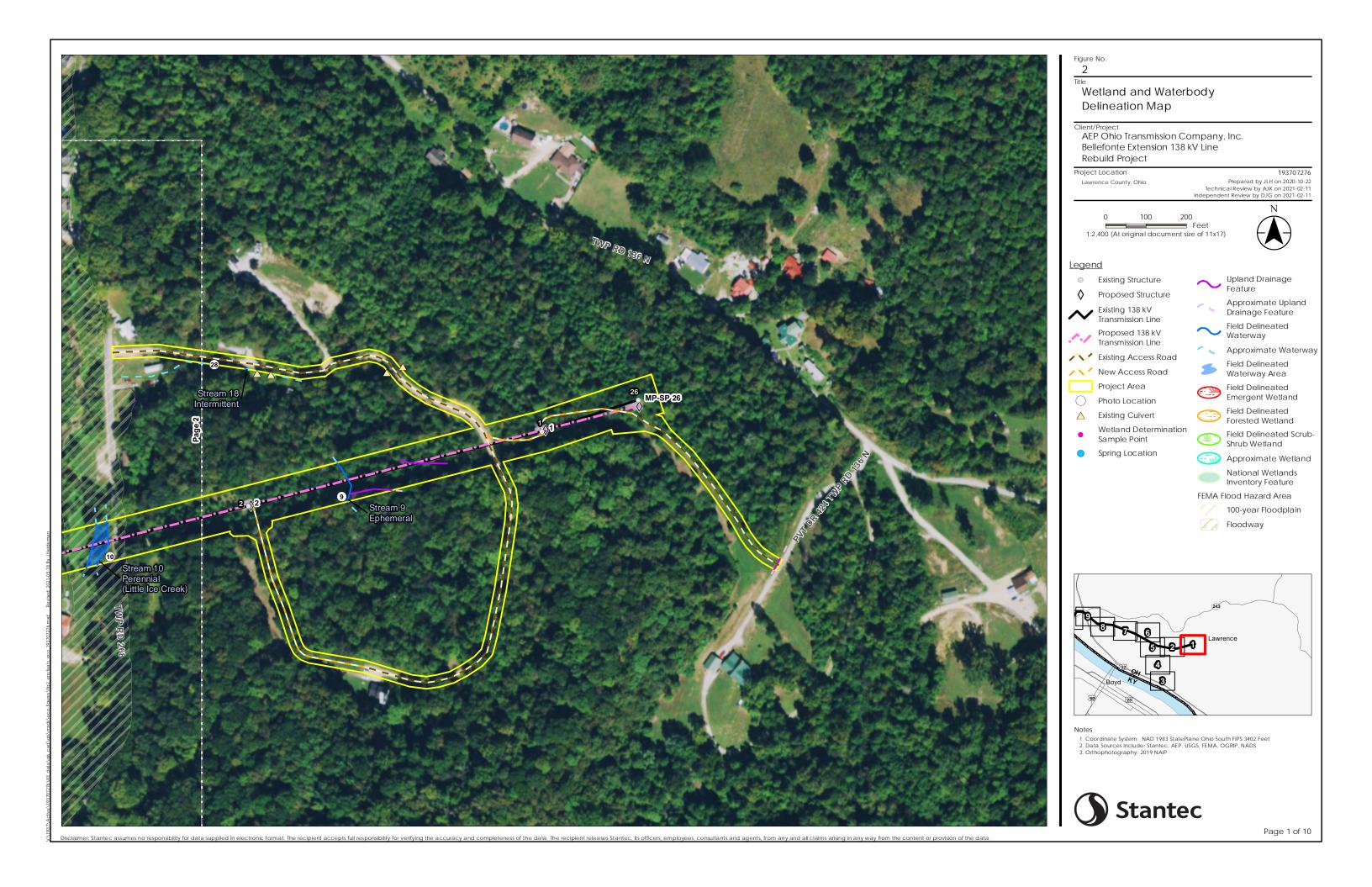
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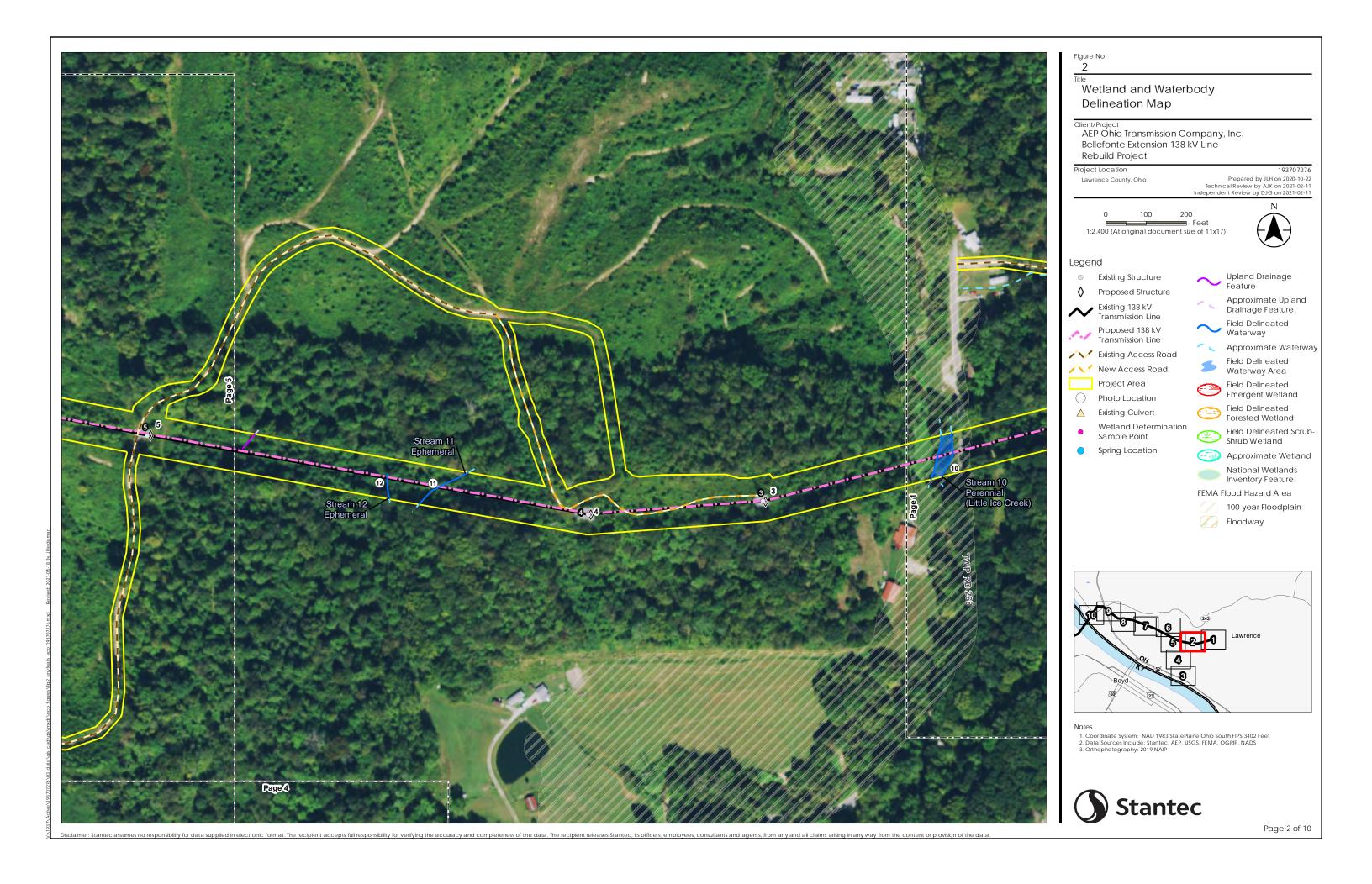
# Appendix A FIGURES

### A.1 FIGURE 1 - PROJECT LOCATION MAP

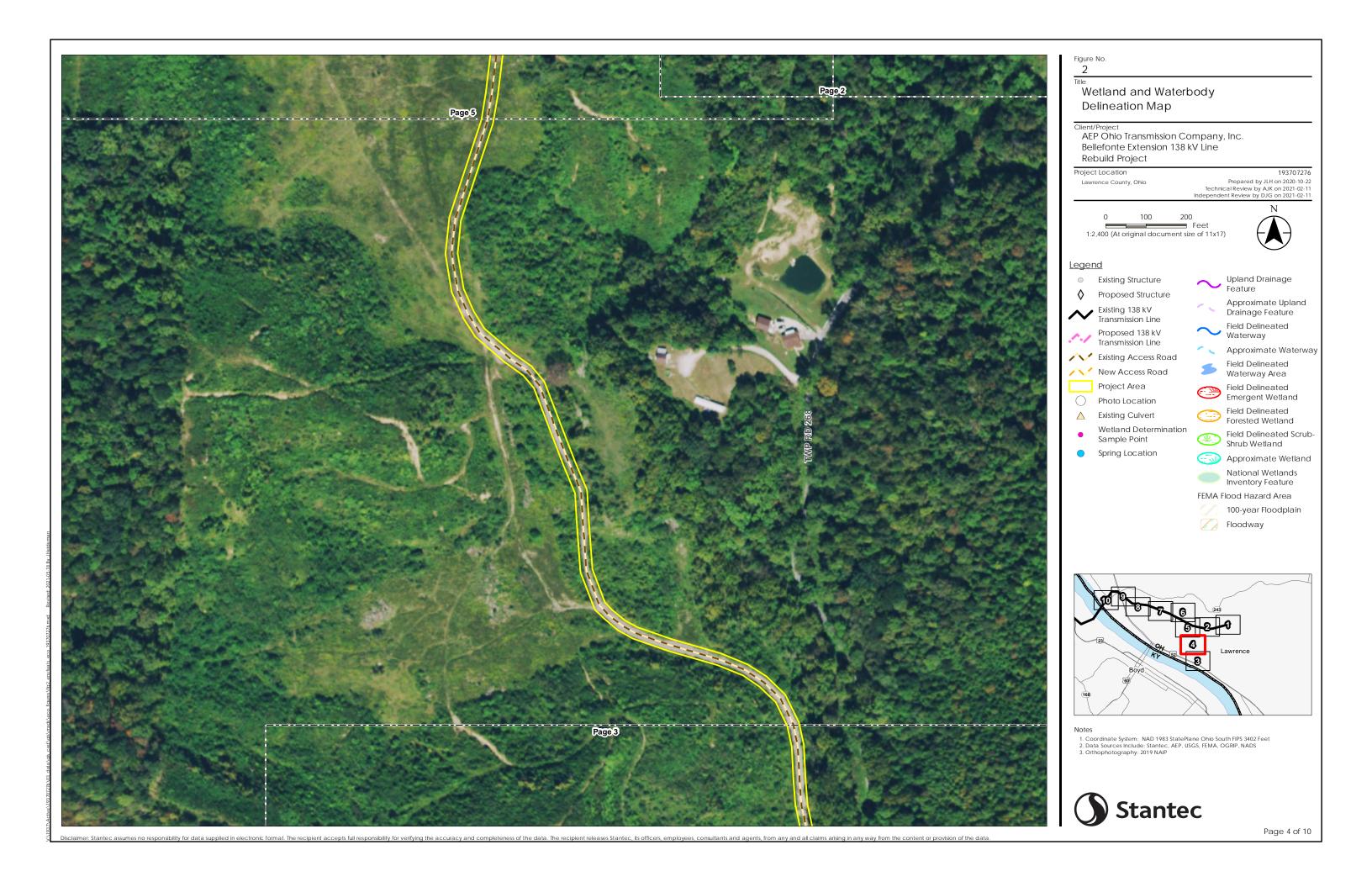


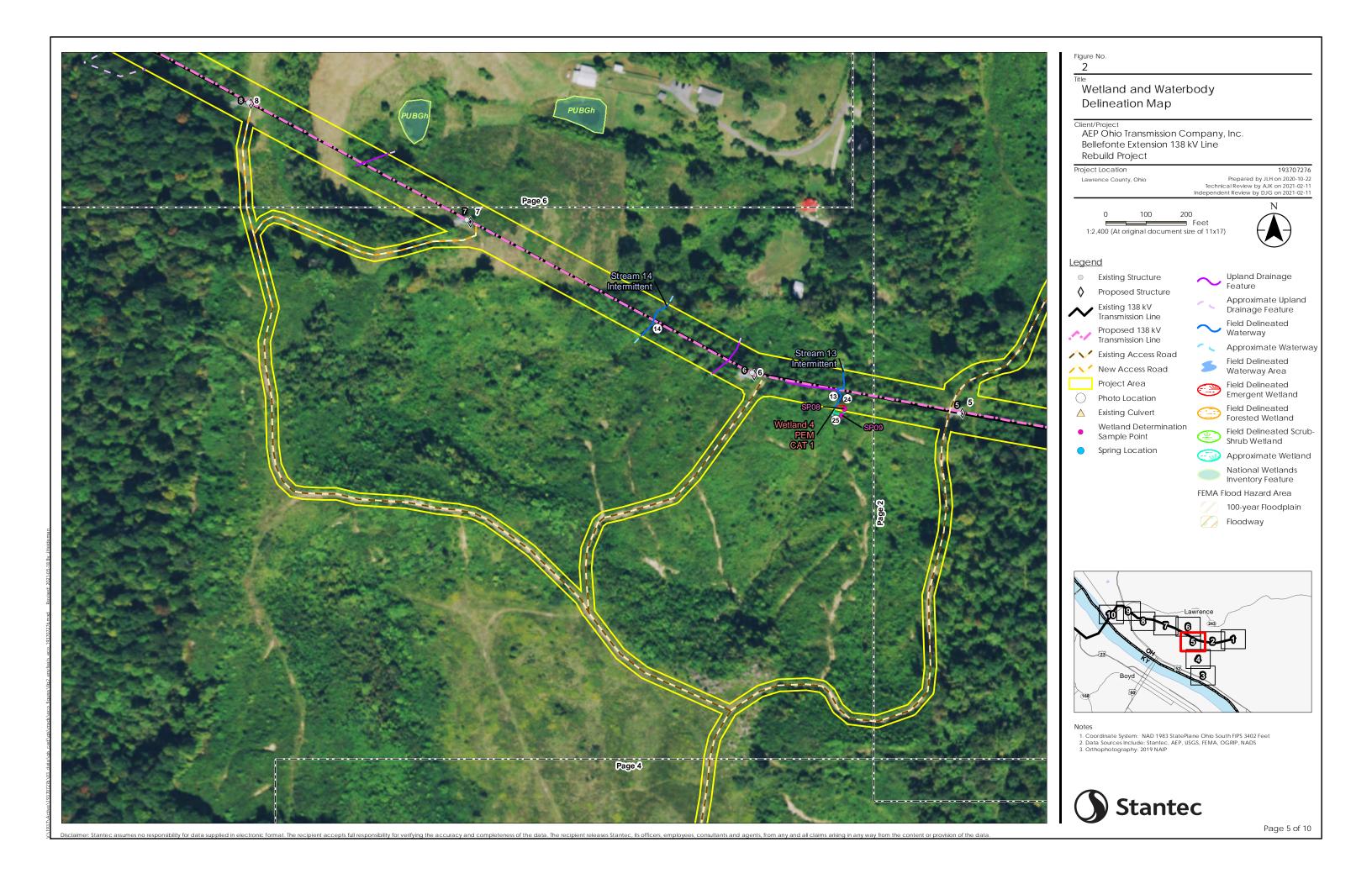
### A.2 FIGURE 2 – WETLAND AND WATERBODY DELINEATION MAP



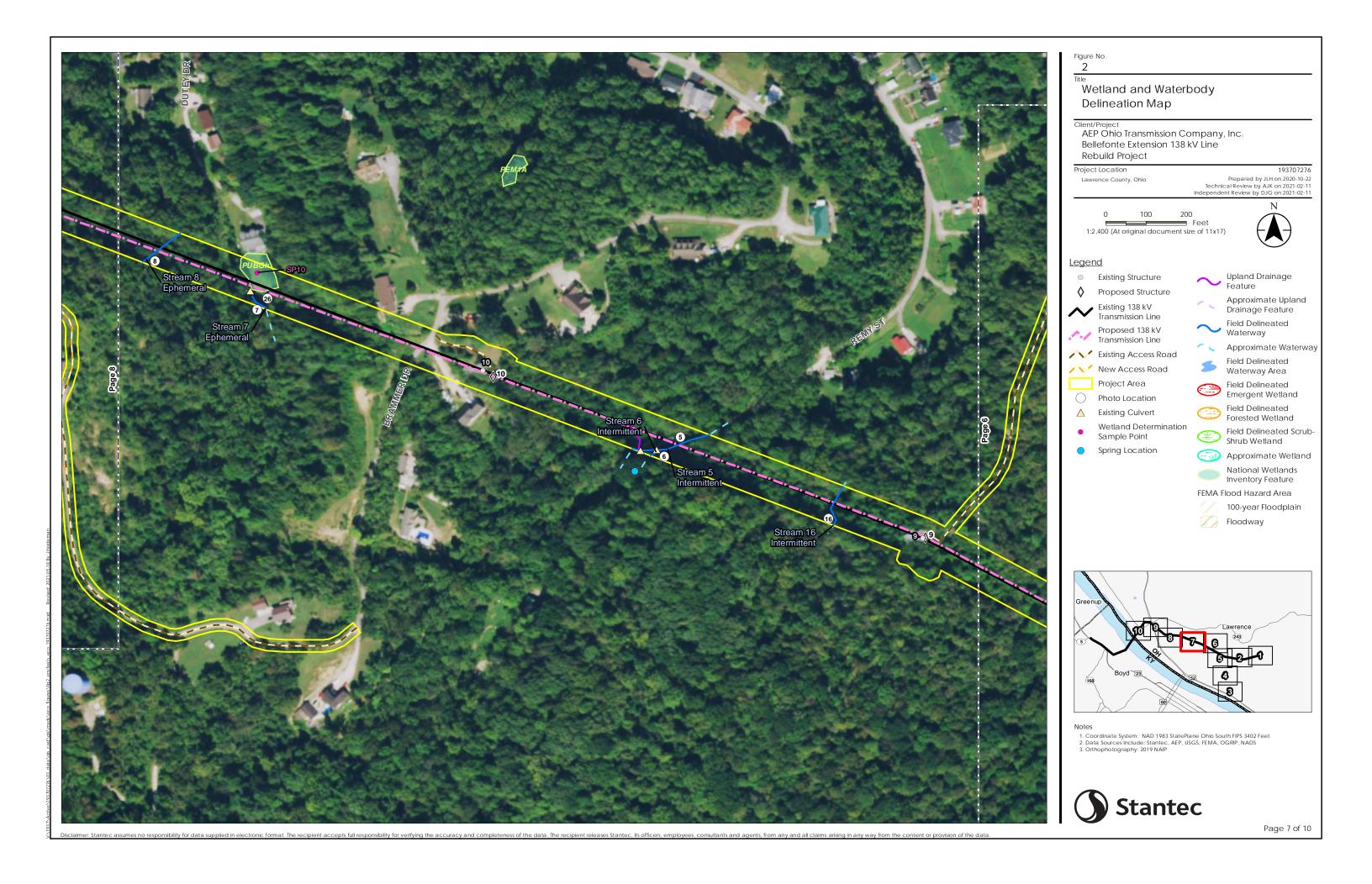


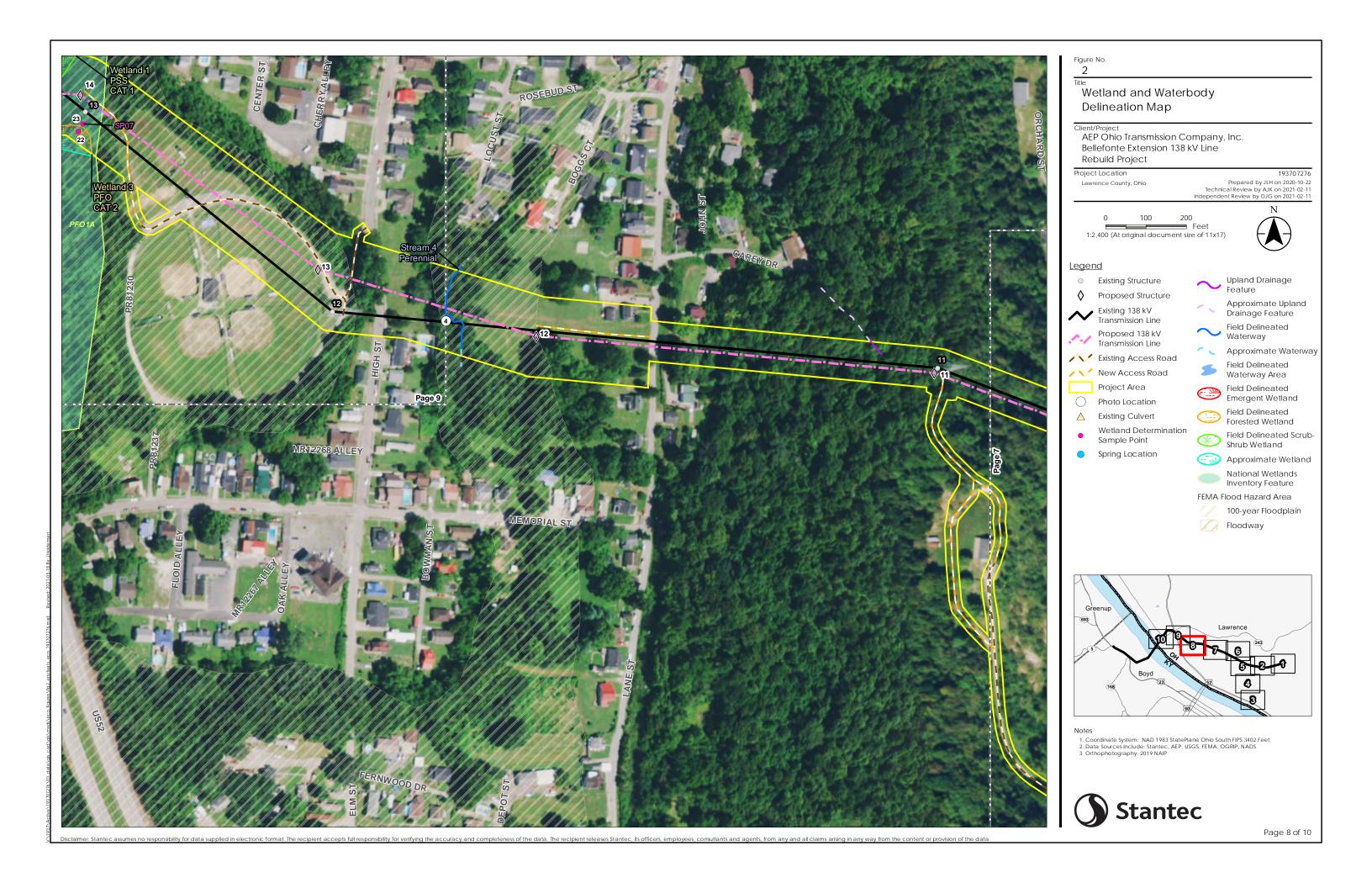


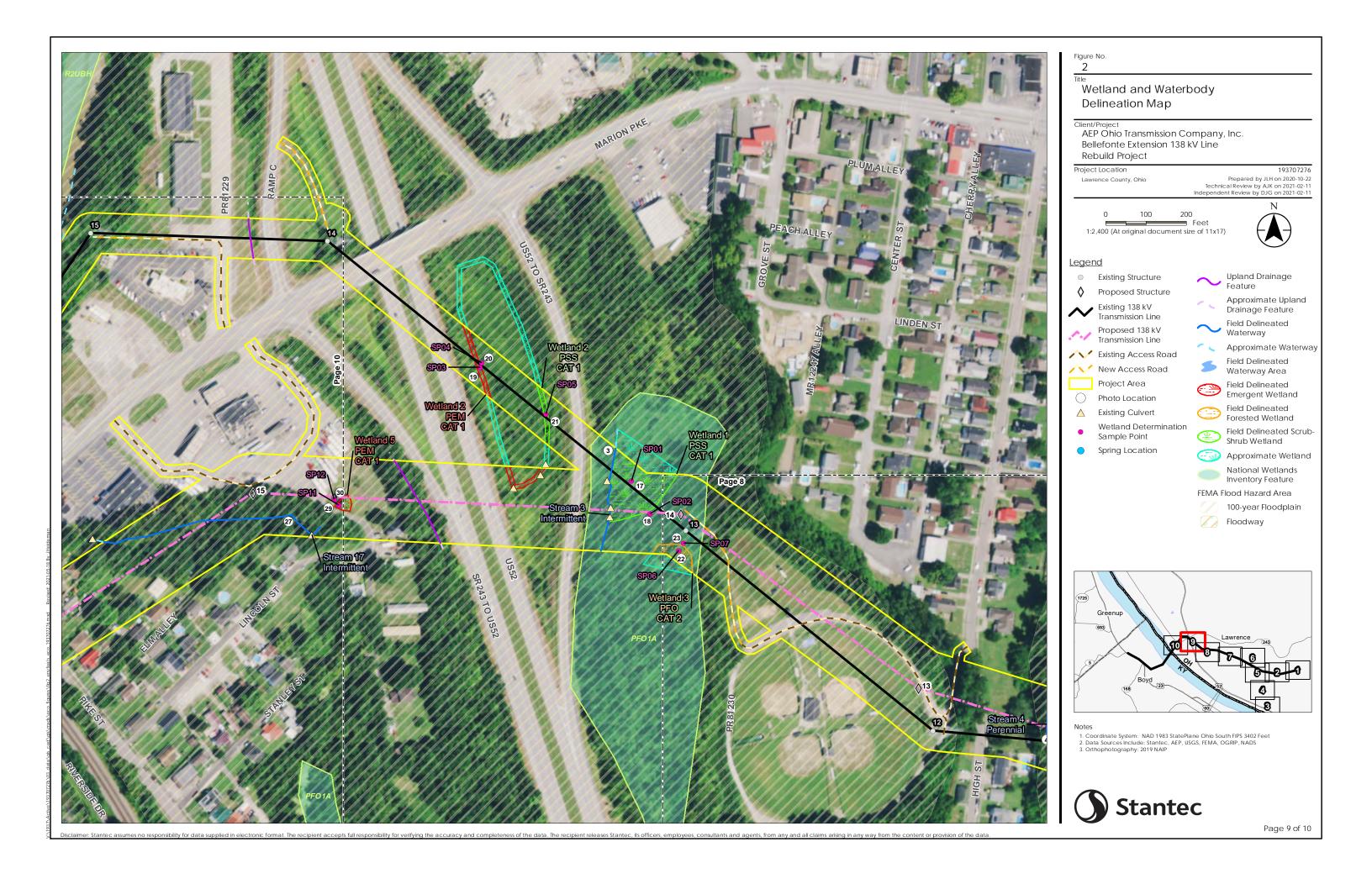


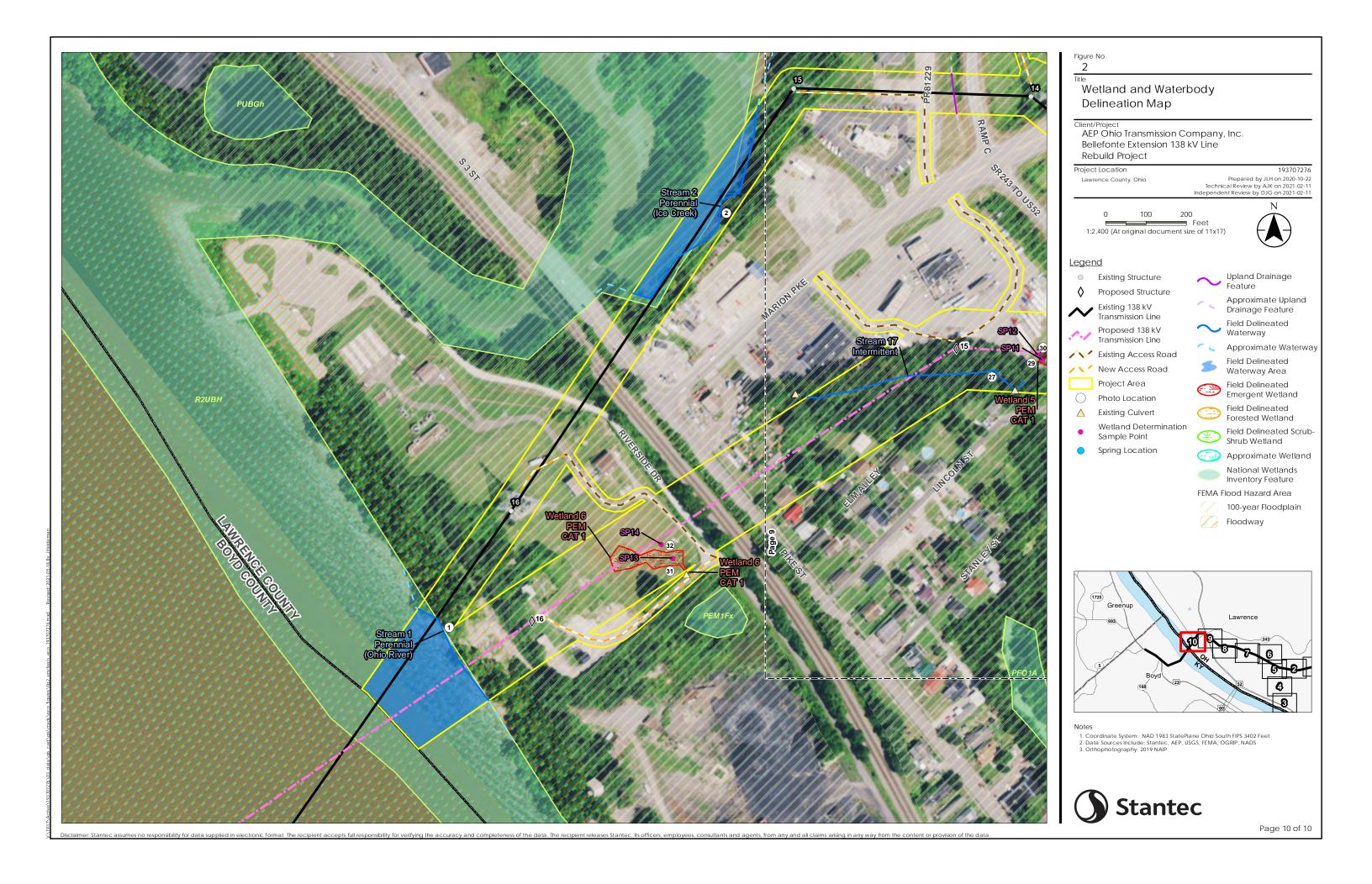




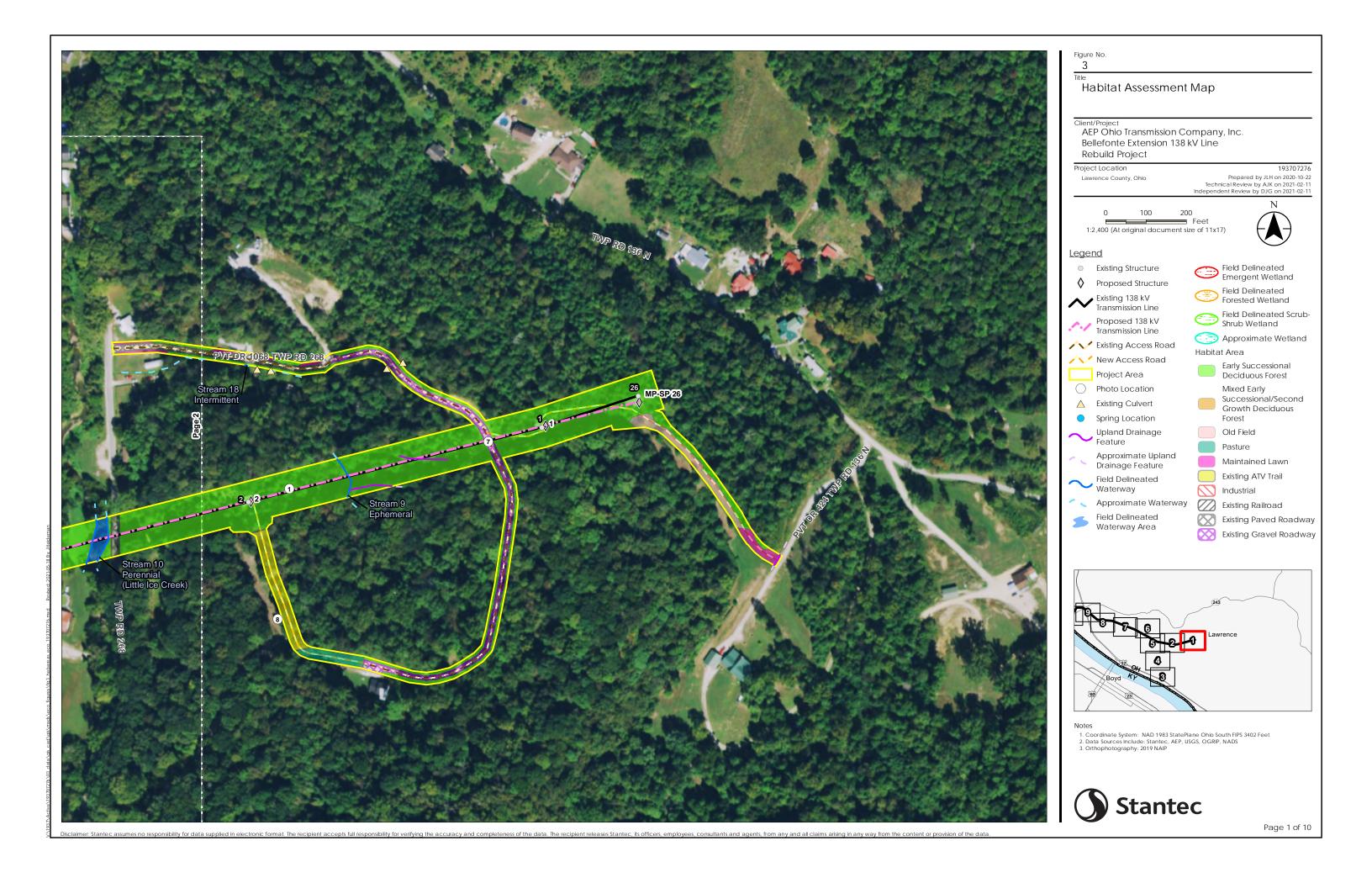


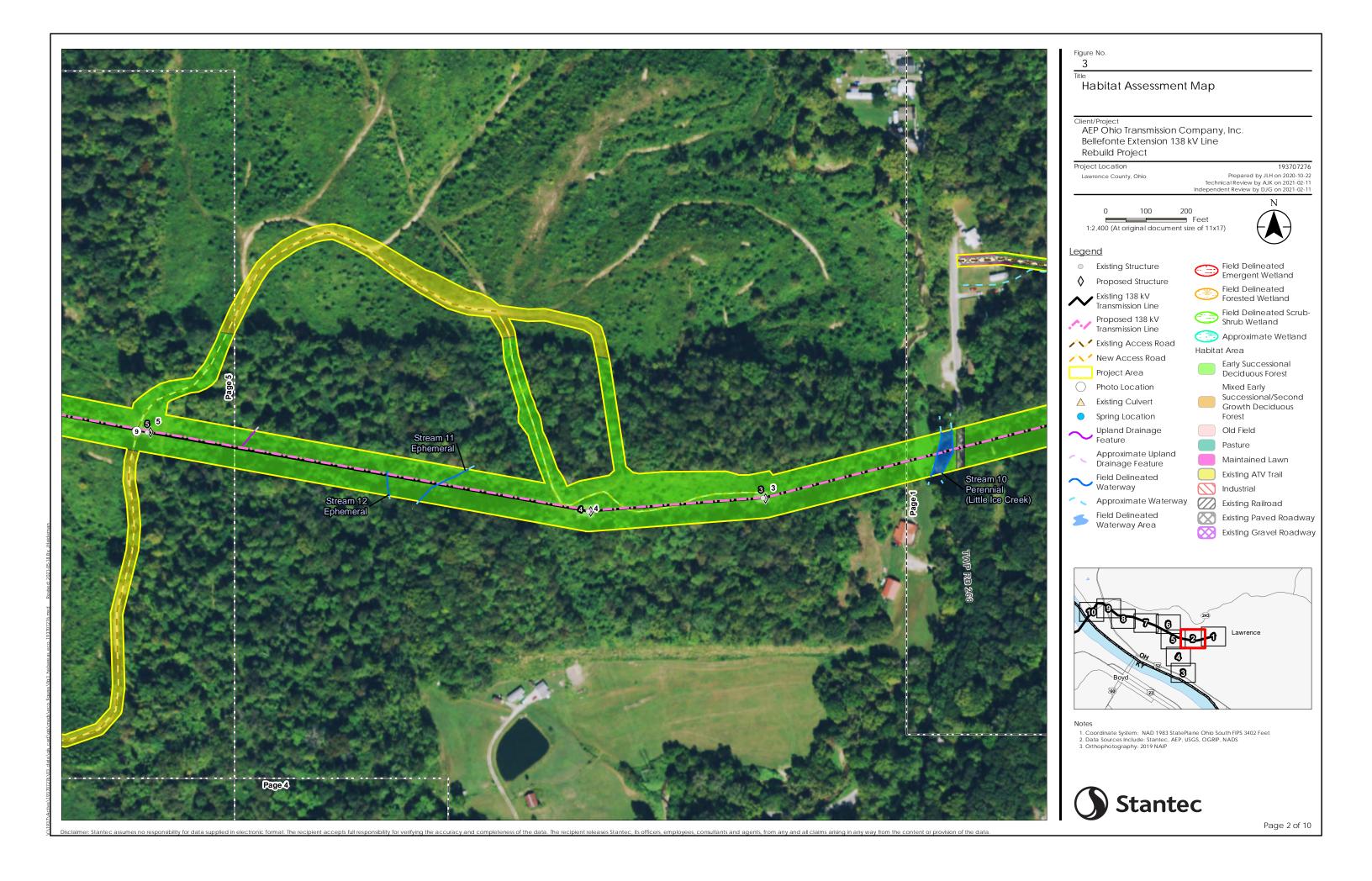




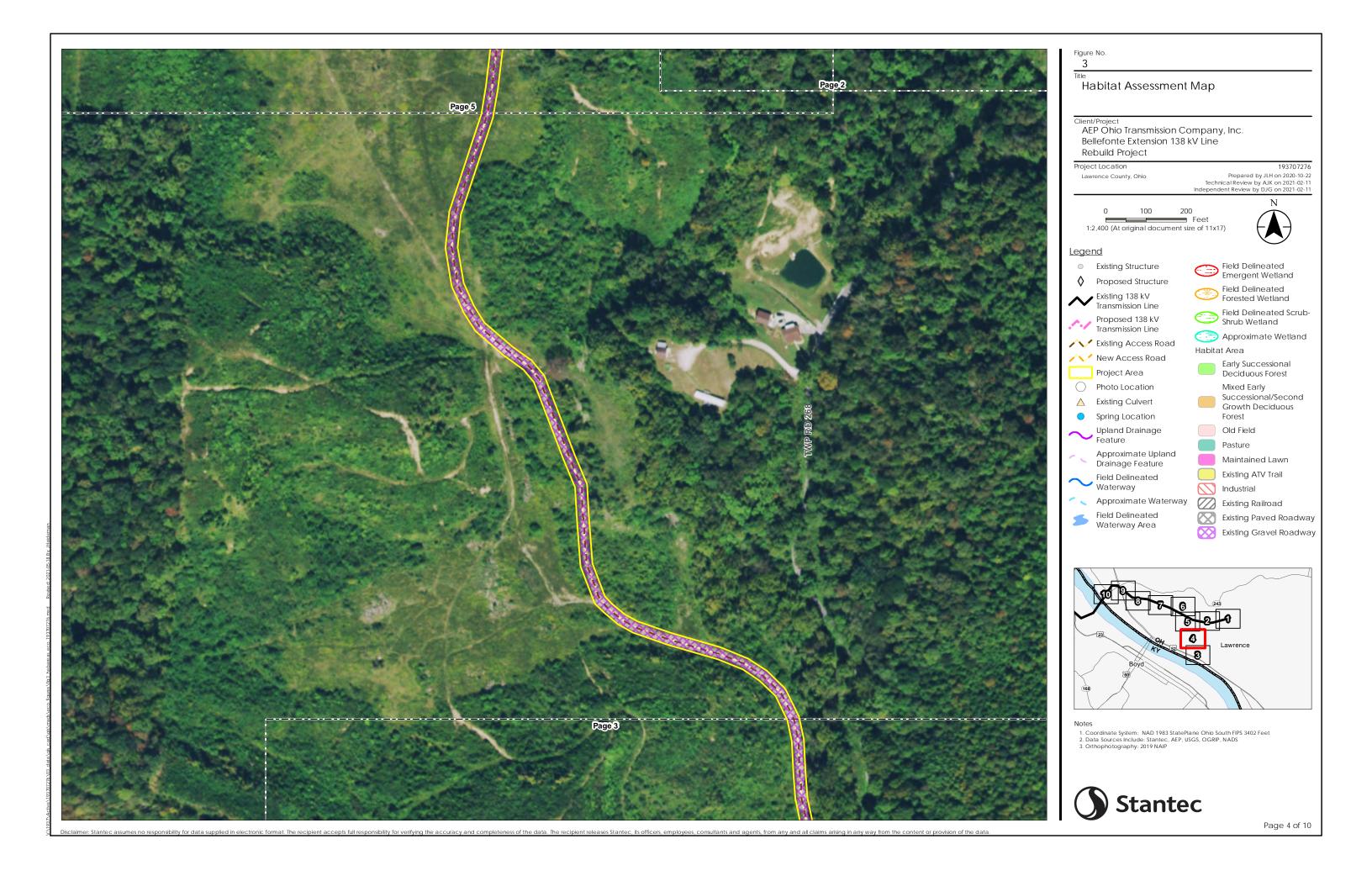


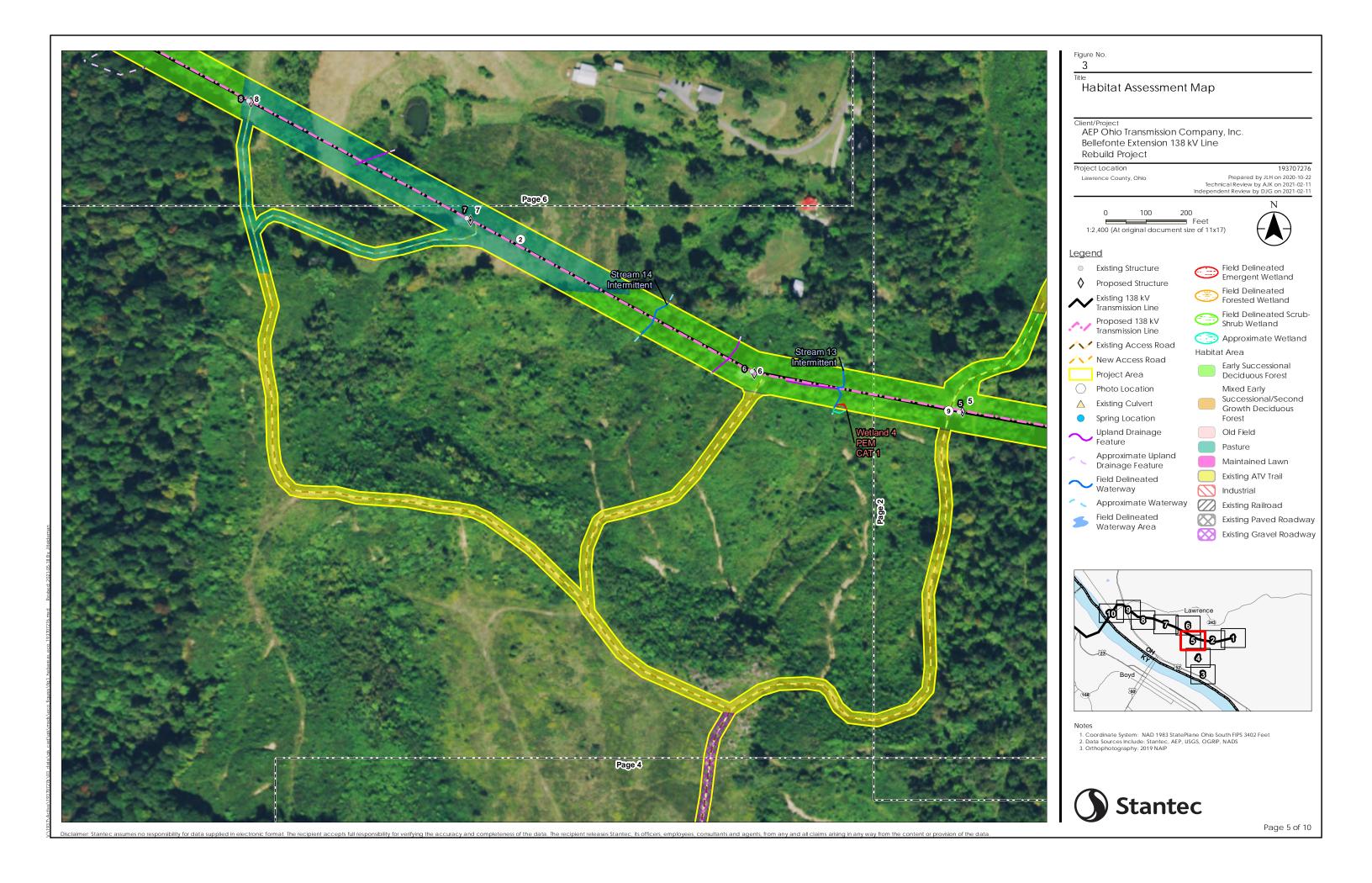
### A.3 FIGURE 3 – HABITAT ASSESSMENT MAP



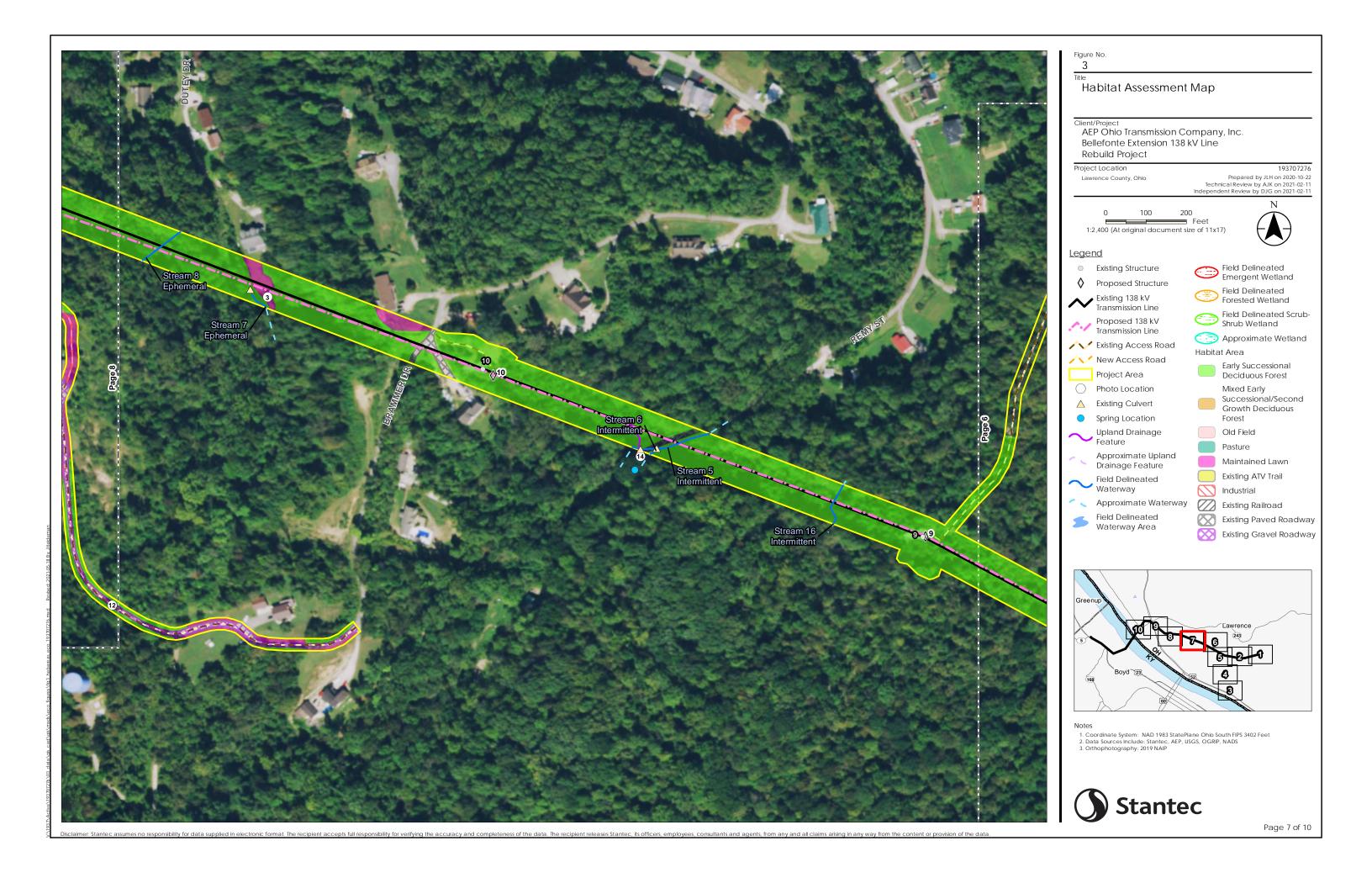


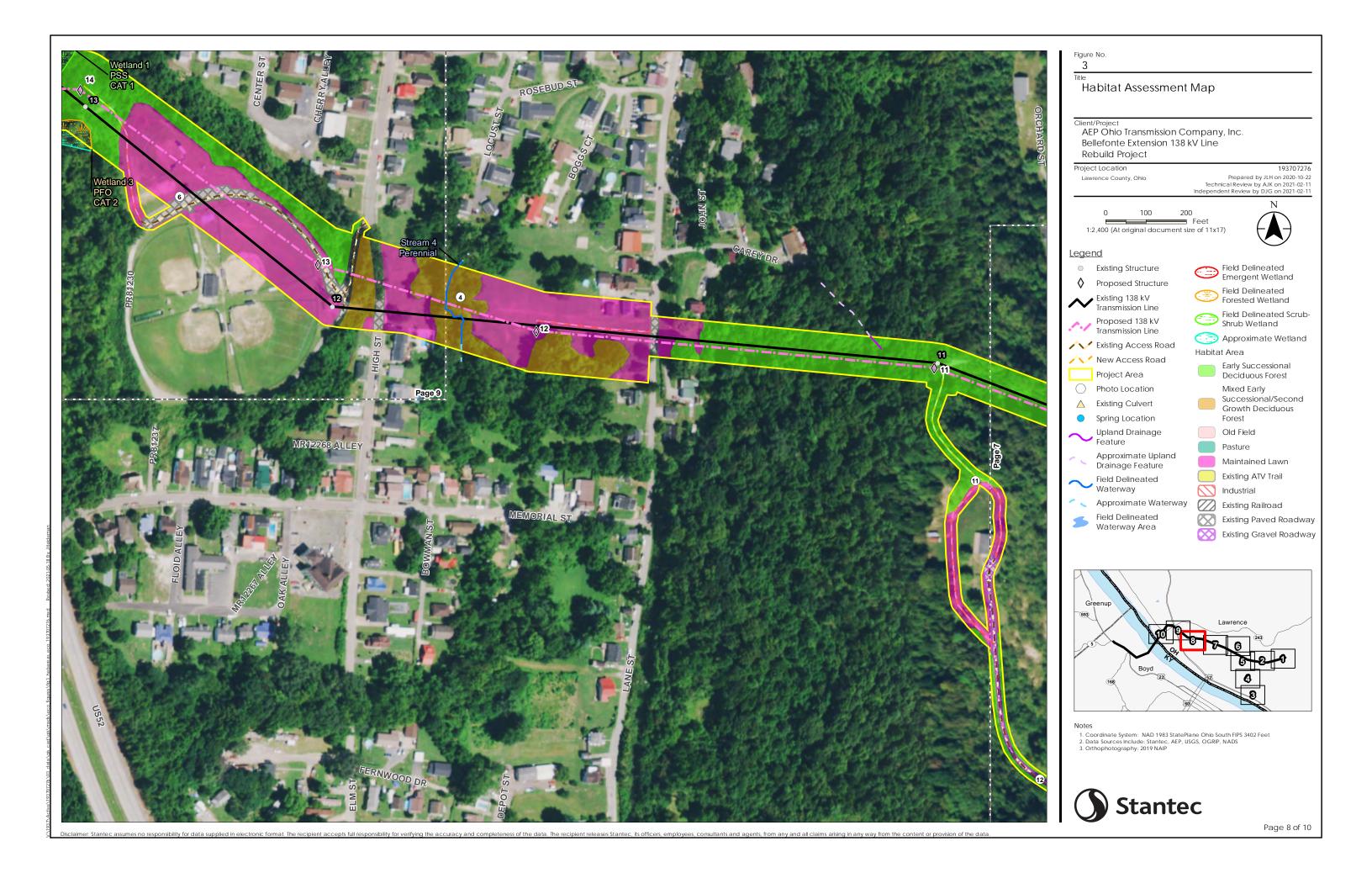


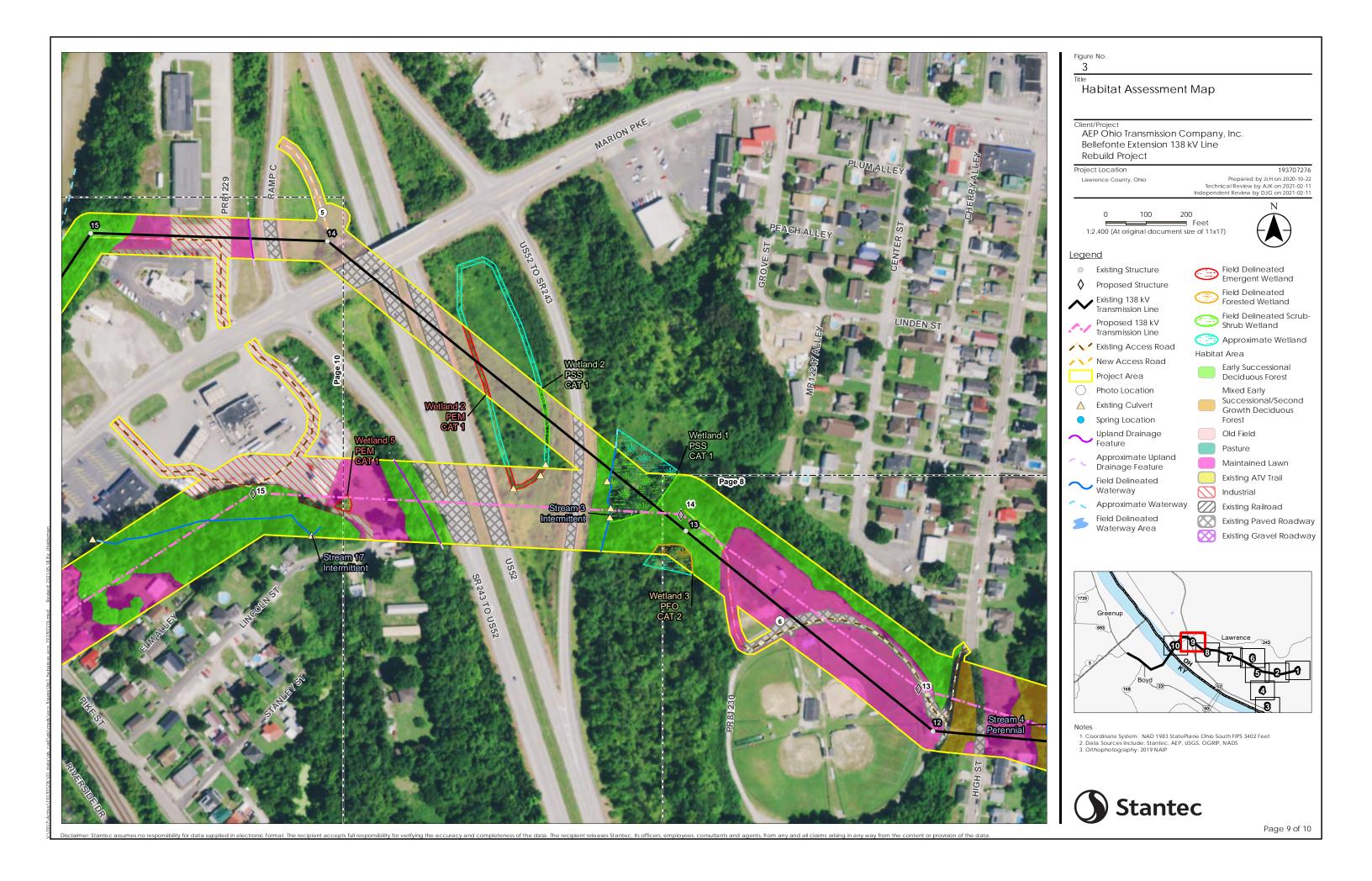


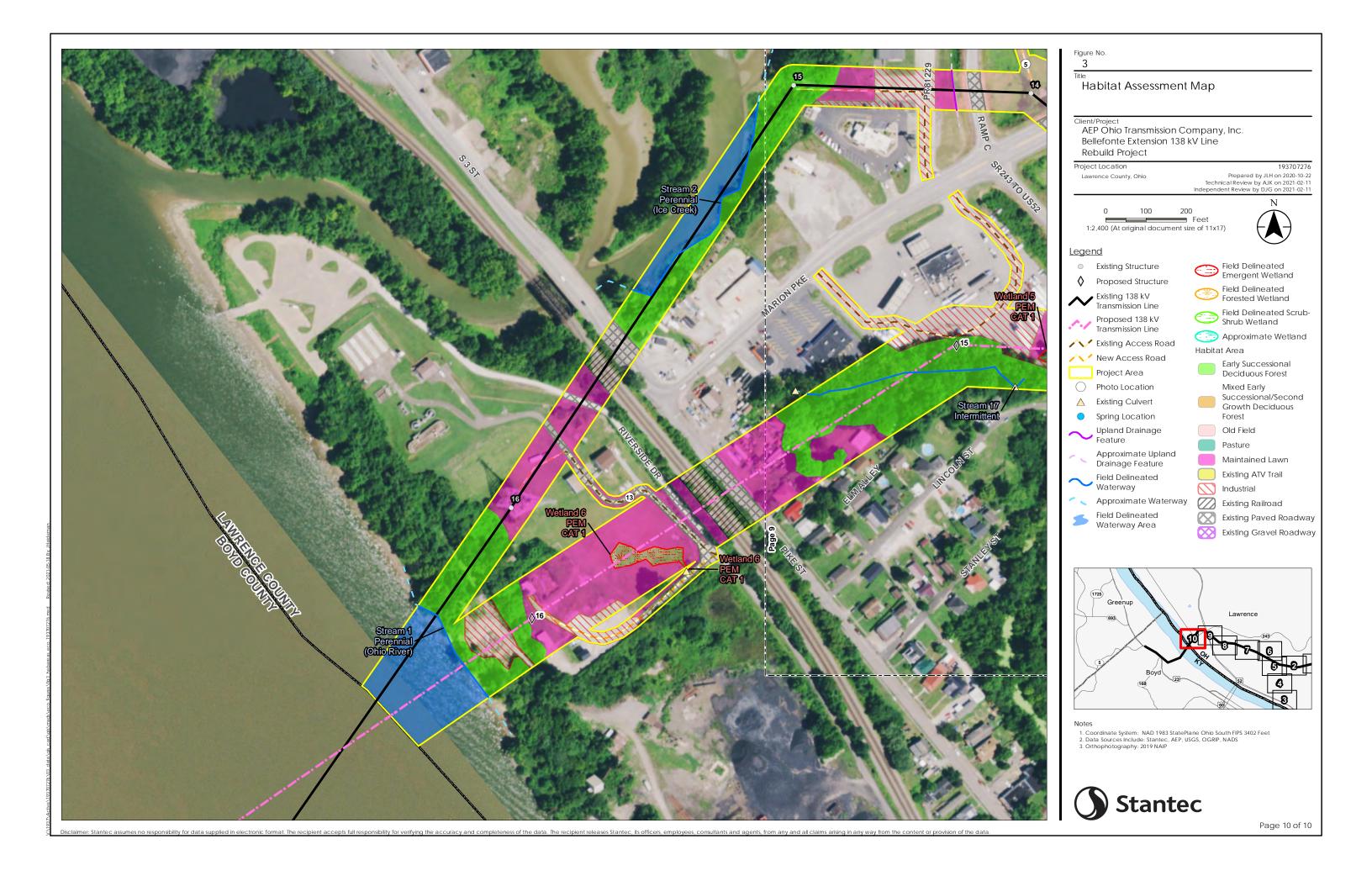












# **Appendix B AGENCY CORRESPONDENCE**

#### Godec, Daniel

From:

susan\_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>

Sent:

Thursday, December 05, 2019 8:14 AM

To:

Godec, Daniel

Cc:

nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us

Subject:

Bellefonte Extension 138 kV Line Rebuild Project, Lawrence Co.



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



TAILS# 03E15000-2020-TA-0292

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 humanmade 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  $\geq 3$  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 <a href="http://www.fws.gov/midwest/endangered/mammals/nleb/index.html">http://www.fws.gov/midwest/endangered/mammals/nleb/index.html</a>), 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



Office of Real Estate John Kessler, Chief 2045 Morse Road – Bldg. E-2 Columbus, OH 43229

Phone: (614) 265-6621 Fax: (614) 267-4764

January 8, 2020

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

Re: 19-1008; Bellefonte Extension 138 kV Line Rebuild Project

**Project:** The Project involves rebuilding approximately 3.6 miles of existing 138 kV electric transmission line in Ohio and approximately and 1.4 miles of existing 138 kV electric transmission line in Kentucky.

**Location:** The proposed project is located in Perry Township, Lawrence 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:

Maypop (Passiflora incarnata), T
Gray beard-tongue (Penstemon canescens), T
Blue scorpion-weed (Phacelia covillei), E
Wartyback (Cyclonaias nodulata), E
Butterfly (Ellipsaria lineolata), E
Elephant-ear (Elliptio crassidens), E
Black sandshell (Ligumia recta), T
Washboard (Megalonaias nervosa), E
Threehorn wartyback (Obliquaria reflexa), T
Ohio pigtoe (Pleurobema cordatum), E
Ebonyshell (Reginaia ebenus), E
Channel darter (Percina copelandi), T
River darter (Percina shumardi), T
Green salamander (Aneides aeneus), E
Little Ice Creek Conservation Site

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

A Conservation Site is an area deemed by the Natural Heritage Database to be a high-quality natural area not currently under formal protection. It may, for example, harbor one or more rare species, be an outstanding example of a plant community or have geologically significant features, etc. These sites may be in private ownership and our listing of them does not imply permission for access.

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 (Carva laciniosa), bitternut hickory (Carva 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), 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 sheepnose (*Plethobasus cyphyus*), a state endangered and federally endangered mussel, the fanshell (*Cyprogenia stegaria*), a state endangered and federally endangered mussel, the pink mucket (*Lampsilis orbiculata*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally

endangered mussel, the ebonyshell (Fusconaia ebenus), a state endangered mussel, the elephantear (Elliptio crassidens), a state endangered mussel, the washboard (Megalonaias nervosa), a state endangered mussel, the monkeyface (*Quadrula metanevra*), a state endangered mussel, the little spectaclecase (Villosa lienosa), a state endangered mussel, the Ohio pigtoe (Pleurobema cordatum), a state endangered mussel, the threehorn wartyback (Obliquaria reflexa), a state threatened mussel, and the black sandshell (*Ligumia recta*), a state threatened mussel. This project must not have an impact on freshwater native mussels at the project site. This applies to both listed and non-listed species. Per the Ohio Mussel Survey Protocol (2018), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 10 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. This is further explained within the Ohio Mussel Survey Protocol. Therefore, if in-water work is planned in any stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, as a last resort, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. The Ohio Mussel Survey Protocol (2018) can be found at: http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/licenses%20&%20permits/OH%20Mussel%20Su rvey%20Protocol.pdf

The project is within the range of the goldeye (*Hiodon alosoides*), a state endangered fish, the shoal chub (*Macrhybopsis hyostoma*), a state endangered fish, the shovelnose sturgeon (*Scaphirhynchus platorynchus*), a state endangered fish, the channel darter (*Percina copelandi*), a state threatened fish, and the river darter (*Percina shumardi*), a state threatened fish. The DOW recommends no in-water work in the Ohio River from March 15 through June 30, and in other perennial streams from April 15 to June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the timber rattlesnake (*Crotalus horridus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species, utilizing dry slopes and rocky outcrops. In addition to using wooded areas, the timber rattlesnake utilizes sunlit gaps in the canopy for basking and deep rock crevices for overwintering. Due to the location, this project is not likely to impact this species.

The project is within the range of the green salamander (*Aneides aeneus*), a state endangered amphibian. This species inhabits the deep moist cracks of rock cliffs. Due to the location, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, and the type of habitat present at the project site, and within the vicinity of the project area, this project is not likely to impact this species.

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

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the 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.

 $\frac{http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community%20Contact%20List\_8\_16.pdf}{}$ 

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

Mike Pettegrew Environmental Services Administrator (Acting)

# **Appendix C** REPRESENTATIVE PHOTOGRAPHS

### C.1 WETLAND AND WATERBODY PHOTOGRAPHS





Photo Location 1. View of Stream 1 (Ohio River). Photograph taken facing upstream/southeast.



Photo Location 1. View of Stream 1 (Ohio River). Photograph taken facing downstream/northwest.





Photo Location 1. View of substrate of Stream 1 (Ohio River).



Photo Location 2. View of Stream 2 (Ice Creek). Photograph taken facing upstream/north.





Photo Location 2. View of Stream 2 (Ice Creek). Photograph taken facing downstream/south.



Photo Location 2. View of substrate of Stream 2 (Ice Creek).





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



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





Photo Location 3. View of the substrate of Stream 3.



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





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



Photo Location 4. View of substrate of Stream 4.





Photo Location 5. View of Stream 5. Photograph taken facing upstream/southwest.



Photo Location 5. View of Stream 5. Photograph taken facing downstream/northeast.





Photo Location 5. View of substrate of Stream 5.



Photo Location 6. View of Stream 6. Photograph taken facing upstream/southwest.





Photo Location 6. View of Stream 6. Photograph taken facing downstream/northeast.



Photo Location 6. View of substrate of Stream 6.





Photo Location 7. View of Stream 7. Photograph taken facing upstream/south.



Photo Location 7. View of Stream 7. Photograph taken facing downstream/north.





Photo Location 7. View of substrate of Stream 7.



Photo Location 8. View of Stream 8. Photograph taken facing upstream/southwest.





Photo Location 8. View of Stream 8. Photograph taken facing downstream/northeast.



Photo Location 8. View of substrate of Stream 8.





Photo Location 9. View of Stream 9. Photograph taken facing upstream/south.



Photo Location 9. View of Stream 9. Photograph taken facing downstream/north.





Photo Location 9. View of substrate of Stream 9.



Photo Location 10. View of Stream 10 (Little Ice Creek). Photograph taken facing upstream/south.





Photo Location 10. View of Stream 10 (Little Ice Creek). Photograph taken facing downstream/north.



Photo Location 10. View of substrate of Stream 10 (Little Ice Creek).





Photo Location 11. View of Stream 11. Photograph taken facing upstream/northeast.



Photo Location 11. View of Stream 11. Photograph taken facing downstream/southwest.





Photo Location 11. View of substrates of Stream 11.



Photo Location 12. View of Stream 12. Photograph taken facing upstream/north.





Photo Location 12. View of Stream 12. Photograph taken facing downstream/south.



Photo Location 12. View of substrate of Stream 12.





Photo Location 13. View of Stream 13. Photograph taken facing upstream/south.



Photo Location 13. View of Stream 13. Photograph taken facing downstream/north.





Photo Location 13. View of substrate of Stream 13.



Photo Location 14. View of Stream 14. Photograph taken facing upstream/south.





Photo Location 14. View of Stream 14. Photograph taken facing downstream/north.



Photo Location 14. View of substrate of Stream 14.





Photo Location 15. View of Stream 15. Photograph taken facing upstream/south.



Photo Location 15. View of Stream 15. Photograph taken facing downstream/north.





Photo Location 15. View of substrate of Stream 15.



Photo Location 16. View of Stream 16. Photograph taken facing upstream/south.





Photo Location 16. View of Stream 16. Photograph taken facing downstream/north.



Photo Location 16. View of substrate of Stream 16.





Photo Location 17. View of Wetland 1 at wetland determination sample point SP01. Photograph taken facing north.



Photo Location 17. View of Wetland 1 at wetland determination sample point SP01. Photograph taken facing east.





Photo Location 17. View of Wetland 1 at wetland determination sample point SP01. Photograph taken facing south.



Photo Location 17. View of Wetland 1 at wetland determination sample point SP01. Photograph taken facing west.





Photo Location 17. View of Wetland 1 soil profile at wetland determination sample point SP01.



Photo Location 18. View of upland (mixed early successional/second growth deciduous forest habitat) at wetland determination sample point SP02.

Photograph taken facing east.





Photo Location 18. View of upland (mixed early successional/second growth deciduous forest habitat) at wetland determination sample point SP02.

Photograph taken facing west.



Photo Location 19. View of palustrine emergent (PEM) portion of Wetland 2 at wetland determination sample point SP03. Photograph taken facing north.





Photo Location 19. View of PEM portion of Wetland 2 at wetland determination sample point SP03. Photograph taken facing east.



Photo Location 19. View of PEM portion of Wetland 2 at wetland determination sample point SP03. Photograph taken facing south.





Photo Location 19. View of PEM portion of Wetland 2 at wetland determination sample point SP03. Photograph taken facing west.



Photo Location 19. View of Wetland 2 soil profile at wetland determination sample point SP03.





Photo Location 20. View of upland (old field habitat) at wetland determination sample point SP04. Photograph taken facing east.



Photo Location 20. View of upland (old field habitat) at wetland determination sample point SP04. Photograph taken facing east.





Photo Location 21. View of palustrine scrub-shrub (PSS) portion of Wetland 2 at wetland determination sample point SP05. Photograph taken facing north.



Photo Location 21. View of PSS portion of Wetland 2 at wetland determination sample point SP05. Photograph taken facing east.





Photo Location 21. View of PSS portion of Wetland 2 at wetland determination sample point SP05. Photograph taken facing south.



Photo Location 21. View of PSS portion of Wetland 2 at wetland determination sample point SP05. Photograph taken facing west.





Photo Location 21. View of Wetland 2 soil profile of at wetland determination sample point SP05.



Photo Location 22. View of Wetland 3 at wetland determination sample point SP06. Photograph taken facing north.





Photo Location 22. View of Wetland 3 at wetland determination sample point SP06. Photograph taken facing east.



Photo Location 22. View of Wetland 3 at wetland determination sample point SP06. Photograph taken facing south.





Photo Location 22. View of Wetland 3 at wetland determination sample point SP06. Photograph taken facing west.



Photo Location 22. View of Wetland 3 soil profile at wetland determination sample point SP06.





Photo Location 23. View of upland (mixed early successional/second growth deciduous forest habitat) at wetland determination sample point SP07.

Photograph taken facing east.



Photo Location 23. View of upland (mixed early successional/second growth deciduous forest habitat) at wetland determination sample point SP07.

Photograph taken facing west.





Photo Location 24. View of Wetland 4 at wetland determination sample point SP08. Photograph taken facing north.



Photo Location 24. View of Wetland 4 at wetland determination sample point SP08. Photograph taken facing east





Photo Location 24. View of Wetland 4 at wetland determination sample point SP08. Photograph taken facing south



Photo Location 24. View of Wetland 4 at wetland determination sample point SP08. Photograph taken facing west.





Photo Location 24. View of Wetland 4 soil profile at wetland determination sample point SP08.



Photo Location 25. View of upland (old field habitat) at wetland determination sample point SP07. Photograph taken facing east.





Photo Location 25. View of upland (old field habitat) at wetland determination sample point SP07. Photograph taken facing west.



Photo Location 26. View of upland (maintained lawn habitat) at wetland determination sample point SP10 within mapped National Wetlands Inventory (NWI) PUBGh feature. Photograph taken facing north.





Photo Location 26. View of upland (maintained lawn habitat) at wetland determination sample point SP10 within mapped NWI PUBGh feature.

Photograph taken facing east.



Photo Location 26. View of upland (maintained lawn habitat) at wetland determination sample point SP10 within mapped NWI PUBGh feature.

Photograph taken facing south.





Photo Location 27. View of Stream 17. Photograph taken facing upstream/northeast.



Photo Location 27. View of Stream 17. Photograph taken facing downstream/southwest.





Photo Location 27. View of substrates of Stream 17.



Photo Location 28. View of Stream 18. Photograph taken facing upstream/east.





Photo Location 28. View of Stream 18. Photograph taken facing upstream/west.



Photo Location 28. View of substrates of Stream 18.





Photo Location 29. View of Wetland 5 at wetland determination sample point SP11. Photograph taken facing north.



Photo Location 29. View of Wetland 5 at wetland determination sample point SP11. Photograph taken facing east.





Photo Location 29. View of Wetland 5 at wetland determination sample point SP11. Photograph taken facing south.



Photo Location 29. View of Wetland 5 at wetland determination sample point SP11. Photograph taken facing west.





Photo Location 29. View of Wetland 5 soil profile at wetland determination sample point SP11.



Photo Location 30. View of upland (maintained lawn habitat) at wetland determination sample point SP12. Photograph taken facing west.





Photo Location 30. View of upland (maintained lawn habitat) at wetland determination sample point SP12. Photograph taken facing south.



Photo Location 31. View of Wetland 6 at wetland determination sample point SP13. Photograph taken facing north.





Photo Location 31. View of Wetland 6 at wetland determination sample point SP13. Photograph taken facing east.



Photo Location 31. View of Wetland 6 at wetland determination sample point SP13. Photograph taken facing south.





Photo Location 31. View of Wetland 6 at wetland determination sample point SP13. Photograph taken facing west.



Photo Location 31. View of Wetland 6 soil profile at wetland determination sample point SP13.





Photo Location 32. View of upland (maintained lawn habitat) at wetland determination sample point SP14. Photograph taken facing north.



Photo Location 32. View of upland (maintained lawn habitat) at wetland determination sample point SP14. Photograph taken facing west.

# C.2 HABITAT PHOTOGRAPHS





Photo Location 1. Representative view of early successional deciduous forest habitat within the Project area. Photograph taken facing east.



Photo Location 2. Representative view of pasture habitat within the Project area. Photograph taken facing north.





Photo Location 3. Representative view of maintained lawn habitat within the Project area. Photograph taken facing north.



Photo Location 4. Representative view of mixed early successional/second growth deciduous forest habitat within the Project area. Photograph taken facing east.





Photo Location 5. Representative view of old field habitat within the Project area. Photograph taken facing east.



Photo Location 6. Representative view of maintained lawn habitat and existing roadway within the Project area. Photograph taken facing east.





Photo Location 7. Representative view of existing gravel roadway within the Project area. Photograph taken facing northwest.



Photo Location 8. Representative view of existing ATV trail within the Project area. Photograph taken facing northwest.





Photo Location 9. Representative view of existing ATV trail within the Project area. Photograph taken facing south.



Photo Location 10. Representative view of existing gravel roadway within the Project area. Photograph taken facing south.





Photo Location 11. Representative view of maintained lawn habitat within the Project area. Photograph taken facing south.



Photo Location 11. Representative view of early successional deciduous forest habitat within the Project area. Photograph taken facing north.





Photo Location 12. Representative view of existing gravel roadway within the Project area. Photograph taken facing northwest.



Photo Location 13. Representative view of maintained lawn habitat and existing paved roadway within the Project area. Photograph taken facing west.





Photo Location 14. Representative view of sandstone rock face within the Project area. Photograph taken facing northeast.

# **Appendix D** DATA FORMS

# D.1 WETLAND DETERMINATION DATA FORMS



Project/Site:	Bellefonte I	Extension 138 kV Lin	e Rebuild P	roject		Stant	ec Project #:	193707276		Date:	10/20/20
Applicant:	AEP									County:	Lawrence
Investigator #1:					igator #2:	Matt De	nzler			State:	Ohio
Soil Unit:	Nolin silt lo	am, 0 to 3 percent sl	opes, occas	ionally flo	oc NV	NI/WWI	Classification:	PFO1A		Wetland ID:	Wetland 1
Landform:	Depression				cal Relief:	Convex				Sample Point:	
Slope (%):	1		38.49894		ongitude:			Datum:	NAD83	Community ID:	PSS
		ditions on the site typ			ar? (If no, e	explain in rer	marks)	✓ Yes □	No	Section:	S 1
		or Hydrology   sign				Are	e normal circui	mstances pre	sent?	Township:	T1N
Are Vegetation	□ , Soil □ ,	or Hydrology   natu	ırally probleı	matic?			Yes	□ No		Range:	R18W Dir:
SUMMARY OF		, ,,,									
Hydrophytic Ve	getation Pre	sent?		Yes	s □ No			Hydric Soils	Present?		
Wetland Hydrol				✓ Yes	s □ No			Is This Samp	oling Point \	Vithin A Wetla	and? <b>□ Yes ■ No</b>
Remarks:											
HYDROLOGY											
	a la ava la alia a	-t (Obl-b 'f '							<u> </u>		
_		ators (Check here if i	ndicators ar	e not pre	sent ):				Secondary:	DO 0 ( 0 -	10
Primary:	: A1 - Surface	Mator			PO Wate	er-Stained	Loovos			B6 - Surface So	egetated Concave Surface
✓	A2 - High Wa				B13 - Aqu					B10 - Sparsely ve	
<b>√</b>	A3 - Saturation				B14 - True					B16 - Moss Trin	
	B1 - Water M	larks			C1 - Hydr	ogen Sulfi	ide Odor			C2 - Dry Season	n Water Table
	B2 - Sedimer						spheres on Livin	g Roots		C8 - Crayfish Bu	
	B3 - Drift Dep						educed Iron	- "			Visible on Aerial Imagery
	B4 - Algal Ma						eduction in Tilled	Soils			Stressed Plants
	B5 - Iron Dep	องรแร on Visible on Aerial Imag	nen/		C7 - Thin	plain in Re				D2 - Geomorph D3 - Shallow Ac	
1	Di manaan	on visible on Actial imaç	gory		Other (EX	piairiirite	zmarko)			D4 - Microtopoo	
										D5 - FAC-Neutr	
Field Observat	ions.										
Surface Water			Depth:	0.5	(in.)						
Water Table Pr		✓ Yes □ No	Depth:		(in.)			Wetland Hy	drology Pre	esent?	Yes □ No
Saturation Pres		☑ Yes □ No	Depth:		(in.)						
					` '						
Describe Record	led Data (stre	eam gauge, monitoring	ı well, aerial ı	photos, pr	evious insp	pections),	, if available:		N/A		
Remarks:											
SOILS											
Map Unit Name	):	Malin all Lagran O to 1									
Map Unit Name		Noin siit ioam, 0 to	3 percent sid	opes, occ	asionally	<b>Bleroiels</b> ∙Dr	rainage Class:				
Taxonomy (Sub	ogroup):						Ğ				
Taxonomy (Sub	ogroup):	the depth needed to document the indic					Ğ	atrix, CS=Covered/Coated	d Sand Grains; Locat	ion: PL=Pore Lining, M=M	atrix)
Taxonomy (Sub	ogroup):						Ğ	atrix, CS=Covered/Coated	d Sand Grains; Locat	on: PL=Pore Lining, M=Ma	atrix) Texture
Taxonomy (Sub Profile Descrip Top	ogroup): otion (Describe to Bottom			sence of indicator		ncentration, D=D	Ğ			on: PL=Pore Lining, M=M: Location	Texture
Taxonomy (Sub Profile Descrip	ogroup): otion (Describe to Bottom Depth	the depth needed to document the indic	cator or confirm the ab	Matrix Moist)	rs.) (Type: C=Cor	ncentration, D=D	Depletion, RM=Reduced Ma	Mottles	Sand Grains; Locat		Texture (e.g. clay, sand, loam)
Taxonomy (Sub Profile Descrip Top Depth	pgroup): otion (Describe to Bottom Depth 4	the depth needed to document the india  Horizon  1	Color (	Matrix Moist) 4/1	rs.) (Type: C=Cor	col	Depletion, RM=Reduced Ma	Mottles % 	Type 	Location 	Texture (e.g. clay, sand, loam) clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4	pgroup):  tion (Describe to  Bottom  Depth  4  16	the depth needed to document the indices the depth needed to document the indices of the depth o	Color (I	Matrix Moist) 4/1 5/2	% 100 90	Col	Depletion, RM=Reduced Ma	Mottles % 10	Type  C	Location  M	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4	ogroup):  otion (Describe to  Bottom Depth 4 16	the depth needed to document the india Horizon 1 2	Color (I	Matrix Moist) 4/1 5/2	% 100 90	Col	Depletion, RM=Reduced Ma  Or (Moist)   4/6	Mottles % 10	Type  C	Location  M 	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4 	ogroup): btion (Describe to Bottom Depth 4 16	Horizon  1  2	Color (I	Matrix Moist)  4/1  5/2	% 100 90	Col	or (Moist) 4/6	Mottles	Type C	Location M	Texture (e.g. clay, sand, loam) clay loam clay loam
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Taxonomy (Sub Profile Descrip Top Depth 0 4  	pgroup):  otion (Describe to  Bottom Depth 4 16	Horizon  1  2	Color (I	Matrix Moist) 4/1 5/2	% 100 90	Col 5YR	or (Moist) 4/6	Mottles % 10	Type C	Location M	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4    	pgroup):  otion (Describe to  Bottom Depth 4 16	Horizon  1  2	Color (I	Matrix Moist)  4/1  5/2	% 100 90	Col 5YR	Or (Moist)  4/6	Mottles % 10	Type C	Location  M Indicators for	Texture (e.g. clay, sand, loam) clay loam clay loam r Problematic Soils 1
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Taxonomy (Sub Profile Descrip Top Depth 0 4	pagroup):  pation (Describe to Depth 4 16 Soil Field In dedon	Horizon  1  2	Color (I 10YR 10YR e if indicator S5 - Sandy F S6 - Strippec S7 - Dark Su	Matrix Moist)  4/1  5/2	% 100 90 present	SYR	Sepletion, RM=Reduced Ma   Or (Moist)	Mottles % 10	Type C asses (LRR N, RA 122, 136)	Location  M      Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmon'	Texture (e.g. clay, sand, loam) clay loam clay loam
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Taxonomy (Sub Profile Descrip Top Depth 0 4 NRCS Hydric: A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S A5 - Stratified La	pgroup):  ption (Describe to Depth 4 16 Soil Field In Depth 5 Sulfide ayers	Horizon  1  2	Color (In 10 YR 10	Matrix Moist)  4/1  5/2    s are not Redox d Matrix Matrix Redox d Matrix Inface ue Below D rk Surface	90 present	Col	Or (Moist)	Mottles % 10	Type C	Location  M Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmont TF12 - Very	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4 NRCS Hydric S A1 - Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc	pgroup):  ption (Describe to Depth 4 16 Soil Field In edon C Sulfide ayers kt (LRR N)	Horizon  1 2 dicators (check here	Color (In 10 YR 10	Matrix Moist)  4/1  5/2    s are not Redox I Matrix Matrix Inface ue Below D rk Surface Gleyed Matrix	90 present	Col	Or (Moist)	Mottles % 10	Type C	Location  M Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmont TF12 - Very	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4	pgroup):  ption (Describe to Depth 4 16	Horizon  1 2 dicators (check here	Color (I 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Strippec S7 - Dark Su S8 - Polyvalu S9 - Thin Da F2 - Loamy (F3 - Depleter	Matrix Moist)  4/1  5/2	% 100 90 present	Col	Or (Moist)	Mottles % 10	Type C	Location  M Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmont TF12 - Very	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4 NRCS Hydric : A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen : A5 - Stratified La A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar	pgroup):  ption (Describe to Depth 4 16 Soil Field In edon C Sulfide ayers k (LRR N) Below Dark St k Surface	Horizon  1 2 dicators (check here	cator or confirm the ab	Matrix Moist)  4/1  5/2	7s.) (Type: C=Cor % 100 90    present ark Surface (MLRA 147, 148	Col	Or (Moist)	Mottles % 10	Type C	Location  M Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmont TF12 - Very	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4	pgroup):  ption (Describe to Depth 4 16	Horizon  1 2 dicators (check here	Color (I 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Strippec S7 - Dark Su S8 - Polyvalu S9 - Thin Da F2 - Loamy (F3 - Depleter	Matrix Moist)  4/1  5/2    s are not Redox I Matrix Matrix I Moist)  6/2     S are not Redox I Matrix I Matrix I Matrix I Matrix I Geleved Matrix I Ma	rs.) (Type: C=Cor  % 100 90 present  ark Surface (MLRA 147, 148 rix	Col	F12 - Iron   F19 - Piec   F21 - Red	Mottles % 10	Type C asses (LRR N, RA 122, 136)	Location  M     Indicators for  A10 - 2cm M  A16 - Coast P  F19 - Piedmont  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4	pgroup):  ption (Describe to Depth 4 16	Horizon  1 2 dicators (check here	cator or confirm the absence of the confirmation of the confirmati	Matrix Moist)  4/1  5/2    s are not Redox I Matrix Inface Below Drk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface Depression:	rs.) (Type: C=Cor  % 100 90 present  ark Surface (MLRA 147, 148 rix	Col	F12 - Iron   F19 - Piec   F21 - Red	Mottles % 10	Type  C asses (LRR N, RA 122, 136) in Soils (MLRA 127, 1447)	Location  M    Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmont TF12 - Very Other (Expla	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4 NRCS Hydric : A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gley	pgroup):  ption (Describe to Depth 4 16	Horizon  1 2 dicators (check here	cator or confirm the absence of the confirmation of the confirmati	Matrix Moist)  4/1  5/2    s are not Redox I Matrix Matrix I Moist)  6/2     S are not Redox I Matrix I Matrix I Matrix I Matrix I Geleved Matrix I Ma	rs.) (Type: C=Cor  % 100 90 present  ark Surface (MLRA 147, 148 rix	Col	F12 - Iron   F19 - Piec   F21 - Red	Mottles % 10	Type  C asses (LRR N, RA 122, 136) in Soils (MLRA 127, 1447)	Location  M    Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmont TF12 - Very Other (Expla	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4	pgroup):  ption (Describe to Depth 4 16	Horizon  1 2 dicators (check here	cator or confirm the absence of the confirmation of the confirmati	Matrix Moist)  4/1  5/2    s are not Redox I Matrix Inface Below Drk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface Depression:	rs.) (Type: C=Cor  % 100 90 present  ark Surface (MLRA 147, 148 rix	Col	F12 - Iron   F19 - Piec   F21 - Red	Mottles % 10	Type  C asses (LRR N, RA 122, 136) in Soils (MLRA 127, 1447)	Location  M    Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmont TF12 - Very Other (Expla	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4 NRCS Hydric S A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gle Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth 4 16	Horizon  1 2 dicators (check here	cator or confirm the absence of the confirmation of the confirmati	Matrix Moist)  4/1  5/2    s are not Redox I Matrix Inface Below Drk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface Depression:	rs.) (Type: C=Cor  % 100 90 present  ark Surface (MLRA 147, 148 rix	Col	F12 - Iron   F19 - Piec   F21 - Red	Mottles % 10	Type  C asses (LRR N, RA 122, 136) in Soils (MLRA 127, 1447)	Location  M    Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmont TF12 - Very Other (Expla	Texture (e.g. clay, sand, loam) clay loam clay loam
Taxonomy (Sub Profile Descrip Top Depth 0 4 NRCS Hydric S A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gle Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth 4 16	Horizon  1 2 dicators (check here	cator or confirm the absence of the confirmation of the confirmati	Matrix Moist)  4/1  5/2    s are not Redox I Matrix Inface Below Drk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface Depression:	rs.) (Type: C=Cor  % 100 90 present  ark Surface (MLRA 147, 148 rix	Col	F12 - Iron   F19 - Piec   F21 - Red	Mottles % 10	Type  C asses (LRR N, RA 122, 136) in Soils (MLRA 127, 1447)	Location  M    Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmont TF12 - Very Other (Expla	Texture (e.g. clay, sand, loam) clay loam clay loam



Project/Site:	Bellefonte Extension 138 kV Line	e Rebuild Project			Wetland ID: Wetland 1 Sample Point SP01
VEGETATION	(Species identified in all uppercase are	e non-native species.)			
Tree Stratum (Pl	ot size: 30 ft radius)				
_	Species Name	% Cover		Ind.Status	Dominance Test Worksheet
1.					
2.					Number of Dominant Species that are OBL, FACW, or FAC: (A)
3.					
4.					Total Number of Dominant Species Across All Strata: (B)
5.					Percent of Dominant Species That Are OBL, FACW, or
6.					FAC: 100.0% (A/B)
7.					
8.					Prevalence Index Worksheet
9.					Total % Cover of: Multiply by:
10.					OBL spp. 0
	Lot	al Cover = 0			FACW spp X 2 =
					FAC spp. 45 X 3 = 135
	atum (Plot size: 15 ft radius)	40			FACU spp. 5 x 4 = 20
1.	Ulmus rubra	10	Y	FAC	UPL spp 0
2.	Acer saccharinum	15	Y	FACW	T-1-1 450 (A) 055 (D)
3.	Platanus occidentalis	12	Y	FACU	Total 150 (A) 355 (B)
4.	Rubus allegheniensis	3	N	FACU	D
5.	Acer negundo	10	Y	FAC	Prevalence Index = B/A = 2.367
6.					
7.					Hodganbath Vanatation Indicators
8.					Hydrophytic Vegetation Indicators:
9.					Yes ☑ □ No Rapid Test for Hydrophytic Vegetation
10.	 T-4	50			Yes ☑ □ No Dominance Test is > 50%
	IO	al Cover = 50			Yes ☑ □ No Prevalence Index is ≤ 3.0 *
					Yes □ ☑ No Morphological Adaptations (Explain) *
	ot size: 5 ft radius)	00		E40)4/	Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Phalaris arundinacea	63	Y	FACW	* Indicators of hydric soil and wetland hydrology must be
2.	Verbesina alternifolia	10	N	FAC	present, unless disturbed or problematic.
3.	Persicaria pensylvanica	2	N	FACW	
4.	Symphyotrichum pilosum	10	N	FAC	Definitions of Vegetation Strata:
5.	Amphicarpaea bracteata	3	N	FAC	_
6	Urtica dioica	2	N	FACU	Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
7.	Epilobium coloratum	3	N	FACW	neight (DBH), regardless of neight.
8.	Lythrum salicaria	2	N	FACW	a water to Wallack the of BBU at a second
9.	Commelina virginica	3	N	FACW	Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.
10.	Toxicodendron radicans	2	N	FAC	··· ····
11.					
12.					Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.
13.					and the state of t
14.	<del></del>				
15.	_ <del></del>				Woody Vines - All woody vines greater than 3.28 ft. in height.
	Tot	al Cover = 100			
	um (Plot size: 30 ft radius)				
1.	<del></del>				
2.	<del></del>				
3.	<del></del>				Hydrophytic Vegetation Present ☑ Yes ☐ No
4.					
5.	<del></del>				
	Tot	al Cover = 0			
Remarks:					
				<u> </u>	
Additional Re	marks:				
I					



#### WETLAND DETERMINATION DATA FORM Eastern Mountains and Piedmont Region

Project/Site:	Bellefonte	Extension 138 kV Lir	ne Rebuild F	Project		Stant	ec Project #:	193707276		Date:	10/20/20
Applicant:	AEP									County:	Lawrence
Investigator #1:	Aaron Kwo	lek		Invest	igator #2:	Matt De	nzler			State:	Ohio
Soil Unit:		am, 0 to 3 percent sl	0000 0000				Classification:	NI/A			Wetland 1
		am, o to 3 percent si	opes, occas					IN/A		Wetland ID:	
Landform:	Rise			Loc	cal Relief:	Concav	е			Sample Point:	
Slope (%):	3	Latitude:	38.49883	L	ongitude:	-82.648	120	Datum:	NAD83	Community ID:	UPL
Are climatic/hyd	drologic cond	ditions on the site typ	ical for this	time of ye	ar? (If no, e	explain in rer	marks)	Yes □	No	Section:	S 1
		or Hydrology ☐ sign						ımstances pre	sent?	Township:	T1N
		or Hydrology $\square$ natu					☑ Yes				
		or Hydrology — Hall	irally proble	malic?			□ 163	□ 1 <b>1</b> 0		Range:	R18W Dir:
SUMMARY OF											
Hydrophytic Ve	getation Pre	sent?			□ No			Hydric Soils	Present?		☐ Yes ☑ No
Wetland Hydrol	logy Present	?		□ Yes	. ☑ No					Within A Wetla	and? ■ Yes ■ No
Remarks:		•									
ixemans.											
<b>HYDROLOGY</b>											
Wetland Hydr	ology Indic	ators (Check here if	indicators a	re not pre	cont \				Secondary:		
_		ators (Check here ii	iliuicaiois a	ie not pre	sent ).				Secondary.	DO 0( 0-	1.0
Primary:		M-1			DO 14/-1	01-11	Lance		님	B6 - Surface So	
	A1 - Surface					er-Stained					getated Concave Surface
	A2 - High Wa					atic Faun			H	B10 - Drainage	
	A3 - Saturati B1 - Water M					e Aquatic I ogen Sulfi			H	B16 - Moss Trin	
								D t .	H	C2 - Dry Season C8 - Crayfish Bu	
							spheres on Livireduced Iron	ng Roots	님		
								0 - 11 -	H	D1 - Stunted or	Visible on Aerial Imagery
		at or Crust					eduction in Tilled	Solis	H		
						Muck Surf			H	D2 - Geomorph	
	B7 - Inundati	ion Visible on Aerial Ima	gery		Other (Ex	plain in Re	emarks)			D3 - Shallow Ac	
										D5 - FAC-Neutr	
										D5 - FAC-Neuli	ai rest
Field Observat	tions:										
Surface Water	Present?	☐ Yes ☑ No	Depth		(in.)						.,
Water Table Pr		☐ Yes ☑ No			, ,			Wetland Hyd	drology Pr	esent?	Yes ☑ No
			Depth		(in.)						
Saturation Pres	sent?	☐ Yes ☑ No	Depth		(in.)						
Describe Record	led Data (str	eam gauge, monitoring	well aerial	photos pre	evious ins	nections)	if available:		N/A		
Remarks:			,,	p, p		,					
Remarks.											
SOILS											
Map Unit Name	e:	Nolin silt loam, 0 to	3 percent sl	opes, occ	asionally	<b>Beriels</b> (Dr	ainage Class:				
Taxonomy (Sub		·	•								
		the depth needed to document the indi	actor or confirm the o	baanaa of indicator	m \ /Tumo: C-Co	nontration D_D	Appletion PM-Reduced M	Intriv CS-Counted/Control	Sand Crains: Loss	tion: DIBoro Lining MM	atriv\
		the depth needed to document the indi	cator or confirm the a		s.) (Type: C=Co	ncentration, D=D	repietion, Rivi=Reduced ivi		Sand Grains; Loca	tion: PL=Pore Lining, M=M	Texture
Тор	Bottom			Matrix				Mottles	1	ı	
Depth	Depth	Horizon	Color (	(Moist)	%	Col	or (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
0	1	1	10YR	2/1	100						silty clay
1	15	2	10YR	4/3	100						silty clay
	16	3	10YR	5/6		40VD		2	С	N.4	
15					98	10YR	6/8			M	silty clay
								1			
NRCS Hydric	Soil Field Ir	ndicators (check her	e if indicato	rs are not	present	): 🗸				Indicators for	r Problematic Soils 1
1- Histosol			S5 - Sandy I	Redox			☐ F12 - Iror	n-Manganese Ma	asses (LRR N, Í	☐ A10 - 2cm M	luck (MLRA 147)
			S6 - Strippe	d Matrix			☐ F13 - Um	nbric Surface (MLF	RA 122, 136)	A16 - Coast P	rairie Redox (MLRA 147, 148)
2 - Histic Epip	edon							dmont Floodplai		_	t Floodplain Soils (MLRA 136, 147)
2 - Histic Epipe			S7 - Dark Si						` -		Shallow Dark Surface
3 - Black Histic	С		S7 - Dark Si S8 - Polyval		ark Surface	MI RA 147. 1	148)				
3 - Black Histic	c Sulfide		S8 - Polyval	ue Below D				d Parent Materia			
3 - Black Histic 4 - Hydrogen 5 - Stratified L	c Sulfide ayers		S8 - Polyval S9 - Thin Da	ue Below Dark Surface	(MLRA 147, 148			d Parent Materia			in in Remarks)
3 - Black Histic 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc	c Sulfide ayers ck (LRR N)	urface	S8 - Polyval S9 - Thin Da F2 - Loamy	ue Below Dark Surface Gleyed Mat	(MLRA 147, 148			d Parent Materia			
3 - Black Histin 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc	c Sulfide ayers ck (LRR N) Below Dark S	urface	S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete	ue Below Dark Surface Gleyed Mated Matirx	(MLRA 147, 148 rix			d Parent Materia			
3 - Black Histin 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dar	c Sulfide ayers ck (LRR N) Below Dark S ck Surface		S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox	ue Below Dark Surface Gleyed Mated Matirx Dark Surfac	(MLRA 147, 148 rix ee			d Parent Materia			
3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dar	c Sulfide ayers ck (LRR N) Below Dark S rk Surface ck Mineral (LRR		S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	ue Below Dark Surface Gleyed Mated Matirx Dark Surfaced Dark Surfaced	(MLRA 147, 148 rix se face				al (MLRA 127, 147	Other (Expla	in in Remarks)
3 - Black Histir 4 - Hydrogen : 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dar 11 - Sandy Muc 4 - Sandy Gle	c Sulfide ayers ck (LRR N) Below Dark S rk Surface ck Mineral (LRR		S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox	ue Below Dark Surface Gleyed Mated Matirx Dark Surfaced Dark Surfaced	(MLRA 147, 148 rix se face				al (MLRA 127, 147	Other (Expla	
3 - Black Histir 4 - Hydrogen 3 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dar 1 - Sandy Muc 4 - Sandy Gle	c Sulfide ayers ck (LRR N) Below Dark S rk Surface ck Mineral (LRR		S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	ue Below Dark Surface Gleyed Mated Matirx Dark Surfaced Dark Surfaced	(MLRA 147, 148 rix se face				(MLRA 127, 147)	Other (Expla	in in Remarks)
3 - Black Histir 4 - Hydrogen 3 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dan 11 - Sandy Muc 4 - Sandy Gle  Restrictive Layer (If Observed)	c Sulfide ayers ck (LRR N) Below Dark S ck Surface ck Mineral (LRR yed Matrix		S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	ue Below Dark Surface Gleyed Mated Matirx Dark Surface d Dark Surfaced Depressions	(MLRA 147, 148 rix se face			<sup>1</sup> Indicators of hydroph	(MLRA 127, 147)	Other (Expla	in in Remarks)  be present, unless disturbed or problematic.
3 - Black Histir 4 - Hydrogen 3 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dar 1 - Sandy Muc 4 - Sandy Gle	c Sulfide ayers ck (LRR N) Below Dark S ck Surface ck Mineral (LRR yed Matrix		S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	ue Below Dark Surface Gleyed Mated Matirx Dark Surface d Dark Surfaced Depressions	(MLRA 147, 148 rix se face			<sup>1</sup> Indicators of hydroph	(MLRA 127, 147)	Other (Expla	in in Remarks)  De present, unless disturbed or problematic.
3 - Black Histir 4 - Hydrogen 3 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dan 11 - Sandy Muc 4 - Sandy Gle  Restrictive Layer (If Observed)	c Sulfide ayers ck (LRR N) Below Dark S ck Surface ck Mineral (LRR yed Matrix		S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	ue Below Dark Surface Gleyed Mated Matirx Dark Surface d Dark Surfaced Depressions	(MLRA 147, 148 rix se face			<sup>1</sup> Indicators of hydroph	(MLRA 127, 147)	Other (Expla	in in Remarks)  De present, unless disturbed or problematic.
3 - Black Histir 4 - Hydrogen 3 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dan 11 - Sandy Muc 4 - Sandy Gle  Restrictive Layer (If Observed)	c Sulfide ayers ck (LRR N) Below Dark S ck Surface ck Mineral (LRR yed Matrix		S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	ue Below Dark Surface Gleyed Mated Matirx Dark Surface d Dark Surfaced Depressions	(MLRA 147, 148 rix se face			<sup>1</sup> Indicators of hydroph	(MLRA 127, 147)	Other (Expla	in in Remarks)  De present, unless disturbed or problematic.
3 - Black Histir 4 - Hydrogen 3 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dan 11 - Sandy Muc 4 - Sandy Gle  Restrictive Layer (If Observed)	c Sulfide ayers ck (LRR N) Below Dark S ck Surface ck Mineral (LRR yed Matrix		S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	ue Below Dark Surface Gleyed Mated Matirx Dark Surface d Dark Surfaced Depressions	(MLRA 147, 148 rix se face			<sup>1</sup> Indicators of hydroph	(MLRA 127, 147)	Other (Expla	in in Remarks)  be present, unless disturbed or problematic.



Project/Site:	Bellefonte Extension 138 kV Line Rebuild Pr	niect			Wetland ID: Wetland 1 Sample Point SP02
1 Toject/Oile.	Delicione Extension 100 KV Eine Rebuild 11	ojeot			Welland IB. Welland 1 Sample Folik 61 62
<b>VEGETATION</b>	(Species identified in all uppercase are non-native s	pecies.)			
	ot size: 30 ft radius)	,			
•	Species Name	% Cover	Dominant	Ind.Status	Dominance Test Worksheet
1.	Acer saccharinum	10	Y	FACW	
2.	Juglans nigra	2	N	FACU	Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)
3.	Prunus serotina	2	N	FACU	
4.	Gleditsia triacanthos	5	Υ	FAC	Total Number of Dominant Species Across All Strata: 5 (B)
5.					Percent of Dominant Species That Are OBL, FACW, or
6.					FAC: <b>80.0%</b> (A/B)
7.					``,
8.					Prevalence Index Worksheet
9.					Total % Cover of: Multiply by:
10.					OBL spp. 2 X 1 = 2
	Total Cover =	19			FACW spp. 35
					FAC spp. 44 X 3 = 132
Sapling/Shrub Str	atum (Plot size: 15 ft radius)				FACU spp. 31 X 4 = 124
1.					UPL spp. 5 x 5 = 25
2.					··· <del></del>
3.					Total 117 (A) 353 (B)
4.					· · · · · · · · · · · · · · · · · · ·
5.					Prevalence Index = B/A = 3.017
6.					
7.					
8.					Hydrophytic Vegetation Indicators:
9.					Yes □ ☑ No Rapid Test for Hydrophytic Vegetation
10.					Yes ☑ ☐ No Dominance Test is > 50%
	Total Cover =	0			Yes □ ☑ No Prevalence Index is ≤ 3.0 *
	10101 00101 =	Ŭ			Yes □ ☑ No Morphological Adaptations (Explain) *
Herb Stratum (Plo	t size: 5 ft radius)				Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Elymus canadensis	15	Υ	FACU	
2.	Amphicarpaea bracteata	2	N	FAC	* Indicators of hydric soil and wetland hydrology must be
3.	Toxicodendron radicans	2	N	FAC	present, unless disturbed or problematic.
4.	Oxalis stricta	2	N	FACU	Definitions of Vegetation Strata:
5.	Lonicera japonica	10	N	FAC	, sommond or regerance change
6	Boehmeria cylindrica	25	Y	FACW	Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.	Parthenocissus quinquefolia	5	N	FACU	height (DBH), regardless of height.
8.	Verbesina alternifolia	20	Y	FAC	
9.	Glyceria striata	2	 N	OBL	Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
10.	Convolvulus equitans	5	N	FACU	ft. tall.
11.	Euonymus fortunei	5	N	UPL	
12.	Viola sororia	5	N	FAC	Herb - All herbaceous (non-woody) plants, regardless of size,
13.					and woody plants less than 3.28 ft. tall.
14.					
15.					Woody Vines - All woody vines greater than 3.28 ft. in height.
10.	Total Cover =	98			, , , ,
	Total Gover =	30			
Woody Vine Strate	um (Plot size: 30 ft radius)				
1.	uni (Fiot size: 30 it radius)				
2.					
3.					Hydrophytic Vegetation Present ☑ Yes ☐ No
4.					Trydrophytic regetation Fleschit E-165 - NO
5.					
J.	Total Cover =	0			
Remarks:	Total Cover =	<u> </u>			
Additional D	marka.				
Additional Rer	narks:				
]					



#### WETLAND DETERMINATION DATA FORM Eastern Mountains and Piedmont Region

D : ./O:											
Project/Site:		Extension 138 kV Lir	ne Rebuild F	Project		Stant	ec Project #:	193707276		Date:	10/20/20
Applicant:	AEP									County:	Lawrence
Investigator #1:					igator #2:					State:	Ohio
Soil Unit:		am, 0 to 3 percent sl	opes, occas				Classification:	N/A		Wetland ID:	Wetland 2
Landform:	Depression		00 40007		cal Relief:			D-4	NADOO	Sample Point:	
Slope (%):	1		38.49987		ongitude:				NAD83	Community ID:	
		ditions on the site typ			ear? (If no, e				No 10	Section:	S 1
		or Hydrology □ sign				Ar	e normal circu		sent?	Township:	T1N
Are vegetation		or Hydrology 🗆 natu	irally proble	matic?			Yes	. □ No		Range:	R18W Dir:
SUMMARY OF Hydrophytic Ve	FINDINGS	00mtO		- Vas	- No			Lludria Caila	Dragonto		□ Ves □ Ne
Wetland Hydrol				✓ Yes				Hydric Soils		Within A Wetla	
Remarks:	ogy Present	. <u>.</u>		u res	oni 🗆			is this same	Jillig Politi	within A wella	and? • Tes • No
Remarks.											
HYDROLOGY											
-		ators (Check here if	indicators a	re not pre	sent ):				Secondary:		
Primary:		Mater			DO 14/-4-	Ctainad	1			B6 - Surface Sc	
- Z	A1 - Surface A2 - High Wa				B9 - Wate B13 - Aqu					B10 - Sparsely ve	egetated Concave Surface
✓	A3 - Saturati				B14 - True					B16 - Moss Trin	
	B1 - Water N				C1 - Hydr					C2 - Dry Seaso	
	B2 - Sedime	nt Deposits			C3 - Oxidi	ized Rhizo	spheres on Livir	ng Roots		C8 - Crayfish B	urrows
	B3 - Drift De						educed Iron				Visible on Aerial Imagery
	B4 - Algal Ma						eduction in Tilled	Soils			Stressed Plants
	B5 - Iron Dep		aon.		C7 - Thin					D2 - Geomorph	
	D7 - Inunuali	on Visible on Aerial Ima	gery		Other (Ex	piain in Ke	emarks)			D3 - Shallow Ac D4 - Microtopoo	
										D5 - FAC-Neutr	
Field Observat	ions.										
Surface Water			Depth:	3	(in.)						
Water Table Pr		✓ Yes □ No	Depth:		(in.)			Wetland Hyd	drology Pr	esent?	Yes □ No
Saturation Pres		☑ Yes □ No	Depth:		(in.)						
					` '						
	led Data (str	eam gauge, monitoring	g well, aerial	photos, pr	evious insp	pections),	, if available:		N/A		
Remarks:											
SOILS		N. II. III.									
SOILS Map Unit Name		Nolin silt loam, 0 to	3 percent sl	opes, occ	asionally	<b>Beriels</b> (Dr	rainage Class:				
SOILS Map Unit Name Taxonomy (Sub	ogroup):		•				•				
SOILS Map Unit Name Taxonomy (Sub Profile Descrip	ogroup): otion (Describe to	Nolin silt loam, 0 to	•	osence of indicator			•	atrix, CS=Covered/Coated	d Sand Grains; Local	tion: PL=Pore Lining, M=M	
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top	ogroup): otion (Describe to Bottom	the depth needed to document the indi	cator or confirm the ab	osence of indicator	rs.) (Type: C=Cor	ncentration, D=E	Depletion, RM=Reduced Ma	atrix, CS=Covered/Coated		1	Texture
SOILS Map Unit Name Taxonomy (Sub Profile Descrip Top Depth	ogroup): otion (Describe to Bottom Depth	the depth needed to document the indi	cator or confirm the ab	Matrix Moist)	rs.) (Type: C=Cor	centration, D=D	Depletion, RM=Reduced Mi	atrix, CS=Covered/Coated  Mottles  %	Туре	Location	Texture (e.g. clay, sand, loam)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0	Degroup):  otion (Describe to  Bottom  Depth  1	the depth needed to document the indi	cator or confirm the at	Matrix Moist) 2/1	rs.) (Type: C=Cor	CO	Depletion, RM=Reduced Mi	atrix, CS=Covered/Coated  Mottles  %	Type 	Location 	Texture (e.g. clay, sand, loam) muck
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to  Bottom  Depth  1  7	the depth needed to document the indi Horizon 1 2	Color ( 10YR 10YR	Matrix Moist) 2/1 4/2	rs.) (Type: C=Cor % 100 88	Col	Depletion, RM=Reduced Milor (Moist) 5/6	matrix, CS=Covered/Coated  Mottles  % 12	Type  C	Location  M	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0	Degroup):  otion (Describe to  Bottom  Depth  1	the depth needed to document the indi	cator or confirm the at	Matrix Moist)  2/1  4/2	rs.) (Type: C=Cor	CO	Depletion, RM=Reduced Mi	Mottles % 12	Type  C 	Location 	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to  Bottom  Depth  1  7	the depth needed to document the indi Horizon 1 2	Color ( 10YR 10YR	Matrix Moist) 2/1 4/2	rs.) (Type: C=Cor % 100 88	Col	Depletion, RM=Reduced Milor (Moist) 5/6	matrix, CS=Covered/Coated  Mottles  % 12	Type  C	Location  M	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to  Bottom Depth  1 7	Horizon  1  2	Color ( 10YR 10YR	Matrix Moist)  2/1  4/2	% 100 88	Col	Or (Moist)	Mottles % 12	Type  C 	Location  M	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to  Bottom  Depth  1  7	Horizon  1  2	Color ( 10YR 10YR	Matrix Moist)  2/1  4/2	rs.) (Type: C=Cor	Col	or (Moist) 5/6	Mottles  % 12	Type C	Location M	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to Bottom Depth 1 7	Horizon  1  2	Color ( 10YR 10YR	Matrix Moist)  2/1  4/2	% 100 88	Col	Depletion, RM=Reduced M:  or (Moist)   5/6	matrix, CS=Covered/Coated  Mottles  % 12	Type C	Location M	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to  Bottom Depth  1  7	Horizon  1  2	Color ( 10YR 10YR	sence of indicator Matrix Moist) 2/1 4/2	% 100 88	Col 10YR	Speletion, RM=Reduced Mills   Speletion   Speletion	Mottles  Mottles  12	Type C	Location M	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to  Bottom Depth  1  7	Horizon  1  2	Color ( 10YR 10YR	Matrix Moist)  2/1  4/2	% 100 88	Col 10YR	Speletion, RM=Reduced Miles	matrix, CS=Covered/Coated  Mottles  % 12	Type C	Location  M	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to  Bottom Depth  1  7	Horizon  1 2	Color ( 10YR 10YR	Matrix Moist) 2/1 4/2 rs are not	% 100 88	Col 10YR	bepletion, RM=Reduced Millor (Moist) 5/6	### Additional Control of Control	Type C	Location  M Indicators fo	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1 NRCS Hydric	ogroup):  otion (Describe to Depth 1 7 Soil Field In	Horizon  1 2	Color (  10YR  10YR  10YR     e if indicator	Matrix Moist)  2/1  4/2     s are not Redox	% 100 88	Col 10YR	Sylvan	matrix, CS=Covered/Coated  Mottles  %   12	Type  C	Location   M       Indicators fo	Texture (e.g. clay, sand, loam) muck clay r Problematic Soils 1
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1 NRCS Hydric  A1 - Histosol A2 - Histic Epip A3 - Black Histic	pgroup): ption (Describe to Depth 1 7 Soil Field In	Horizon  1 2	Color ( 10YR 10YR e if indicaton \$5 - Sandy F \$6 - Strippec \$7 - Dark St.	Matrix Moist)  2/1  4/2     rs are not Redox d Matrix urface	% 100 88 present	Col 10YR ):	Sylvan	Mottles  Mottles  12	Type C asses (LRR N RA 122, 136)	Location	Texture (e.g. clay, sand, loam) muck clay r Problematic Soils   Muck (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S	pgroup):  otion (Describe to Depth	Horizon  1 2	Color (  10YR  10YR  10YR    e if indicator  \$5 - \$andy F  \$6 - \$trippec  \$7 - Dark \$0.  \$8 - Polyvalu	Matrix Moist)  2/1  4/2     rs are not Redox di Matrix urface ue Below D	% 100 88 present	Col 10YR ):   @ (MLRA 147,	State	Mottles  % 12	Type C	Location	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified L	pgroup):  ption (Describe to Depth	Horizon  1 2	cator or confirm the at  Color (  10YR  10YR    e if indicator  \$5 - Sandy F  \$6 - Stripper  \$5 - Dark Su  \$8 - Polyvalt  \$9 - Thin Da	Matrix Moist)  2/1  4/2    s are not Redox d Matrix d Matrix d Matrix uran Below D Dark Surface	7s.) (Type: C=Cor % 100 88    present	Col 10YR ):   @ (MLRA 147,	State	Mottles  Mottles  % 12	Type C	Location	Texture (e.g. clay, sand, loam) muck clay r Problematic Soils   Muck (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147)
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric: A1- Histosol A2 - Histic Epipe A3 - Black Histit A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc	ogroup):  otion (Describe to Depth 1 7	Horizon  1 2	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy	Matrix Moist)  2/1  4/2     rs are not Redox d Matrix Matrix Moist)  2/1  4/2    graph and Matrix  Inface  ue Below D  urk Surface  Gleyed Matrix	7s.) (Type: C=Cor % 100 88    present	Col 10YR ):   @ (MLRA 147,	State	Mottles  % 12	Type C	Location	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1 NRCS Hydric A1 - Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted	pogroup):  ption (Describe to Depth	Horizon  1 2	cator or confirm the at  Color ( 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy F F3 - Deplete	Matrix Moist)  2/1  4/2     rs are not Redox d Matrix urface ue Below D urk Surface Gleyed Mat d Matirx d Matrix	% 100 88 present	Col 10YR ):   @ (MLRA 147,	State	Mottles  % 12	Type C	Location	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric: A1- Histosol A2 - Histic Epipe A3 - Black Histit A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc	pgroup):  ption (Describe to Depth 1 7 7	Horizon  1 2 adicators (check her	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy	Matrix Moist)  2/1  4/2    rs are not Redox d Matrix Inface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface	% 100 88 present	Col 10YR ):   @ (MLRA 147,	State	Mottles  % 12	Type C	Location	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar	pogroup):  ption (Describe to Depth	Horizon  1 2 adicators (check her	cator or confirm the at Color (10 YR 10 YR	Matrix Moist)  2/1  4/2    s are not Redox d Matrix d Matrix ura Below D bark Surface Gleyed Mat d Matrix Dark Surface d	rs.) (Type: C=Cor  % 100 88 present  ark Surface (MLRA 147, 148 trix	Col 10YR ):   @ (MLRA 147,	State	Mottles  Mottles  %   12	Type  C asses (LRR N., RA 122, 136) in Soils (MLRA 127, 147,	Location   M      Indicators fo  A10 - 2cm N  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam) muck clay
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1 NRCS Hydric A1 - Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Muc S4 - Sandy Gley Restrictive Layer	pgroup):  ption (Describe to Depth 1 7	Horizon  1 2 dicators (check her	cator or confirm the at  Color ( 10YR 10YR 10YR e if indicator \$5 - Sandy F \$6 - Stripper \$7 - Dark Su \$9 - Thin Da \$7 - Loamy F \$7 - Deplete \$7 - Deplete	Matrix Moist)  2/1  4/2    rs are not Redox d Matrix urface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	rs.) (Type: C=Cor  % 100 88 present  park Surface (MLRA 147, 148) trix ce face s	Col 10YR ):   @ (MLRA 147,	State	Mottles  % 12	Type  C asses (LRR N., A 122, 136) in Soils (MLRA 127, 147)	Location   M     Indicators fo  A10 - 2cm W  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam)  muck  clay      r Problematic Soils   Muck (MLRA 147)  Prairie Redox (MLRA 147, 148) tt Floodplain Soils (MLRA 136, 147) Shallow Dark Surface ain in Remarks)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1 NRCS Hydric A1 - Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gle Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth 1 7	Horizon  1 2 dicators (check her	cator or confirm the at  Color ( 10YR 10YR 10YR e if indicator \$5 - Sandy F \$6 - Stripper \$7 - Dark Su \$9 - Thin Da \$7 - Loamy F \$7 - Deplete \$7 - Deplete	Matrix Moist)  2/1  4/2    s are not Redox d Matrix d Matrix ura Below D bark Surface Gleyed Mat d Matrix Dark Surface d	rs.) (Type: C=Cor  % 100 88 present  ark Surface (MLRA 147, 148 trix	Col 10YR ):   @ (MLRA 147,	State	Mottles  Mottles  %   12	Type  C asses (LRR N., A 122, 136) in Soils (MLRA 127, 147)	Location   M     Indicators fo  A10 - 2cm W  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam)  muck  clay      r Problematic Soils   Muck (MLRA 147)  Prairie Redox (MLRA 147, 148)  tt Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface ain in Remarks)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1 NRCS Hydric A1 - Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Muc S4 - Sandy Gley Restrictive Layer	pgroup):  ption (Describe to Depth 1 7	Horizon  1 2 dicators (check her	cator or confirm the at  Color ( 10YR 10YR 10YR e if indicator \$5 - Sandy F \$6 - Stripper \$7 - Dark Su \$9 - Thin Da \$7 - Loamy F \$7 - Deplete \$7 - Deplete	Matrix Moist)  2/1  4/2    rs are not Redox d Matrix urface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	rs.) (Type: C=Cor  % 100 88 present  park Surface (MLRA 147, 148) trix ce face s	Col 10YR ):   @ (MLRA 147,	State	Mottles  % 12	Type  C asses (LRR N., A 122, 136) in Soils (MLRA 127, 147)	Location   M     Indicators fo  A10 - 2cm W  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam)  muck  clay      r Problematic Soils   Muck (MLRA 147)  Prairie Redox (MLRA 147, 148) tt Floodplain Soils (MLRA 136, 147) Shallow Dark Surface ain in Remarks)
SOILS  Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 1 NRCS Hydric A1 - Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gle Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth 1 7	Horizon  1 2 dicators (check her	cator or confirm the at  Color ( 10YR 10YR 10YR e if indicator \$5 - Sandy F \$6 - Stripper \$7 - Dark Su \$9 - Thin Da \$7 - Loamy F \$7 - Deplete \$7 - Deplete	Matrix Moist)  2/1  4/2    rs are not Redox d Matrix urface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	% 100 88 present surface (MLRA 147, 148 trix ce face s	Col 10YR ):   @ (MLRA 147,	State	Mottles  % 12	Type  C asses (LRR N., A 122, 136) in Soils (MLRA 127, 147)	Location   M     Indicators fo  A10 - 2cm W  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam)  muck  clay      r Problematic Soils   Muck (MLRA 147)  Prairie Redox (MLRA 147, 148) tt Floodplain Soils (MLRA 136, 147) Shallow Dark Surface ain in Remarks)



Project/Site:	Bellefonte Extension 138 k	V Line Rebuild P	roject			Wetland ID: Wetland 2 Sample Point SP03
V=0==4=10V						
VEGETATION		ase are non-native s	species.)			
Tree Stratum (P	Plot size: 30 ft radius)		0/ 0	Danisant	la d Otatua	Dominance Test Worksheet
1	Species Name	-	% Cover	Dominant 	Ind.Status	Dominance rest worksneet
1. 2.						Number of Demineral Consists that are OBL FACIAL as FAC.
						Number of Dominant Species that are OBL, FACW, or FAC:(A)
3.						Total Newshare of Descriptors Contains Assess All Objects (D)
4.						Total Number of Dominant Species Across All Strata:1 (B)
5.						Percent of Dominant Species That Are OBL, FACW, or
6.						FAC: 100.0% (A/B)
7.						Describer as Index Washinkant
8.						Prevalence Index Worksheet
9.						Total % Cover of: Multiply by:
10.		T-4-1 O				OBL spp. 0 x 1 = 0
		Total Cover =	0			FACW spp. 100
0 11 (0) 1 0	(5)					FAC spp. 0 x 3 = 0
	tratum (Plot size: 15 ft radius)					FACU spp. 0 x 4 = 0
1.						UPL spp0
2.						T-(-) 400 (A) 000 (B)
3.						Total 100 (A) 200 (B)
4.						December on Index D/A
5.						Prevalence Index = B/A = 2.000
6.						
7.						Hodronkodia Vanatatian Indiaataan
8.						Hydrophytic Vegetation Indicators:
9.						Yes ☑ □ No Rapid Test for Hydrophytic Vegetation
10.		T				Yes ☑ □ No Dominance Test is > 50%
		Total Cover =	0			Yes ☑ □ No Prevalence Index is ≤ 3.0 *
						Yes □ ☑ No Morphological Adaptations (Explain) *
	lot size: 5 ft radius)		400		E 4 6)4/	Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Lythrum salicaria		100	Υ	FACW	* Indicators of hydric soil and wetland hydrology must be
2.						present, unless disturbed or problematic.
3.						
4.						Definitions of Vegetation Strata:
5.						
6						Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.						height (DBH), regardless of height.
8.						
9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.
10.						II. lan.
11.						
12.						Herb - All herbaceous (non-woody) plants, regardless of size,
13.						and woody plants less than 3.28 ft. tall.
14.						
15.						Woody Vines - All woody vines greater than 3.28 ft. in height.
		Total Cover =	100			
Woody Vine Stra	atum (Plot size: 30 ft radius)					
1.						
2.						
3.						Hydrophytic Vegetation Present ☑ Yes ☐ No
4.						
5.						
		Total Cover =	0			
Remarks:						
Additional Re	emarks:					
Additional Re	mui no.					



Depth  O     NRCS Hydric  A1- Histosol  A2 - Histic Epip  A3 - Black Histi  A4 - Hydrogen  A5 - Stratified L  A10 - 2 cm Muc  A11 - Depleted  A12 - Thick Dan  S1 - Sandy Muc  S4 - Sandy Gle  Restrictive Layer  (If Observed)  Remarks:	edon c Sulfide .ayers ck (LRR N) Below Dark St rk Surface ck Mineral (LRR				present  ark Surface MLRA 147, 148 rix e ace		☐ F13 - Um ☐ F19 - Pied	a-Manganese Material Parent Material  1 Indicators of hydroph  Hydric Soil	asses (LRR N,	A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	muck
O	Soil Field In edon c Sulfide ayers ck (LRR N) Below Dark Sur rk Surface ck Mineral (LRR yed Matrix				present  ark Surface MLRA 147, 148 rix e ace	     ): 🗸		an-Manganese Mibric Surface (MLF) dmont Floodplaid Parent Materia	asses (LRR N,	Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	muck
O	Soil Field In				present	     ): 🗸			asses (LRR N,		muck
0 NRCS Hydric	     Soil Field In		    e if indicator S5 - Sandy F	      rs are not	   		     	           			muck
     				   	   				  		muck
    			  						  		muck
   				 	 		  	  	  		muck
0   											muck
0											muck 
0											muck
		1	10YR	4/3	300						
	Depth	Horizon	Color (		% 100		or (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
Тор	Bottom			Matrix				Mottles		·	Texture
		the depth needed to document the indic	cator or confirm the ab	sence of indicator	s.) (Type: C=Cor	centration, D=D	epletion, RM=Reduced Ma	atrix, CS=Covered/Coated	Sand Grains; Locat	ion: PL=Pore Lining, M=M	latrix)
Map Unit Name Taxonomy (Sul		Nolin silt loam, 0 to 3 perc	ent slopes, occ	casionally flo	oded S	Series Dr	ainage Class:				
Remarks:				-							
Describe Record	ded Data (stre	eam gauge, monitoring	well, aerial	photos, pre	evious insp	pections),	if available:		N/A		
Field Observar Surface Water Water Table Pr Saturation Pres	Present? resent?	☐ Yes ☑ No ☐ Yes ☑ No ☐ Yes ☑ No	Depth: Depth: Depth:		(in.) (in.) (in.)			Wetland Hyd	drology Pre	esent? 🗆	Yes 🗸 No
SUMMARY OF Hydrophytic Ve Wetland Hydro Remarks: HYDROLOGY Wetland Hydro Primary	egetation Pre elogy Present  cology Indicate  A1 - Surface A2 - High Wa A3 - Saturati B1 - Water M B2 - Sedimel B3 - Driff Dg B4 - Algal Ma B5 - Iron Dep	sent? ? ators (Check here if i Water ater Table on farks hospits bosits at or Crust	ndicators ar	□ Yes	sent ): B9 - Wate B13 - Aqu B14 - True C1 - Hydn C3 - Oxidi C4 - Prese	atic Fauna e Aquatic logen Sulfi zed Rhizo ence of Re ent Iron Re Muck Suri	Leaves a Plants de Odor spheres on Livin educed Iron duction in Tilled face	Hydric Soils Is This Samp	Secondary:	Within A Wetla B6 - Surface Sc B8 - Sparsely Ve B10 - Drainage B16 - Moss Trin C2 - Dry Seaso C8 - Crayfish Bi C9 - Saturation	□ Yes ☑ No and? ■ Yes ☑ No  oil Cracks egetated Concave Surface Patterns n Lines n Water Table urrows Visible on Aerial Imagery Stressed Plants ic Position quitard graphic Relief
		or Hydrology □ sign or Hydrology □ natu				Are	e normal circu	mstances pre   No	sent?	Township: Range:	T1N R18W Dir:
Are climatic/hyd	drologic cond	ditions on the site typ	ical for this	time of ye		xplain in rer	narks)	✓ Yes □	No	Section:	S 1
310pc (70).	Rise 1	Latituda:	38.49982		al Relief:			Datum:	NAD83	Sample Point: Community ID:	
Landform: Slope (%):	Nolin silt lo	am, 0 to 3 percent sl	opes, occas				Classification:	N/A			Wetland 2
Soil Unit: Landform:		lok		Invecti	gator #2:	Mott Do	nzlor			County: State:	Lawrence Ohio
Landform:				roject		Stant	ec Project #:	193707276		Date:	10/20/20

Wetland ID: Wetland 2 Sample Point SP04



Bellefonte Extension 138 kV Line Rebuild Project

Project/Site:

#### WETLAND DETERMINATION DATA FORM

1.						
2.						Number of Dominant Species that are OBL, FACW, or FAC:(A)
3.						
4.						Total Number of Dominant Species Across All Strata: (B)
5.						Percent of Dominant Species That Are OBL, FACW, or
6.						FAC: <u>0.0%</u> (A/B)
7.						
8.						Prevalence Index Worksheet
9.						Total % Cover of: Multiply by:
10.						OBL spp 0
		Total Cover =	0			FACW spp. 2
						FAC spp. 20 x 3 = 60
pling/Shrub S	stratum (Plot size: 15 ft radius)					FACU spp. 97 x 4 = 388
1.	Cercis canadensis		5	Υ	FACU	UPL spp 0
2.	Rubus allegheniensis		5	Υ	FACU	
3.	<del></del>					Total 119 (A) 452 (B)
4.	<del></del>					
5.						Prevalence Index = B/A = 3.798
6.						
7.						
8.						Hydrophytic Vegetation Indicators:
9.						Yes □ ☑ No Rapid Test for Hydrophytic Vegetation
10.						Yes □ ☑ No Dominance Test is > 50%
		Total Cover =	10			Yes □ ☑ No Prevalence Index is ≤ 3.0 *
						Yes □ ☑ No Morphological Adaptations (Explain) *
rb Stratum (P	Plot size: 5 ft radius)					Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Solidago canadensis		85	Υ	FACU	
2.	Symphyotrichum pilosum		10	N	FAC	* Indicators of hydric soil and wetland hydrology must be
3.	Toxicodendron radicans		10	N	FAC	present, unless disturbed or problematic.
4.	Asclepias syriaca		2	N	FACU	Definitions of Vegetation Strata:
5.	Lysimachia quadriflora		2	N	FACW	
6						Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.						height (DBH), regardless of height.
8.						
9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
10.						ft. tall.
11.						
12.						Herb - All herbaceous (non-woody) plants, regardless of size,
13.						and woody plants less than 3.28 ft. tall.
14.						
15.						Woody Vines - All woody vines greater than 3.28 ft. in height.
10.		Total Cover =	109			Troody vinos
		Total Gover =	103			
oody Vine Str	atum (Plot size: 30 ft radius)					
1.						
2.						
3.						Hydrophytic Vegetation Present □ Yes ☑ No
4.						Inydrophytic vegetation i resent 1 163 11 100
5.	<del></del>					
J.	<del></del>	Total Cover =	0			
		Total Cover =	U			
emarks:						
dditional Re	emarks:					



Project/Site:		Extension 138 kV Lin	e Rebuild F	roject		Stant	ec Project #:	193707276		Date:	10/20/20
Applicant:	AEP	lak		lavost		Mott Do				County:	Lawrence
Investigator #1:		ıек am, 0 to 3 percent slo			igator #2:		nzier Classification:	NI/A		State: Wetland ID:	Ohio Wetland 2
Soil Unit: Landform:	Depression		opes, occas		al Relief:			IN/A		Sample Point:	
Slope (%):	1		38.49949		ongitude:			Datum:	NAD83	Community ID:	
		ditions on the site typi						✓ Yes □	No	Section:	S 1
		or Hydrology □ sign			ai: (II 110, E			mstances pre		Township:	T1N
		or Hydrology   natu				Aid		□ No	Sent:	Range:	R18W Dir:
SUMMARY OF		or riyarology = riata	rally proble	matic:			- 163	- NO		Range.	KTOW DII.
Hydrophytic Ve		sent?		Yes	. □ No			Hydric Soils I	Present?		
Wetland Hydrol				☑ Yes						Vithin A Wetla	
Remarks:	ogy : 1000111							io rino Gamp			
HYDROLOGY											
		ators (Check here if i	ndicators ar	re not pre	sent ):				Secondary:		
Primary:				_						B6 - Surface So	
<u> </u>	A1 - Surface A2 - High Wa					er-Stained uatic Fauna				B8 - Sparsely Ve B10 - Drainage	getated Concave Surface
✓	A2 - Figit Wa					e Aquatic I				B16 - Moss Trin	
	B1 - Water M					ogen Sulfi				C2 - Dry Season	
	B2 - Sedimer						spheres on Livir	ng Roots		C8 - Crayfish Bu	
	B3 - Drift Dep						educed Iron	Caila			Visible on Aerial Imagery
	B4 - Algal Ma B5 - Iron Der					ent iron Re Muck Surf	duction in Tilled	Solis		D1 - Stunted or D2 - Geomorph	Stressed Plants
ם נ		on Visible on Aerial Imag	erv			plain in Re				D3 - Shallow Ac	
			, - ,				.,			D4 - Microtopog	raphic Relief
									✓	D5 - FAC-Neutr	al Test
Field Observat	ions:										
Surface Water I	Present?	✓ Yes □ No	Depth:	4	(in.)			Wetland Hyd	drology Br	scont?	Yes □ No
Water Table Pr	esent?	✓ Yes □ No	Depth:	0	(in.)			Welland Hyd	arology Fit	zaciit: 🗠	163 L NO
Saturation Pres	ent?	Yes No	Depth:	0	(in.)						
Describe Record	ed Data (stre	eam gauge, monitoring	well. aerial	photos, pro	evious ins	pections).	if available:		N/A		
Remarks:	,	0 0 ,	,		'	, ,,					
SOILS											
Map Unit Name	:	Nolin silt loam, 0 to 3 perc	ent slopes, occ	casionally flo	oded	Series Dr	ainage Class:				
Taxonomy (Sub											
		the depth needed to document the indic	ator or confirm the ab		s.) (Type: C=Co	ncentration, D=D	epletion, RM=Reduced Ma		Sand Grains; Locat	on: PL=Pore Lining, M=M	
Тор	Bottom			Matrix				Mottles			Texture
Depth	Depth	Horizon	Color (		%		or (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
0	1	1	10YR	2/1	100						muck
1	6	2	10YR	5/1	90	10YR	5/6	10	С	M	clay
			-								
NRCS Hydric	Soil Field In	dicators (check here	if indicator	rs are not	nresent	): 🗆		<u> </u>		Indicators for	r Problematic Soils <sup>1</sup>
A1- Histosol	Son i leiu iii	Check here	S5 - Sandy F		present	). <u> </u>	□ F12 - Iron	n-Manganese Ma	96696 // DD N		
A2 - Histic Epipe	edon	Ħ	S6 - Stripped					bric Surface (MLR			rairie Redox (MLRA 147, 148)
A3 - Black Histic			S7 - Dark Su					dmont Floodplai			t Floodplain Soils (MLRA 136, 147)
A4 - Hydrogen S			S8 - Polyvalu							_	Shallow Dark Surface
A5 - Stratified La		Н	S9 - Thin Da			3)	☐ F21 - Red	d Parent Materia	MLRA 127, 147	Other (Expla	in in Remarks)
A10 - 2 cm Muc A11 - Depleted		urface	F2 - Loamy ( F3 - Deplete		rix						
A12 - Thick Dar		illace	F6 - Redox [		·e						
S1 - Sandy Muc		N, MLRA 147, 148)	F7 - Deplete								
S4 - Sandy Gley	ed Matrix		F8 - Redox I	Depressions	S			1 Indicators of hydrophy	tic vegetation and v	vetland hydrology must b	be present, unless disturbed or problematic.
Restrictive Layer (If Observed)	Type:	rock		Depth:	6			Hydric Soil I	Present?	<b>/</b>	Yes □ No
Remarks:											
rtomanto.											



Project/Site:	Bellefonte Extension 138 kV Line Rebuild	l Project			Wetland ID: Wetland 2 Sample Point SP05
VEGETATION	(Species identified in all uppercase are non-nativ	e species.)			
Tree Stratum (Ple	ot size: 30 ft radius)				
_	<u>Species Name</u>	% Cover	_	Ind.Status	Dominance Test Worksheet
1.					
2.					Number of Dominant Species that are OBL, FACW, or FAC:(A)
3.					
4.					Total Number of Dominant Species Across All Strata:(B)
5.					Percent of Dominant Species That Are OBL, FACW, or
6.					FAC: <u>100.0%</u> (A/B)
7.					
8.					Prevalence Index Worksheet
9.					Total % Cover of: Multiply by:
10.					OBL spp. 30 x 1 = 30
	Total Cover	= 0			FACW spp. 70 X 2 = 140
					FAC spp. 0 x 3 = 0
Sapling/Shrub Str	ratum (Plot size: 15 ft radius)				FACU spp. 0 x 4 = 0
1.	Salix interior	5	N	FACW	UPL spp. 0 x 5 = 0
2.	Cephalanthus occidentalis	30	Y	OBL	
3.	Platanus occidentalis	5	N	FACW	Total 100 (A) 170 (B)
4.					10tai (A) 170 (B)
5.					Prevalence Index = B/A = <b>1.700</b>
6.					Flevalence index = B/A = 1.700
7.					
					I budroukusia Vanatatian Indiaatana.
8.					Hydrophytic Vegetation Indicators:
9.					Yes ☑ □ No Rapid Test for Hydrophytic Vegetation
10.					Yes ☑ □ No Dominance Test is > 50%
	Total Cover	= 40			Yes ☑ □ No Prevalence Index is ≤ 3.0 *
					Yes □ ☑ No Morphological Adaptations (Explain) *
Herb Stratum (Plo	ot size: 5 ft radius)				Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Lythrum salicaria	60	Υ	FACW	* Indicators of hydric soil and wetland hydrology must be
2.					present, unless disturbed or problematic.
3.					present, unless disturbed of problematic.
4.					Definitions of Vegetation Strata:
5.					
6					Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.					height (DBH), regardless of height.
8.					
9.					Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
10.					ft. tall.
11.					
12.					Herb - All herbaceous (non-woody) plants, regardless of size,
13.					and woody plants less than 3.28 ft. tall.
14.					
					Woody Vines - All woody vines greater than 3.28 ft. in height.
15.	 T-1-1 O				YYOOGY VIIIeS - All WOOGY VIIIeS Gleatel trial 3.20 ft. in height.
1	Total Cover	= 60			
	um (Plot size: 30 ft radius)				
1.					
2.					
3.					Hydrophytic Vegetation Present □ Yes □ No
4.					
5.					
	Total Cover	= 0			
Remarks:			·		
1					
1					
Additional Rei	marks:				
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I					



Project/Site:		Extension 138 kV Lin	ie Rebuild F	Project		Stant	ec Project #:	193707276	3	Date:	10/20/20
Applicant:	AEP									County:	Lawrence
Investigator #1:					igator #2:					State:	Ohio
Soil Unit:		, 0 to 3 percent slopes, occ	casionally floor				Classification:	N/A			Wetland 3
Landform:	Depression				cal Relief:					Sample Point:	
Slope (%):	1		38.49857		ongitude:				: NAD83	Community ID:	
		ditions on the site typ			ar? (If no, e			✓ Yes □	No	Section:	S 1
		or Hydrology □ sign				Are	e normal circu		esent?	Township:	T1N
		or Hydrology □ natu	ırally proble	matic?			Yes	. □ No		Range:	R18W Dir:
SUMMARY OF											
Hydrophytic Ve				Yes				Hydric Soils			
Wetland Hydro	logy Present	.?		Yes	□ No	1		Is This Sam	pling Point \	Within A Wetla	and? <b>□ Yes ■ No</b>
Remarks:											
HYDROLOGY											
Wetland Hvdr	ology Indica	ators (Check here if i	ndicators a	re not pre	sent ):				Secondary:		
Primary					,						oil Cracks
	A1 - Surface			✓		er-Stained					egetated Concave Surface
	A2 - High Wa					uatic Faun				B10 - Drainage	
	A3 - Saturation B1 - Water M					e Aquatic l rogen Sulfi			✓	B16 - Moss Trir C2 - Dry Seaso	
	B2 - Sedime						ae Ouoi spheres on Livir	na Roots		C8 - Cravfish B	
	B3 - Drift De						educed Iron	.g			Visible on Aerial Imagery
	B4 - Algal Ma						eduction in Tilled	Soils		D1 - Stunted or	Stressed Plants
	B5 - Iron Der					Muck Surf				D2 - Geomorph	
	B7 - Inundati	on Visible on Aerial Imag	gery		Other (Ex	oplain in Re	emarks)			D3 - Shallow Ac D4 - Microtopoo	
										D5 - FAC-Neuti	
Field Observat	lione:										
		□ Yes ☑ No	Donth		(in.)						
Surface Water			Depth:		٠,			Wetland Hy	drology Pr	esent?	Yes □ No
Water Table Pr Saturation Pres		☐ Yes ☑ No ☐ Yes ☑ No	Depth:		(in.) (in.)						
			Depth:		, ,						
Describe Record	led Data (str	eam gauge, monitoring	y well, aerial	photos, pr	evious ins	pections),	if available:		N/A		
Damarka											
Remarks:							<u>'</u>				
SOILS											
SOILS Map Unit Name		Nolin silt loam, 0 to 3 percen	it slopes, occasi	ionally flooded	d :	Series Dr	rainage Class:				
SOILS Map Unit Name Taxonomy (Sub	ogroup):						rainage Class:				
SOILS Map Unit Name Taxonomy (Sul Profile Descrip	ogroup):	Nolin silt loam, 0 to 3 percenthe depth needed to document the indice					rainage Class:	atrix, CS=Covered/Coate	od Sand Grains; Local	tion: PL=Pore Lining, M=M	
SOILS Map Unit Name Taxonomy (Sul Profile Descrip Top	ogroup): otion (Describe to Bottom		cator or confirm the al	bsence of indicator	rs.) (Type: C=Co	ncentration, D=D	rainage Class:	atrix, CS=Covered/Coate	nd Sand Grains; Local	tion: PL=Pore Lining, M=M	Texture
SOILS Map Unit Name Taxonomy (Sul Profile Descrip Top Depth	ogroup): otion (Describe to Bottom Depth		cator or confirm the al	bsence of indicator Matrix (Moist)	rs.) (Type: C=Co	ncentration, D=D	rainage Class:	atrix, CS=Covered/Coate  Mottles	nd Sand Grains; Local	tion: PL=Pore Lining, M=N	Texture (e.g. clay, sand, loam)
SOILS Map Unit Name Taxonomy (Sul Profile Descrip Top	ogroup): otion (Describe to Bottom	the depth needed to document the indic	cator or confirm the al	bsence of indicator	rs.) (Type: C=Co	ncentration, D=D	rainage Class:	atrix, CS=Covered/Coate	1	•	Texture
SOILS Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	ogroup): otion (Describe to Bottom Depth	the depth needed to document the indic	cator or confirm the al	bsence of indicator Matrix (Moist)	rs.) (Type: C=Co	ncentration, D=D	rainage Class:  sepletion, RM=Reduced Mile or (Moist)	atrix, CS=Covered/Coate  Mottles	Туре	Location	Texture (e.g. clay, sand, loam)
SOILS Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0	pgroup):  otion (Describe to  Bottom  Depth  1	the depth needed to document the indic  Horizon  1	Color (	bsence of indicator Matrix (Moist) 2/1	rs.) (Type: C=Co	ncentration, D=D	rainage Class:  repletion, RM=Reduced Mr.  or (Moist)	atrix, CS=Covered/Coate  Mottles  %	Type 	Location 	Texture (e.g. clay, sand, loam) silty clay
SOILS Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	Degroup): Describe to Depth  1 7	the depth needed to document the indices the depth needed to document the indices the indices that the indic	Color ( 10YR 10YR	Matrix (Moist)  2/1  5/1	% 100 90	Col	rainage Class:  Pepletion, RM=Reduced Ma  or (Moist)   4/6	atrix, CS=Covered/Coate  Mottles  % 10	Type  C	Location  M	Texture (e.g. clay, sand, loam) silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7	ogroup):  otion (Describe to Bottom Depth 1 7 16	Horizon  1 2 3	Color ( 10YR 10YR 10YR	Matrix (Moist)  2/1  5/1  4/2	% 100 90 92	Col 5YR 10YR	rainage Class:  sepletion, RM=Reduced Ma  or (Moist)   4/6  5/8	atrix, CS=Covered/Coate  Mottles  % 10 8	Type C	Location  M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7	ogroup):  otion (Describe to Bottom Depth 1 7 16	Horizon  1  2  3	Color ( 10YR 10YR 10YR	bsence of indicator Matrix (Moist)  2/1  5/1  4/2	% 100 90 92	Col 5YR 10YR	rainage Class:  repletion, RM=Reduced Mr  or (Moist)   4/6  5/8	Mottles  Mottles  % 10 8	Type C C	Location M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7	ogroup): otion (Describe to Bottom Depth 1 7 16	Horizon  1 2 3	Color ( 10YR 10YR 10YR	Matrix (Moist)  2/1  5/1  4/2	% 100 90 92	Col 5YR 10YR	rainage Class:  Pepletion, RM=Reduced Ma  or (Moist)   4/6  5/8	matrix, CS=Covered/Coate  Mottles  %   10  8	Type C C	Location M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7	ogroup):  otion (Describe to  Bottom Depth  1  7  16	Horizon  1 2 3	Color ( 10YR 10YR 10YR	bsence of indicator Matrix (Moist) 2/1 5/1 4/2	% 100 90 92	Col 5YR 10YR	rainage Class:  repletion, RM=Reduced Mr  or (Moist)   4/6  5/8	matrix, CS=Covered/Coate  Mottles  %   10  8	Type C C	Location M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7	ogroup):  otion (Describe to  Bottom Depth  1  7  16	Horizon  1 2 3	Color ( 10YR 10YR 10YR	Matrix (Moist)  2/1  5/1  4/2	% 100 90 92	COI 5YR 10YR	rainage Class:  repletion, RM=Reduced Mr  or (Moist)   4/6  5/8	matrix, CS=Covered/Coate  Mottles  %   10  8	Type C C	Location  M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7	ogroup):  otion (Describe to  Bottom Depth  1  7  16	Horizon  1 2 3	Color ( 10YR 10YR 10YR	Matrix (Moist) 2/1 5/1 4/2 rs are not	% 100 90 92	Col 5YR 10YR	rainage Class:  Pepletion, RM=Reduced Mi  Or (Moist)   4/6  5/8	matrix, CS=Covered/Coate  Mottles  % 10 8	Type C C	Location  M M Indicators fo	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay r Problematic Soils 1
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric	ogroup):  otion (Describe to Depth 1 7 16 Soil Field In	Horizon  1 2 3	Color ( 10YR 10YR 10YR 10YR e if indicato	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox	% 100 90 92	COI 5YR 10YR	rainage Class:  or (Moist)   4/6  5/8	matrix, CS=Covered/Coate  Mottles  %   10  8	Type  C C	Location  M M Indicators fo	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi	pogroup):  ption (Describe to Depth	Horizon  1 2 3	Color ( 10YR 10YR 10YR 10YR e if indicato \$5 - Sandy   \$5 - Strippes \$7 - Dark \$6	Matrix Moist)  2/1  5/1  4/2    rs are not Redox d Matrix d Matrix	% 100 90 92 present	Col 5YR 10YR ):	rainage Class:  repletion, RM=Reduced Marcor (Moist) 4/6 5/8	Mottles  Mottles  %   10  8      m-Manganese N	Type  C C Masses (LRR N. R. A 122, 136)  In Soils (MLRA	Location  M M Indicators fo A10 - 2 con M A16 - Coast F F19 - Piedmon	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay r Problematic Soils  Muck (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147)
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen	ogroup):  otion (Describe to Depth	Horizon  1 2 3	Color ( 10YR 10YR 10YR 10YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark \$S\$ - Polyvali	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  % 10 8	Type  C C	Location  M M Indicators fo A10 - 2cm M A16 - Coast F 19 - Piedmon TF12 - Very	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L	ogroup):  otion (Describe to Depth 1 7 16 Soil Field Ir edon Co Sulfide ayers	Horizon  1 2 3	Color ( 10YR 10YR 10YR 10YR e if indicato \$5 - Sandy   \$6 - Stripper \$7 - Dark St; \$8 - Polyvali \$9 - Thin Da	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ure Below D ark Surface	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  Mottles  %   10  8      m-Manganese Mubric Surface (ML	Type  C C	Location  M M Indicators fo A10 - 2cm M A16 - Coast F 19 - Piedmon TF12 - Very	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay r Problematic Soils  Muck (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147)
SOILS  Map Unit Name Taxonomy (Sult Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc	ogroup):  ption (Describe to Depth	Horizon  1 2 3	Color ( 10YR 10YR 10YR 10YR e if indicato \$5 - Sandy   \$6 - Stripper \$7 - Dark \$1 \$8 - Polyvali \$9 - Thin Da \$F2 - Loamy	Matrix Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  % 10 8	Type  C C	Location  M M Indicators fo A10 - 2cm M A16 - Coast F 19 - Piedmon TF12 - Very	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted	pogroup):  ption (Describe to Depth	Horizon  1 2 3	Color ( 10YR 10YR 10YR 10YR 10YR 5 e if indicato \$5 - Sandy   \$6 - Stripper \$7 - Dark St \$8 - Polyval \$9 - Thin Da \$9 - Thin Da \$1 - Color ( \$1 - Color ( \$1 - Color ( \$2 - Color ( \$3 - Color ( \$3 - Color ( \$4 - Color ( \$5	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matirx	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  % 10 8	Type  C C	Location  M M Indicators fo A10 - 2cm M A16 - Coast F 19 - Piedmon TF12 - Very	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar	pgroup):  ption (Describe to Depth 1 7 16 Soil Field Ir edon C Sulfide ayers k (LRR N) Below Dark Sik Surface	Horizon  1 2 3 dicators (check here	Color ( 10YR 10YR 10YR 10YR 10YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark St \$8 - Polyval \$9 - Thin Da \$7 - Loamy \$7 - Loamy \$7 - Deplete \$7 - Redox	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D Dark Surface Gleyed Matix Dark Surface	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  % 10 8	Type  C C	Location  M M Indicators fo A10 - 2cm M A16 - Coast F 19 - Piedmon TF12 - Very	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted	pogroup):  ption (Describe to Depth	Horizon  1 2 3 dicators (check here	Color ( 10YR 10YR 10YR 10YR 10YR 5 e if indicato \$5 - Sandy   \$6 - Stripper \$7 - Dark St \$8 - Polyval \$9 - Thin Da \$9 - Thin Da \$1 - Color ( \$1 - Color ( \$1 - Color ( \$2 - Color ( \$3 - Color ( \$3 - Color ( \$4 - Color ( \$5	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mated Matrix Dark Surface d Matrix	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  Mottles  %   10  8         Manganese Matric Surface (ML) dmont Floodpla	Type  C C Masses (LRR N., RA 122, 136)  In Soils (MLRA 127, 144)	Location  M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dat S1 - Sandy Muc S4 - Sandy Gie Restrictive Layer	pgroup):  ption (Describe to Depth 1 7 16 16 16 16 16 16 16 16 16 16 16 16 16	Horizon  1 2 3 dicators (check here	cator or confirm the all	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Matr Dark Surface d Dark Surface down to the control of the control o	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  % 10 8 Manganese Mabric Surface (ML) dmont Floodpla d Parent Materia	Type  C C C Masses (LRR N.T., RA 122, 136)  Inin Soils (MLRA 127, 145)  All (MLRA 127, 145)	Location  M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gle	pogroup):  ption (Describe to Depth	Horizon  1 2 3 dicators (check here	cator or confirm the all	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mated Matrix Dark Surface d Matrix	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  Mottles  %   10  8         Manganese Matric Surface (ML) dmont Floodpla	Type  C C C Masses (LRR N.T., RA 122, 136)  Inin Soils (MLRA 127, 145)  All (MLRA 127, 145)	Location  M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dat S1 - Sandy Muc S4 - Sandy Gie Restrictive Layer	pgroup):  ption (Describe to Depth 1 7 16 16 16 16 16 16 16 16 16 16 16 16 16	Horizon  1 2 3 dicators (check here	cator or confirm the all	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Matr Dark Surface d Dark Surface down to the control of the control o	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  % 10 8 Manganese Mabric Surface (ML) dmont Floodpla d Parent Materia	Type  C C C Masses (LRR N.T., RA 122, 136)  Inin Soils (MLRA 127, 145)  All (MLRA 127, 145)	Location  M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Ge Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth 1 7 16 16 16 16 16 16 16 16 16 16 16 16 16	Horizon  1 2 3 dicators (check here	cator or confirm the all	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Matr Dark Surface d Dark Surface down to the control of the control o	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  % 10 8 Manganese Mabric Surface (ML) dmont Floodpla d Parent Materia	Type  C C C Masses (LRR N.T., RA 122, 136)  Inin Soils (MLRA 127, 145)  All (MLRA 127, 145)	Location  M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 7 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Ge Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth 1 7 16 16 16 16 16 16 16 16 16 16 16 16 16	Horizon  1 2 3 dicators (check here	cator or confirm the all	Matrix (Moist)  2/1  5/1  4/2    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Matr Dark Surface d Dark Surface down to the control of the control o	% 100 90 92 present	Col 5YR 10YR ): □	rainage Class:  or (Moist)   4/6  5/8       F12 - Irror  F13 - Um  F19 - Pier	Mottles  % 10 8 Manganese Mabric Surface (ML) dmont Floodpla d Parent Materia	Type  C C C Masses (LRR N.T., RA 122, 136)  Inin Soils (MLRA 127, 145)  All (MLRA 127, 145)	Location  M M	Texture (e.g. clay, sand, loam) silty clay silty clay silty clay

Wetland ID: Wetland 3 Sample Point SP06



Bellefonte Extension 138 kV Line Rebuild Project

Project/Site:

#### WETLAND DETERMINATION DATA FORM

,	Plot size: 30 ft radius) Species Name		% Cover	Dominant	Ind.Status	Dominance Test Worksheet
1.	Acer saccharinum	=	90	Y	FACW	
2.	Fraxinus pennsylvanica		5	N		Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)
3.	Quercus palustris		5	N	FACW	( ty
4.						Total Number of Dominant Species Across All Strata: 2 (B)
5.						···
						Percent of Dominant Species That Are OBL, FACW, or
6.						FAC: 100.0% (A/B)
7.						
8.						Prevalence Index Worksheet
9.						Total % Cover of: Multiply by:
10.						OBL spp. $0   x   1 = 0$
		Total Cover =	100			FACW spp. 110 X 2 = 220
						FAC spp. 20 x 3 = 60
anling/Shruh 9	Stratum (Plot size: 15 ft radius)					FACU spp. 0 x 4 = 0
1.						$\begin{array}{cccccccccccccccccccccccccccccccccccc$
2.						от Е эрр х о =
						T + 1 (0) (A) (D)
3.						Total 130 (A) 280 (B)
4.	<del></del>					
5.	<del></del>					Prevalence Index = B/A = 2.154
6.						
7.	<b></b>				1	
8.						Hydrophytic Vegetation Indicators:
9.						Yes ☑ □ No Rapid Test for Hydrophytic Vegetation
10.						Yes □ No Dominance Test is > 50%
10.		Total Cover =	0			Yes ☑ □ No Prevalence Index is ≤ 3.0 *
		Total Cover =	U			
						Yes □ ☑ No Morphological Adaptations (Explain) *
erb Stratum (F	Plot size: 5 ft radius)					Yes 🗆 🗹 No Problem Hydrophytic Vegetation (Explain) *
1.	Laportea canadensis		15	Υ	FAC	* Indicators of hydric soil and wetland hydrology must be
2.	Lysimachia nummularia		8	N	<b>FACW</b>	present, unless disturbed or problematic.
3.	Campsis radicans		5	N	FAC	present, unless disturbed of problematic.
4.	Bidens frondosa		2	N	FACW	Definitions of Vegetation Strata:
5.						
6						Tree - Was de alente 2 in (7 Com) anno 1 in diameter et based
7.						Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
						noigh (2217), rogardiose st noight.
8.						- "
9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.
10.						r. tan.
11.						
12.						Herb - All herbaceous (non-woody) plants, regardless of size,
13.						and woody plants less than 3.28 ft. tall.
14.						
15.						Woody Vines - All woody vines greater than 3.28 ft. in height.
13.		Total C				Troody Tiles - 7. Hosely Tiles greater than 5.20 th in height.
		Total Cover =	30			
	ratum (Plot size: 30 ft radius)					
1.						
2.						
3.		<del></del>				Hydrophytic Vegetation Present ☑ Yes ☐ No
4.						
5.						
<u> </u>		Total Cover =	0			
		Total Cover =				
emarks:						
		<del></del>				
dditional R	emarks:					



#### WETLAND DETERMINATION DATA FORM Eastern Mountains and Piedmont Region

Drainat/Cita.											
Project/Site:	Bellefonte l	Extension 138 kV Lin	e Rebuild F	Project		Stant	tec Project #:	193707276		Date:	10/20/20
Applicant:	AEP									County:	Lawrence
Investigator #1	· Aaron Kwo	lek		Invest	igator #2:	Matt De	enzler			State:	Ohio
Soil Unit:		am, 0 to 3 percent sle	2000 0000				Classification:	NI/A		Wetland ID:	Wetland 3
		am, o to a percent si	opes, occas					IN/A			
Landform:	Rise				cal Relief:			_		Sample Point:	
Slope (%):	3		38.49860		.ongitude:				NAD83	Community ID:	UPL
Are climatic/hyd	drologic cond	ditions on the site typ	ical for this	time of ye	ear? (If no, e	xplain in re	marks)	✓ Yes	No	Section:	S 1
		or Hydrology □ sign					e normal circu	mstances pre	sent?	Township:	T1N
		or Hydrology ☐ natu								Range:	R18W Dir:
		or riyurology — riatu	rally proble	matic:			_ 100			italige.	KIOW DII
SUMMARY OF				_ ,							
Hydrophytic Ve				☐ Yes				Hydric Soils			☐ Yes ☑ No
Wetland Hydro	logy Present	?		☐ Yes	s 🗹 No			Is This Samp	oling Point	Within A Wetla	and? 📮 Yes 🛂 No
Remarks:											
LIVEROLOGY											
HYDROLOGY											
Wetland Hydr	ology Indica	ators (Check here if i	ndicators a	re not pre	sent ):				Secondary:		
Primary		(			,					B6 - Surface So	nil Cracks
	A1 - Surface	Water			B9 - Wate	er-Stained	Leaves				egetated Concave Surface
	A2 - High Wa				B13 - Aqu					B10 - Drainage	
					B14 - True					B16 - Moss Trin	
	B1 - Water M				C1 - Hvdr						
							ospheres on Livir	na Roots			
							educed Iron	.9			Visible on Aerial Imagery
							eduction in Tilled	Soils		D1 - Stunted or	
					C7 - Thin						
		on Visible on Aerial Imag	gery		Other (Ex	plain in Re	emarks)				
		`	,		`	•	,			D4 - Microtopog	
										D5 - FAC-Neutr	al Test
Field Observa	tions										
Surface Water		☐ Yes ☑ No	Depth:	:	(in.)			Wetland Hy	drology Pr	esent?	Yes 🗵 No
Water Table Pr	resent?	☐ Yes ☑ No	Depth:	:	(in.)						
Saturation Pres	sent?	☐ Yes ☑ No	Depth:	:	(in.)						
				1 1		\			11/A		
Luescrine Record	aed Data (stre	eam daude, monitoring	IWALI SALISI								
	•	sam gaage, memering	wen, aenar	priotos, pr	evious insp	pections)	, if available:		N/A		
Remarks:	`	oam gaage, memering	won, acriai	priotos, pr	evious insp	pections)	, if available:		N/A		
		<u> </u>	wen, dendi	priotos, pr	evious insp	pections)	, if available:		N/A		
Remarks:	,	gaage, me.me.mg	well, della	priotos, pr	evious insp	pections)	, if available:		N/A		
Remarks: SOILS									N/A		
Remarks:  SOILS  Map Unit Name	e:	Nolin silt loam, 0 to 3							N/A		
Remarks:  SOILS  Map Unit Name Taxonomy (Sul	e: bgroup):	Nolin silt loam, 0 to 3	3 percent sl	opes, occ	asionally	Beriels (D	rainage Class:				
Remarks:  SOILS  Map Unit Name Taxonomy (Sul	e: bgroup):	Nolin silt loam, 0 to 3	3 percent sl	opes, occ	asionally	Beriels (D	rainage Class:			tion: PL=Pore Lining, M=M	atrix)
Remarks:  SOILS  Map Unit Name Taxonomy (Sul	e: bgroup):		3 percent sl	opes, occ	asionally	Beriels (D	rainage Class:			tion: PL=Pore Lining, M=M	atrix) Texture
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip	e: bgroup): ption (Describe to Bottom	Nolin silt loam, 0 to 3	3 percent sl	opes, occ bsence of indicato Matrix	casionally \$	Beries (D)	rainage Class:	latrix, CS=Covered/Coated	d Sand Grains; Loca		Texture
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth	e: bgroup): ption (Describe to Bottom Depth	Nolin silt loam, 0 to 3 the depth needed to document the indice	B percent sl	opes, occ bsence of indicato Matrix (Moist)	rs.) (Type: C=Cor	Beries (D)	rainage Class: Depletion, RM=Reduced M. Ior (Moist)	Mottles	d Sand Grains; Loca	Location	Texture (e.g. clay, sand, loam)
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0	e: bgroup): ption (Describe to Bottom Depth	Nolin silt loam, 0 to 3 the depth needed to document the indice Horizon 1	3 percent sl cator or confirm the al Color ( 10YR	opes, occubsence of indicator Matrix (Moist) 2/2	casionally \$  rs.) (Type: C=Cor  %  100	Beries (D)  ncentration, D=t  Co	rainage Class: Depletion, RM=Reduced M. lor (Moist)	Mottles %	d Sand Grains; Loca	Location 	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1	e: bgroup): ption (Describe to Bottom Depth	Nolin silt loam, 0 to 3 the depth needed to document the indice	B percent sl	opes, occ beence of indicato Matrix (Moist) 2/2 4/1	easionally \$  rs.) (Type: C=Cor  %  100  100	Beries (D)	rainage Class: Depletion, RM=Reduced M. Ior (Moist)	Mottles	d Sand Grains; Loca	Location	Texture (e.g. clay, sand, loam)
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0	e: bgroup): ption (Describe to Bottom Depth	Nolin silt loam, 0 to 3 the depth needed to document the indice Horizon 1	3 percent sl cator or confirm the al Color ( 10YR	opes, occubsence of indicator Matrix (Moist) 2/2	casionally \$  rs.) (Type: C=Cor  %  100	Beries (D)  ncentration, D=t  Co	rainage Class: Depletion, RM=Reduced M. lor (Moist)	Mottles %	d Sand Grains; Loca	Location 	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1	e: bgroup): ption (Describe to Bottom Depth 1	Nolin silt loam, 0 to 3 the depth needed to document the indice Horizon 1 2	3 percent si sator or confirm the al Color ( 10YR 10YR	opes, occ beence of indicato Matrix (Moist) 2/2 4/1	easionally \$  rs.) (Type: C=Cor  %  100  100	Co	rainage Class: Depletion, RM=Reduced Milor (Moist)	Mottles %	Type	Location 	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1	e: bgroup): ption (Describe to Bottom Depth 1 16	Nolin silt loam, 0 to 3 the depth needed to document the indice Horizon 1 2	Spercent si cator or confirm the all Color ( 10YR 10YR	opes, occompose, occo	% 100 100	Beries (D)	rainage Class: Depletion, RM=Reduced M.  Ior (Moist)	Mottles  %	I Sand Grains; Loca	Location  	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1	e: bgroup): ption (Describe to Bottom Depth 1 16	Nolin silt loam, 0 to 3 the depth needed to document the indice Horizon 1 2	Spercent si cator or confirm the all Color ( 10YR 10YR 	opes, occ  Matrix (Moist)  2/2  4/1	% 100 100	Beriels (D)	rainage Class: Depletion, RM=Reduced M.  Ior (Moist)	Mottles  %	I Sand Grains; Loca	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1	e: bgroup): ption (Describe to Bottom Depth 1 16	Nolin silt loam, 0 to 3 the depth needed to document the indice Horizon 1 2	Spercent si cator or confirm the all Color ( 10YR 10YR 	opes, occ  Matrix (Moist)  2/2  4/1	% 100 100	Series (D)	rainage Class: Depletion, RM=Reduced M.  Ior (Moist)	Mottles  %	I Sand Grains; Loca	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1	e: bgroup): ption (Describe to Bottom Depth 1 16	Nolin silt loam, 0 to 3 the depth needed to document the indice Horizon 1 2	Spercent si cator or confirm the all Color ( 10YR 10YR 	opes, occ  Matrix (Moist)  2/2  4/1	% 100 100	Beriels (D)	rainage Class: Depletion, RM=Reduced M.  Ior (Moist)	Mottles  %	I Sand Grains; Loca	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1	e: bgroup): ption (Describe to Bottom Depth 1 16	Nolin silt loam, 0 to 3 the depth needed to document the indice Horizon 1 2	Spercent si cator or confirm the al Color ( 10YR 10YR  	opes, occ Matrix Moist)  2/2  4/1	% 100 100	Series (D)	rainage Class: Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	I Sand Grains: Loca Type	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1	e: bgroup): ption (Describe to Depth 1 16	Nolin silt loam, 0 to 3 the depth needed to document the indice  Horizon  1 2	Spercent sl cator or confirm the al Color ( 10YR 10YR	opes, occ Matrix (Moist)  2/2  4/1	% 100 100	Series Discontration, D=E	rainage Class: Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	I Sand Grains: Loca Type	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric	e: bgroup): ption (Describe to Depth 1 16	Nolin silt loam, 0 to 3 the depth needed to document the indice Horizon 1 2	Spercent sl cator or confirm the al Color ( 10YR 10YR er if indicato	opes, occ Matrix (Moist)  2/2  4/1     rs are not	% 100 100	Series (D)	rainage Class:  Depletion, RM=Reduced Mi  Ior (Moist)	Mottles  Mottles  %	I Sand Grains; Loca	Location Indicators fo	Texture (e.g. clay, sand, loam) silty clay silty clay r Problematic Soils 1
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric	bgroup): ption (Describe to Bottom Depth 1 16 Soil Field In	Nolin silt loam, 0 to 3 the depth needed to document the indice  Horizon  1 2	Color ( 10YR 10YR e if indicato S5 - Sandy I	opes, occ Matrix Moist) 2/2 4/1 rs are not Redox	% 100 100	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	J Sand Grains; Loca Type asses (LRR N, I	Location	Texture (e.g. clay, sand, loam) silty clay silty clay r Problematic Soils <sup>1</sup>
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip	e: bgroup): ption (Describe to Bottom Depth 1 16 Soil Field In	Nolin silt loam, 0 to 3 the depth needed to document the indice  Horizon  1 2	Color ( 10YR 10YR e if indicato S5 - Sandy I S6 - Stripper	opes, occ Matrix (Moist)  2/2  4/1    rs are not Redox d Matrix	% 100 100	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced Millor (Moist)	Mottles  Mottles  %	J Sand Grains; Loca Type	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi	e: bgroup): ption (Describe to Bottom Depth 1 16 Soil Field In	Nolin silt loam, 0 to 3 the depth needed to document the indice  Horizon  1 2	Color ( 10YR 10YR e if indicato \$5 - Sandy I \$6 - Strippe( \$7 - Dark St	opes, occ Matrix Moist)  2/2  4/1    rs are not Redox d Matrix d Matrix model of the control of the contr	% 100 100 present	Series (D)  Co	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	asses (LRR N, IR RA 122, 136) In Soils (MLRA)	Location Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen	begroup): potion (Describe to Depth  1 16 Soil Field In dedon co Sulfide	Nolin silt loam, 0 to 3 the depth needed to document the indice  Horizon  1 2	Color ( 10YR 10YR e if indicato S5 - Sandy I S6 - Strippe S7 - Dark St S8 - Polyvali	opes, occ Matrix Moist)  2/2  4/1     rs are not Redox d Matrix Redox d Matrix urface ue Below D	sasionally S  rs.) (Type: C=Cor  % 100 100 present	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	J Sand Grains; Loca  Type	Location	Texture  (e.g. clay, sand, loam)  silty clay  silty clay      Problematic Soils   t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L	bgroup): ption (Describe to Depth	Nolin silt loam, 0 to 3 the depth needed to document the indice  Horizon  1 2	Servival Survey Servival Survey Surve	opes, occ Matrix (Moist)  2/2  4/1     rs are not Redox d Matrix urface ue Below D ark Surface	sasionally \$  // Service Calcor  // Service Calcor	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	J Sand Grains; Loca  Type	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc	e: bogroup):  otion (Describe to Bottom Depth 1 16 Soil Field In edon c Sulfide ayers ck (LRR N)	Nolin silt loam, 0 to 3 the depth needed to document the indic  Horizon  1 2 dicators (check here	Color ( 10YR 10YR 10YR e if indicato S5 - Sandy I S6 - Strippe S7 - Dark Si S8 - Polyvali S9 - Thin Da F2 - Loamy	opes, occ  Matrix (Moist)  2/2  4/1    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat	sasionally \$  // Service Calcor  // Service Calcor	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	J Sand Grains; Loca  Type	Location	Texture  (e.g. clay, sand, loam)  silty clay  silty clay      Problematic Soils   t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1	e: bgroup): btion (Describe to Bottom Depth 1 16 Soil Field In edon C Sulfide ayers ck (LRR N) Below Dark Si	Nolin silt loam, 0 to 3 the depth needed to document the indic  Horizon  1 2 dicators (check here	approach since the second seco	opes, occ Matrix Moist) 2/2 4/1 rs are not Redox d Matrix d Matrix urface ue Below D ark Surface Gleyed Mat d Matirx	sasionally \$\frac{9}{4}\$  100  100    present  ark Surface (MLRA 147, 148)	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	J Sand Grains; Loca  Type	Location	Texture  (e.g. clay, sand, loam)  silty clay  silty clay      Problematic Soils   t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2- Histic Epip 3- Black Histi 4- Hydrogen 5- Stratified L 10- 2 cm Muc 11- Depleted 12- Thick Dai	e: bgroup): ption (Describe to Bottom Depth 1 16 Soil Field In edon c Sulfide ayers ck (LRR N) Below Dark Surk	Nolin silt loam, 0 to 3 the depth needed to document the indices the depth needed to document the indices the depth needed to document the indices the indices that it is not a second to be a second to	Color ( 10YR 10YR 10YR e if indicato S5 - Sandy I S6 - Stripper S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox I	opes, occ Matrix Moist)  2/2  4/1    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matirx Dark Surface Su	% 100 100 present	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	J Sand Grains; Loca  Type	Location	Texture  (e.g. clay, sand, loam)  silty clay  silty clay      Problematic Soils   t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth  0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dai 1 - Sandy Muc	bgroup): bgroup): bgroup): btion (Describe to Bottom Depth 1 16 Soil Field In edon c Sulfide ayers ck (LRR N) Below Dark Strk Surface ck Mineral (LRR	Nolin silt loam, 0 to 3 the depth needed to document the indices the depth needed to document the indices the depth needed to document the indices the indices that it is not a second to be a second to	Color ( 10YR 10YR 10YR e if indicato S5 - Sandy I S6 - Strippe S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox I F7 - Deplete	opes, occ Matrix Moist)  2/2  4/1      rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matrix Dark Surface d Dark Surface d Dark Surface	sasionally Sers.) (Type: C=Cor  % 100 100 present  Park Surface (MLRA 147, 148 trix  Ceface	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	Sand Grains; Local Type	Location  Indicators fo A10 - 2cm W A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay   Problematic Soils   It Cloudy loan  Texture  Prairie Redox (MLRA 147, 148)  It Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface  in in Remarks)
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth  0 1 NRCS Hydric 1- Histosol 2- Histic Epip 3- Black Histi 4- Hydrogen 5- Stratified L 10- 2 cm Muc 11- Depleted 11- Thick Dai 11- Sandy Muc 14- Sandy Gle	bgroup): bgroup): bgroup): btion (Describe to Bottom Depth 1 16 Soil Field In edon c Sulfide ayers ck (LRR N) Below Dark Strk Surface ck Mineral (LRR	Nolin silt loam, 0 to 3 the depth needed to document the indices the depth needed to document the indices the depth needed to document the indices the indices that it is not a second to be a second to	Color ( 10YR 10YR 10YR e if indicato S5 - Sandy I S6 - Stripper S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox I	opes, occ Matrix Moist)  2/2  4/1      rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matrix Dark Surface d Dark Surface d Dark Surface	sasionally Sers.) (Type: C=Cor  % 100 100 present  Park Surface (MLRA 147, 148 trix  Ceface	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	asses (LRR N, RA 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dat 11 - Sandy Muc 14 - Sandy Muc Restrictive Layer	bgroup): bgroup): bgroup): btion (Describe to Bottom Depth 1 16 Soil Field In edon c Sulfide ayers ck (LRR N) Below Dark Strk Surface ck Mineral (LRR	Nolin silt loam, 0 to 3 the depth needed to document the indices the depth needed to document the indices the depth needed to document the indices the indices that it is not a second to be a second to	Color ( 10YR 10YR 10YR e if indicato S5 - Sandy I S6 - Strippe S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox I F7 - Deplete	opes, occ Matrix Moist)  2/2  4/1      rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matrix Dark Surface d Dark Surface d Dark Surface	sasionally Sers.) (Type: C=Cor  % 100 100 present  Park Surface (MLRA 147, 148 trix  Ceface	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	asses (LRR N, IRR 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay   Problematic Soils   It Cloudy loan  Texture  Prairie Redox (MLRA 147, 148)  It Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface  in in Remarks)
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dan 11 - Sandy Muc 4 - Sandy Gle Restrictive Layer (If Observed)	e: bgroup): ption (Describe to Bottom Depth 1 16 Soil Field In edon c Sulfide ayers bk (LRR N) Below Dark St rk Surface ck Mineral (LRR yed Matrix	Nolin silt loam, 0 to 3 the depth needed to document the indices the depth needed to document the indices the depth needed to document the indices the indices that it is not a second to be a second to	Color ( 10YR 10YR 10YR e if indicato S5 - Sandy I S6 - Strippe S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox I F7 - Deplete	opes, occ Matrix Moist)  2/2  4/1    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	sasionally Sers.) (Type: C=Cor  % 100 100 present  Park Surface (MLRA 147, 148 trix  Ceface	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	asses (LRR N, IRR 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dat 11 - Sandy Muc 14 - Sandy Muc Restrictive Layer	e: bgroup): ption (Describe to Bottom Depth 1 16 Soil Field In edon c Sulfide ayers bk (LRR N) Below Dark St rk Surface ck Mineral (LRR yed Matrix	Nolin silt loam, 0 to 3 the depth needed to document the indices the depth needed to document the indices the depth needed to document the indices the indices that it is not a second to be a second to	Color ( 10YR 10YR 10YR e if indicato S5 - Sandy I S6 - Strippe S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox I F7 - Deplete	opes, occ Matrix Moist)  2/2  4/1    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	sasionally Sers.) (Type: C=Cor  % 100 100 present  Park Surface (MLRA 147, 148 trix  Ceface	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	asses (LRR N, IRR 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dan 11 - Sandy Muc 4 - Sandy Gle Restrictive Layer (If Observed)	e: bgroup): ption (Describe to Bottom Depth 1 16 Soil Field In edon c Sulfide ayers bk (LRR N) Below Dark St rk Surface ck Mineral (LRR yed Matrix	Nolin silt loam, 0 to 3 the depth needed to document the indices the depth needed to document the indices the depth needed to document the indices the indices that it is not a second to be a second to	Color ( 10YR 10YR 10YR e if indicato S5 - Sandy I S6 - Strippe S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox I F7 - Deplete	opes, occ Matrix Moist)  2/2  4/1    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	sasionally Sers.) (Type: C=Cor  % 100 100 present  Park Surface (MLRA 147, 148 trix  Ceface	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	asses (LRR N, IRR 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth 0 1 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dan 11 - Sandy Muc 4 - Sandy Gle Restrictive Layer (If Observed)	e: bgroup): ption (Describe to Bottom Depth 1 16 Soil Field In edon c Sulfide ayers bk (LRR N) Below Dark St rk Surface ck Mineral (LRR yed Matrix	Nolin silt loam, 0 to 3 the depth needed to document the indices the depth needed to document the indices the depth needed to document the indices the indices that it is not a second to be a second to	Color ( 10YR 10YR 10YR e if indicato S5 - Sandy I S6 - Strippe S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox I F7 - Deplete	opes, occ Matrix Moist)  2/2  4/1    rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	sasionally Sers.) (Type: C=Cor  % 100 100 present  Park Surface (MLRA 147, 148 trix  Ceface	Series Discontration, D=E	rainage Class:  Depletion, RM=Reduced M.  Ior (Moist)	Mottles  Mottles  %	asses (LRR N, IRR 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay



Project/Site:	Bellefonte Extension 138 k\	/ Line Rebuild Pro	oject			Wetland ID: Wetland 3 Sample Point SP07
\/						
VEGETATION	(Species identified in all upperca ot size: 30 ft radius)	se are non-native sp	ecies.)			
Tree Stratum (Fig	Species Name		% Cover	Dominant	Ind.Status	Dominance Test Worksheet
1.	Juglans nigra		5	Υ	FACU	
2.	Prunus serotina		5	Υ	FACU	Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)
3.	Gleditsia triacanthos		5	Υ	FAC	
4.						Total Number of Dominant Species Across All Strata: (B)
5.						Percent of Dominant Species That Are OBL, FACW, or
6.						FAC: <u>20.0%</u> (A/B)
7.						Decorder of Index Wester 6
8. 9.						Prevalence Index Worksheet
9. 10.	<del></del>					<u>Total % Cover of:</u> <u>Multiply by:</u> OBL spp. 0 x 1 = 0
10.		Total Cover =	15			OBL spp. 0
		Total Gover =	13			FAC spp. $8 \times 3 = 24$
Sapling/Shrub Str	atum (Plot size: 15 ft radius)					FACU spp. 22
1.	Rosa multiflora		5	Υ	FACU	UPL spp. 90 X 5 = 450
2.						··· <u></u>
3.						Total 120 (A) 562 (B)
4.						
5.						Prevalence Index = B/A = 4.683
6.	<del></del>					
7.	-					H. Level, C. West of Co. L. Protess
8.						Hydrophytic Vegetation Indicators:
9. 10.	<del></del>					Yes ☐ ☑ No Rapid Test for Hydrophytic Vegetation Yes ☐ ☑ No Dominance Test is > 50%
10.		Total Cover =	5			Yes □ ✓ No Dominance Test is > 50%  Yes □ ✓ No Prevalence Index is ≤ 3.0 *
		Total Cover =	3			Yes Vo Morphological Adaptations (Explain) *
Herb Stratum (Plo	t size: 5 ft radius)					Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Euonymus fortunei		90	Υ	UPL	
2.	Amphicarpaea bracteata		3	N	FAC	* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3.	Elymus canadensis		5	N	FACU	procest, amose distarbed of problematic.
4.	Alliaria petiolata		2	N	FACU	Definitions of Vegetation Strata:
5.	-					_
6						Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
7.	-					neight (חסט), regardless of neight.
8. 9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
10.						ft. tall.
11.						
12.						Herb - All herbaceous (non-woody) plants, regardless of size,
13.						and woody plants less than 3.28 ft. tall.
14.						
15.						Woody Vines - All woody vines greater than 3.28 ft. in height.
		Total Cover =	100	· · · · · · · · · · · · · · · · · · ·		
	um (Plot size: 30 ft radius)					
1.	-					
2.						Undership Variation Brown CV CV
3.						Hydrophytic Vegetation Present ☐ Yes ☑ No
4. 5.						
Ű.		Total Cover =	0	<del></del>		
Remarks:		10tal 00761 =	U			
Additional Rei	marks:					



Soil Unit: Landform:	Floodplain	-Shelocta association	n, very stee		וא :cal Relief		Classification: e	N/A		Wetland ID: Sample Point:	Wetland 4 SP08
Slope (%):	3%	Latitude:	38.49093	L	ongitude:	-82.623	664	Datum:	NAD83	Community ID:	PEM
		ditions on the site typ			ar? (If no, e			✓ Yes □	No	Section:	S 1
		or Hydrology □ sign				Ar	e normal circui	mstances pre	sent?	Township:	T1N
		or Hydrology □ natu	ırally proble	matic?			✓ Yes	□ No		Range:	R18W Dir:
SUMMARY OF											
Hydrophytic Ve					₃ □ No			Hydric Soils		A/::1 : A \A/ :1	✓ Yes □ No
Wetland Hydro	logy Present	?		☑ Yes	s 🗆 No			Is This Samp	oling Point \	Within A Wetla	and? <b>□ Yes ■ No</b>
Remarks:											
HYDROLOGY											
						_					
1		ators (Check here if i	indicators a	re not pre	sent ):				Secondary:	DO 0 ( 0 -	"I Ol
Primary	<u>:</u> A1 - Surface	Water			R9 - Wate	er-Stained	Leaves			B6 - Surface Sc B8 - Sparsely Ve	egetated Concave Surface
✓	A2 - High Wa				B13 - Aqu					B10 - Drainage	
<b></b> ✓	A3 - Saturation				B14 - Tru					B16 - Moss Trin	
	B1 - Water M				C1 - Hydr					C2 - Dry Seaso	
	B2 - Sedimer B3 - Drift Der						spheres on Livin educed Iron	ng Roots		C8 - Crayfish B	urrows Visible on Aerial Imagery
	B4 - Algal Ma						eduction in Tilled	Soils			Stressed Plants
	B5 - Iron Dep					Muck Sur				D2 - Geomorph	
	B7 - Inundati	on Visible on Aerial Imag	gery		Other (Ex	plain in Re	emarks)			D3 - Shallow Ad	
										D4 - Microtopog D5 - FAC-Neutr	
Field Observed										D3 - 1 AC-Neuti	ai rest
Field Observat		- v - N	5 4	4	(! \						
Surface Water		☑ Yes □ No	Depth:		(in.)			Wetland Hy	drology Pro	esent?	Yes □ No
Water Table Pr		<ul><li>✓ Yes □ No</li><li>✓ Yes □ No</li></ul>	Depth:		(in.)						
Saturation Pres			Depth:		(in.)						
Describe Record	led Data (stre	eam gauge, monitoring	y well, aerial	photos, pr	evious insp	pections),	, if available:		N/A		
Remarks:											
SOILS											
SOILS Map Unit Name		Steinsburg-Shelocta	ı association	n, very ste	eep S	Series Dr	rainage Class:				
SOILS Map Unit Name Taxonomy (Sub	ogroup):										
SOILS Map Unit Name Taxonomy (Sul Profile Descrip	ogroup): otion (Describe to	Steinsburg-Shelocta		bsence of indicato				atrix, CS=Covered/Coated	d Sand Grains; Locat	ion: PL=Pore Lining, M=M	
SOILS Map Unit Name Taxonomy (Sul Profile Descrip Top	ogroup): otion (Describe to Bottom	the depth needed to document the indic	cator or confirm the al	bsence of indicato	rs.) (Type: C=Cor	ncentration, D=D	Depletion, RM=Reduced Ma	atrix, CS=Covered/Coated		Ī	Texture
SOILS  Map Unit Name Taxonomy (Sul Profile Descrip Top Depth	ogroup): otion (Describe to Bottom Depth	the depth needed to document the indic	cator or confirm the al	bsence of indicato Matrix Moist)	rs.) (Type: C=Cor	ncentration, D=E	Depletion, RM=Reduced Ma	atrix, CS=Covered/Coated  Mottles  %	Туре	Location	Texture (e.g. clay, sand, loam)
SOILS Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0	Degroup): Describe to Depth  1	the depth needed to document the indic  Horizon	cator or confirm the all	bsence of indicato Matrix Moist) 2/1	rs.) (Type: C=Cor	CO	Depletion, RM=Reduced Ma	atrix, CS=Covered/Coated  Mottles  %	Type 	Location 	Texture (e.g. clay, sand, loam) muck
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	Degroup): Describe to Bottom Depth 1 16	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist) 2/1 3/1	% 100 92	Col	Depletion, RM=Reduced Ma	Mottles  Mottles  8	Type  C	Location  PL	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to Bottom Depth 1 16	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  2/1  3/1	% 100 92	Col	Or (Moist) 5/8	Mottles % 8	Type  C	Location  PL 	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	Degroup): Describe to Bottom Depth 1 16	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  2/1  3/1	% 100 92	Col	or (Moist) 5/8	Mottles % 8	Type C	Location  PL	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	ogroup): otion (Describe to Bottom Depth 1 16	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  2/1  3/1	% 100 92	Col	or (Moist) 5/8	Mottles  Mottles  8	Type C	Location PL	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	ogroup):  otion (Describe to Bottom Depth 1 16	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  2/1  3/1	/ss.) (Type: C=Cor	Col	or (Moist) 5/8	Mottles % 8	Type C	Location PL	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	ogroup): otion (Describe to Bottom Depth 1 16	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  2/1  3/1	% 100 92	Col	or (Moist) 5/8	Mottles  Mottles  8	Type C	Location PL	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1	pogroup):  ption (Describe to Depth	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  2/1  3/1	% 100 92	Col 5YR	September   Sept	Mottles  Mottles  8	Type C	Location PL	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric	pogroup):  ption (Describe to Depth	the depth needed to document the indic	Color ( 10YR 10YR e if indicato	Matrix Moist) 2/1 3/1 rs are not	% 100 92	Col 5YR	lor (Moist) 5/8	Mottles  Mottles  8	Type C	Location PL Indicators fo	Texture (e.g. clay, sand, loam) muck silty clay r Problematic Soils 1
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric  A1- Histosol	ogroup):  otion (Describe to Depth 1 16 Soil Field In	the depth needed to document the indic	Color ( 10YR 10YR e if indicato S5 - Sandy	Matrix Moist)  2/1  3/1     rs are not Redox	% 100 92	COI	or (Moist)  5/8	Mottles  Mottles  8	Type C asses (LRR N.	Location PL Indicators fo A10 - 2cm M	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sult Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip	pogroup):  ption (Describe to Depth	the depth needed to document the indic	Color ( 10YR 10YR e if indicato \$5 - Sandy   \$6 - Stripper	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix	% 100 92	COI	Sepletion, RM=Reduced Me	Mottles  Mottles  % 8	Type C	Location  PL Indicators fo A10 - 2cm M A16 - Coast P	Texture  (e.g. clay, sand, loam)  muck  silty clay      r Problematic Soils <sup>1</sup> Prairie Redox (MLRA 147), 148)
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi	pogroup):  ption (Describe to Depth	the depth needed to document the indic	cator or confirm the all	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix	% 100 92 present	SYR	Sylvan	Mottles  Mottles  8	Type C	Location  PL Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon	Texture (e.g. clay, sand, loam) muck silty clay r Problematic Soils 1 Nuck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147)
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen	pgroup):  ption (Describe to Depth	the depth needed to document the indic	Color ( 10YR 10YR 10YR e if indicato \$5 - \$andy   \$6 - \$trippe \$7 - Dark \$\$6 - \$Polyval	Matrix Moist) 2/1 3/1	% 100 92 present	Col ):   (MLRA 147,	State	Mottles  Mottles  %  8 8	Type C C asses (LRR N,	Location  PL    Indicators fo  A10 - 2cm M  A16 - Coast P  F19 - Piedmon  TF12 - Very	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi	pgroup):  ption (Describe to Depth	the depth needed to document the indic	cator or confirm the at Color ( 10YR 10YR 10YR e if indicato \$5 - Sandy   \$6 - Stripper \$7 - Dark St \$8 - Polyvali \$9 - Thin Da	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix urface ue Below D ark Surface	% 100 92 present	Col ):   (MLRA 147,	State	Mottles  Mottles  % 8	Type C C asses (LRR N,	Location  PL    Indicators fo  A10 - 2cm M  A16 - Coast P  F19 - Piedmon  TF12 - Very	Texture (e.g. clay, sand, loam) muck silty clay r Problematic Soils 1 Nuck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147)
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L	pgroup):  ption (Describe to Depth 1 16 Soil Field Indeedon C Sulfide ayers ck (LRR N)	Horizon	Color ( 10YR 10YR 10YR e if indicato \$5 - \$andy   \$6 - \$trippe \$7 - Dark \$\$6 - \$Polyval	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix Matrix  Moist)  2/1  3/1    gray  rs are not Redox d Matrix urface ue Below D urk Surface Gleyed Mat	% 100 92 present	Col ):   (MLRA 147,	State	Mottles  Mottles  %  8 8	Type C C asses (LRR N,	Location  PL    Indicators fo  A10 - 2cm M  A16 - Coast P  F19 - Piedmon  TF12 - Very	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar	pgroup):  ption (Describe to Depth 1 16	Horizon	cator or confirm the all	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix Inface ue Below Durk Surface Gleyed Matrix Dark Surface Dark Surface Dark Surface	% 100 92 present	Col ):   (MLRA 147,	State	Mottles  Mottles  %  8 8	Type C C asses (LRR N,	Location  PL    Indicators fo  A10 - 2cm M  A16 - Coast P  F19 - Piedmon  TF12 - Very	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dai S1 - Sandy Muc	pgroup):  ption (Describe to Depth 1 16	the depth needed to document the indice Horizon	cator or confirm the all	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix d Matrix uran Below D ark Surface Gleyed Mat d Matirx Dark Surface d Dark Surface	ss.) (Type: C=Cor	Col ):   (MLRA 147,	State	Mottles  Mottles  %   8	Type C asses (LRR N., 74, 122, 136) in Soils (MLRA 127, 144, 144, 144, 144, 144, 144, 144, 14	Location  PL Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture (e.g. clay, sand, loam)  muck silty clay r Problematic Soils   t Floodplain Soils (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface in in Remarks)
SOILS  Map Unit Name Taxonomy (Sult Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gle	pgroup):  ption (Describe to Depth 1 16	Horizon	cator or confirm the all	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix d Matrix uran Below D ark Surface Gleyed Mat d Matirx Dark Surface d Dark Surface	ss.) (Type: C=Cor	Col ):   (MLRA 147,	State	Mottles  Mottles  %   8	Type C asses (LRR N., 74, 122, 136) in Soils (MLRA 127, 144, 144, 144, 144, 144, 144, 144, 14	Location  PL Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture (e.g. clay, sand, loam) muck silty clay
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth  1 NRCS Hydric  A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Muc S4 - Sandy Gie Restrictive Layer	pgroup):  ption (Describe to Depth 1 16	the depth needed to document the indice Horizon	cator or confirm the all	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix d Matrix uran Below D ark Surface Gleyed Mat d Matirx Dark Surface d Dark Surface	ss.) (Type: C=Cor	Col ):   (MLRA 147,	State	Mottles  Mottles  %   8	Type  C  asses (LRR N, A 122, 136)	Location  PL Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture (e.g. clay, sand, loam)  muck silty clay r Problematic Soils   t Floodplain Soils (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface in in Remarks)
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gle Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth 1 16	the depth needed to document the indice Horizon	cator or confirm the all	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix urface ue Below Durk Surface Gleyed Matrix Of Matrix Dark Surface d Dark Surface Depression	ss.) (Type: C=Cor	Col ):   (MLRA 147,	State	Mottles  Mottles  %  8 8	Type  C  asses (LRR N, A 122, 136)	Location  PL Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  muck  silty clay      r Problematic Soils   fuck (MLRA 147)  rairie Redox (MLRA 147, 148)  t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface  in in Remarks)
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth  1 NRCS Hydric  A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Muc S4 - Sandy Gie Restrictive Layer	pgroup):  ption (Describe to Depth 1 16	the depth needed to document the indice Horizon	cator or confirm the all	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix urface ue Below Durk Surface Gleyed Matrix Of Matrix Dark Surface d Dark Surface Depression	ss.) (Type: C=Cor	Col ):   (MLRA 147,	State	Mottles  Mottles  %  8 8	Type  C  asses (LRR N, A 122, 136)	Location  PL Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  muck  silty clay      r Problematic Soils   fuck (MLRA 147)  rairie Redox (MLRA 147, 148)  t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface  in in Remarks)
SOILS  Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 1 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gle Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth 1 16	the depth needed to document the indice Horizon	cator or confirm the all	Matrix Moist)  2/1  3/1    rs are not Redox d Matrix urface ue Below Durk Surface Gleyed Matrix Of Matrix Dark Surface d Dark Surface Depression	ss.) (Type: C=Cor	Col ):   (MLRA 147,	State	Mottles  Mottles  %  8 8	Type  C  asses (LRR N, A 122, 136)	Location  PL Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture (e.g. clay, sand, loam)  muck silty clay

Wetland ID: Wetland 4 Sample Point SP08



Bellefonte Extension 138 kV Line Rebuild Project

Project/Site:

#### WETLAND DETERMINATION DATA FORM

	Species Name	_	% Cover	Dominant	Ind.Status	Dominance Test Worksheet
1.	Salix interior		10	Υ	FACW	
2.						Number of Dominant Species that are OBL, FACW, or FAC:(A)
3.						
4.						Total Number of Dominant Species Across All Strata:(B)
5.						Percent of Dominant Species That Are OBL, FACW, or
6.	<del></del>					FAC: <u>100.0%</u> (A/B)
7.	<del></del>					
8.	<del></del>					Prevalence Index Worksheet
9.						Total % Cover of: Multiply by:
10.	<del></del>					OBL spp. 5 x 1 = 5
		Total Cover =	10			FACW spp. 105 X 2 = 210
						FAC spp. $0   x 3 = 0$
pling/Shrub S	Stratum (Plot size: 15 ft radius)					FACU spp. 0 x 4 = 0
1.						UPL spp 0
2.						
3.						Total 110 (A) 215 (B)
4.	<del></del>					
5.						Prevalence Index = B/A = 1.955
6.	<del></del>					
7.						
8.						Hydrophytic Vegetation Indicators:
9.						Yes ☑ □ No Rapid Test for Hydrophytic Vegetation
10.						Yes ☑ □ No Dominance Test is > 50%
		Total Cover =	0			Yes ☑ □ No Prevalence Index is ≤ 3.0 *
						Yes □ ☑ No Morphological Adaptations (Explain) *
erb Stratum (P	Plot size: 5 ft radius)					Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Juncus effusus		80	Υ	FACW	
2.	Scirpus atrovirens		5	N	OBL	* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
3.	Epilobium coloratum		10	N	FACW	present, unless disturbed of problematic.
4.	Eutrochium maculatum		5	N	FACW	Definitions of Vegetation Strata:
5.						
6						Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.						height (DBH), regardless of height.
8.						
9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
10.						ft. tall.
11.						
12.						Herb - All herbaceous (non-woody) plants, regardless of size,
13.						and woody plants less than 3.28 ft. tall.
14.						
15.						Woody Vines - All woody vines greater than 3.28 ft. in height.
-		Total Cover =	100			, in the second
oody Vine Str	atum (Plot size: 30 ft radius)					
1.						
2.						
3.						Hydrophytic Vegetation Present ☑ Yes ☐ No
4.						, 1.00 = 1.00
5.						
		Total Cover =	0			
emarks:						
emarks.						
dditional Re						



#### WETLAND DETERMINATION DATA FORM Eastern Mountains and Piedmont Region

Project/Site:	Bellefonte	Extension 138 kV Lin	e Rebuild F	Project		Stant	tec Project #:	193707276		Date:	10/21/20
Applicant:	AEP									County:	Lawrence
Investigator #1	: Aaron Kwo	lek		Invest	igator #2:	Matt De	enzler			State:	Ohio
Soil Unit:	Steinsburg	-Shelocta association	. verv stee				Classification:	N/A		Wetland ID:	Wetland 4
Landform:	Rise		., ,		cal Relief:					Sample Point:	
Slope (%):	3%	Latitudo	38.46096		ongitude:			Datum:	NAD83	Community ID:	
		ditions on the site typi							No	Section:	S 1
Are Chimatic/Hy			er the the	tillie of ye	ar (ir no, e						
		or Hydrology ☐ sign				Ar	e normal circu		esent?	Township:	T1N
		or Hydrology   natu	rally proble	matic?			Yes	s □ No		Range:	R18W Dir:
SUMMARY OF											
Hydrophytic Ve	getation Pre	sent?		□ Yes				Hydric Soils	Present?		☐ Yes ☑ No
Wetland Hydro	logy Present	?		□ Yes	s ☑ No			Is This Sam	pling Point	Within A Wetla	and? - Yes - No
Remarks:	.,,										
HYDROLOGY											
Wetland Hydr	ology Indica	ators (Check here if i	ndicators a	re not pre	sent ):				Secondary:		
<u>Primary</u>										B6 - Surface So	
	A1 - Surface				B9 - Wate						egetated Concave Surface
	A2 - High Wa				B13 - Aqu				닏	B10 - Drainage	
					B14 - Tru				님	B16 - Moss Trin	
	B1 - Water M B2 - Sedime				C1 - Hydr			a a Danta		,	
							ospheres on Livir educed Iron	ng Roots	H		Visible on Aerial Imagery
							eduction in Tilled	Soile	H	D1 - Stunted or	
					C7 - Thin			30113		D2 - Geomorph	
		ion Visible on Aerial Imag	ierv		Other (Ex					D3 - Shallow Ac	
			,,				,			D4 - Microtopog	
										D5 - FAC-Neutr	al Test
Field Observa	tions:										
		□ V □ N-	D 11-		(in )						
Surface Water		☐ Yes ☑ No	Depth		(in.)			Wetland Hy	drology Pr	esent?	Yes ☑ No
Water Table P		☐ Yes ☑ No	Depth		(in.)						
Saturation Pres	sent?	☐ Yes ☑ No	Depth	:	(in.)						
December December	Lad Data Zata										
Describe Record	ded Data (str	eam gauge, monitoring	well, aerial	photos, pr	evious ins	pections)	, if available:		N/A		
	ded Data (str	eam gauge, monitoring	well, aerial	photos, pr	evious insp	pections)	, if available:		N/A		
Remarks:	ded Data (Str	eam gauge, monitoring	well, aerial	photos, pr	evious insp	pections)	, if available:		N/A		
Remarks:	ded Data (Str	eam gauge, monitoring	well, aerial	photos, pr	evious ins	pections)	, if available:		N/A		
Remarks: SOILS									N/A		
Remarks:  SOILS  Map Unit Name	ə:	eam gauge, monitoring Steinsburg-Shelocta					, if available: rainage Class:		N/A		
Remarks:  SOILS  Map Unit Name Taxonomy (Suited)	e: bgroup):	Steinsburg-Shelocta	association	n, very ste	eep S	Series Di	rainage Class:				
Remarks:  SOILS  Map Unit Name Taxonomy (Suited)	e: bgroup):		association	n, very ste	eep S	Series Di	rainage Class:			tion: PL=Pore Lining, M=M	atrix)
Remarks:  SOILS  Map Unit Name Taxonomy (Suited)	e: bgroup):	Steinsburg-Shelocta	association	n, very ste	eep S	Series Di	rainage Class:			tion: PL=Pore Lining, M=M	atrix) Texture
Remarks:  SOILS  Map Unit Name Taxonomy (Su  Profile Descri	e: bgroup): ption (Describe to	Steinsburg-Shelocta	association	n, very ste	eep S	Series Di	rainage Class:	latrix, CS=Covered/Coate		tion: PL=Pore Lining, M=M  Location	Texture
Remarks:  SOILS  Map Unit Name Taxonomy (Su  Profile Descri  Top Depth	e: bgroup): <b>ption</b> (Describe to Bottom Depth	Steinsburg-Shelocta the depth needed to document the indice Horizon	association association or confirm the a	n, very ste bsence of indicator Matrix (Moist)	rs.) (Type: C=Cor	Series Di	rainage Class: Depletion, RM=Reduced M	Mottles	d Sand Grains; Loca	Location	Texture (e.g. clay, sand, loam)
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0	e: bgroup): ption (Describe to Bottom Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon	association ator or confirm the a  Color ( 10YR	n, very ste	rs.) (Type: C=Cod	Series Di	rainage Class: Depletion, RM=Reduced M  lor (Moist)	latrix, CS=Covered/Coates  Mottles  %	d Sand Grains; Loca	Location 	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0	e: bgroup): ption (Describe to Bottom Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon	association stor or confirm the a  Color (  10YR	n, very ste  bsence of indicator  Matrix (Moist)  4/4	eep S	Series Di	rainage Class: Depletion, RM=Reduced M  Ior (Moist)	latrix, CS=Covered/Coater  Mottles  %	d Sand Grains; Loca Type 	Location 	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0	e: bgroup): ption (Describe to Bottom Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon	association cator or confirm the a  Color ( 10YR	bsence of indicator Matrix (Moist) 4/4	rs.) (Type: C=Cor	Series Di	rainage Class: Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca Type  	Location  	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0	e: bgroup): ption (Describe to Bottom Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon	association stor or confirm the a  Color (  10YR	n, very ste  bsence of indicator  Matrix (Moist)  4/4	eep S	Series Di	rainage Class: Depletion, RM=Reduced M  Ior (Moist)	latrix, CS=Covered/Coate  Mottles  %	d Sand Grains; Loca Type 	Location 	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0	e: bgroup): ption (Describe to Bottom Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon	association cator or confirm the a  Color ( 10YR	bsence of indicator Matrix (Moist) 4/4	rs.) (Type: C=Cor	Series Di	rainage Class: Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca Type  	Location  	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0	bgroup): ption (Describe to Bottom Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon	association cator or confirm the a  Color ( 10YR	bsence of indicator Matrix (Moist) 4/4	% 100	Series Di	rainage Class: Depletion, RM=Reduced M  Ior (Moist)	latrix, CS=Covered/Coate  Mottles  %	d Sand Grains; Loca	Location   	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0	bgroup): ption (Describe to Bottom Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon	association cator or confirm the a  Color ( 10YR	bsence of indicator Matrix (Moist) 4/4	% 100	Series Di	rainage Class: Depletion, RM=Reduced M  Ior (Moist)	latrix, CS=Covered/Coate  Mottles  %	d Sand Grains; Loca	Location   	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0	bgroup): ption (Describe to Bottom Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon	association  cator or confirm the a  Color ( 10YR	bsence of indicator Matrix (Moist) 4/4	% 100	Series Di	rainage Class: Depletion, RM=Reduced M  Ior (Moist)	latrix, CS=Covered/Coate  Mottles  %	d Sand Grains; Loca	Location	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0	bgroup): ption (Describe to  Bottom Depth  16	Steinsburg-Shelocta the depth needed to document the indices  Horizon	association  cator or confirm the a  Color (  10YR	bsence of indicator Matrix (Moist)  4/4	% 100	Series Di	rainage Class: Depletion, RM=Reduced M  Ior (Moist)	latrix, CS=Covered/Coate  Mottles  %	d Sand Grains; Loca	Location	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0 NRCS Hydric	bgroup): ption (Describe to  Bottom Depth  16	Steinsburg-Shelocta the depth needed to document the indic Horizon	association  Color ( 10YR      e if indicato	beence of indicator Matrix (Moist)  4/4      rs are not	% 100	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	latrix, CS=Covered/Coate  Mottles  %	d Sand Grains; Loca	Location Indicators for	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0 NRCS Hydric	bgroup): ption (bescribe to Bottom Depth 16 Soil Field In	Steinsburg-Shelocta the depth needed to document the indices  Horizon	association  cator or confirm the a  Color ( 10YR	bsence of indicator Matrix (Moist)  4/4     rs are not Redox	% 100	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	latrix, CS=Covered/Coate  Mottles  %	d Sand Grains; Loca Type	Location	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0 NRCS Hydric 1- Histosol 2 - Histic Epip	e: bgroup): ption (Describe to Bottom Depth 16 Soil Field In	Steinsburg-Shelocta the depth needed to document the indices  Horizon	association  Color ( 10YR	n, very stee  besence of indicator  Matrix (Moist)  4/4     rs are not  Redox  d Matrix	% 100	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca Type	Location	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histi	bgroup): ption (Describe to Depth 16 Soil Field In	Steinsburg-Shelocta the depth needed to document the indices  Horizon	association  Color ( 10YR      a if indicato S5 - Sardy   S6 - Strippe S7 - Dark S6	m, very stee  Matrix (Moist)  4/4     rs are not Redox d Matrix urface	% 100 present	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	latrix, CS=Covered/Coate  Mottles  %	d Sand Grains; Loca Type	Location Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth  O NRCS Hydric  1- Histos Epip -3 - Black Histi -4 - Hydrogen	bgroup): ption (Describe to Bottom Depth 16 Soil Field Indeedon C Sulfide	Steinsburg-Shelocta the depth needed to document the indices  Horizon	association  Color ( 10YR     if indicato S5 - Sandy S6 - Strippe S7 - Dark St S8 - Polyval	m, very stee  Matrix (Moist)  4/4      rs are not Redox d Matrix urface ue Below D	seep \$\frac{9}{6}\$  \[ \frac{100}{	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type         Rasses (LRR N, I	Location	Texture  (e.g. clay, sand, loam)  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth 0 NRCS Hydric 1- Histosol 2 - Histosol 3 - Black Histi 4 - Hydrogen 5 - Stratified L	bgroup): ption (Describe to Depth 16	Steinsburg-Shelocta the depth needed to document the indices  Horizon	association  Color ( 10YR      a if indicato S5 - Sardy   S6 - Strippe S7 - Dark S6	beence of indicator Matrix (Moist)  4/4      rs are not Redox d Matrix urface ue Below D ark Surface	% 100 present	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type         Rasses (LRR N, I	Location	Texture (e.g. clay, sand, loam) silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri  Top Depth 0 NRCS Hydric1- Histosol2 - Histic Epip3 - Black Histi4 - Hydrogen5 - Stratified L10 - 2 cm Muc	e: bgroup): ption (Describe to Bottom Depth 16 Soil Field Independent of the control	Steinsburg-Shelocta the depth needed to document the indic Horizon	association  Color ( 10YR      if indicato \$5 - Sandy \$6 - Strippe \$7 - Dark \$0 \$8 - Polyval \$9 - Thin Da	m, very stee  besence of indicator  Matrix (Moist)  4/4     rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat	% 100 present	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type         Rasses (LRR N, I	Location	Texture  (e.g. clay, sand, loam)  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri  Top Depth 0 NRCS Hydric1- Histosol2 - Histic Epip3 - Black Histi4 - Hydrogen5 - Stratified L10 - 2 cm Muc	e: bgroup): ption (Describe to Bottom Depth 16 Soil Field In edon C Sulfide ayers ck (LRR N) Below Dark Si	Steinsburg-Shelocta the depth needed to document the indic Horizon	association  Color ( 10YR	m, very stee  Matrix (Moist)  4/4     rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat d Matirx	rs.) (Type: C=Cor	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type         Rasses (LRR N, I	Location	Texture  (e.g. clay, sand, loam)  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri  Top Depth  0 NRCS Hydric  1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Mu 11 - Depleted 12 - Thick Da	e: bgroup): ption (Describe to Bottom Depth 16 Soil Field In edon C Sulfide ayers ck (LRR N) Below Dark Si	Steinsburg-Shelocta the depth needed to document the indic Horizon ndicators (check here	association  Color ( 10YR  e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark Si \$8 - Polyval \$9 - Thin Da \$9 - Thin Da \$1 - Color ( \$1 - Color ( \$1 - Color ( \$2 - Color ( \$3 - Color ( \$3 - Color ( \$4 - Color ( \$5 - Co	Matrix (Moist)  4/4     rs are not Redox d Matrix urface ue Below D ark Surface Gleyed Mat dd Matirx Dark Surface Surface Surface	% 100 present ark Surface (MLRA 147, 148	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type         Rasses (LRR N, I	Location	Texture  (e.g. clay, sand, loam)  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri  Top Depth  0 NRCS Hydric  1- Histosol 2 - Histic Epip 3 - Black Histi 4 - Hydrogen 5 - Stratified L 10 - 2 cm Mu 11 - Depleted 12 - Thick Da	bgroup): ption (Describe to Bottom Depth 16 Soil Field In bedon c Sulfide ayers ck (LRR N) Below Dark Sork Surface ck Mineral (LRR	Steinsburg-Shelocta the depth needed to document the indic Horizon ndicators (check here	association  Color ( 10YR	m, very stee  Matrix (Moist)  4/4          -	% 100 present  ark Surface (MLRA 147, 148 trix)	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type	Location Indicators for A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri  Top Depth 0	bgroup): ption (Describe to Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon ndicators (check here	association  Color ( 10YR     if indicato S5 - Sandy S6 - Strippe S7 - Dark St S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	m, very stee  Matrix (Moist)  4/4     rs are not Redox d Matrix urface ue Below D ark Surface dd Matrix Dark Surface dd Dark Surface dd Dark Surface	% 100 present  ark Surface (MLRA 147, 148 trix)	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type	Location Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri Top Depth  O NRCS Hydric  1- Histosol -2 - Histic Epip -3 - Black Histi -4 - Hydrogen -5 - Stratified L -10 - 2 cm Mu -11 - Depleted -12 - Thick Da -11 - Sandy Mu -14 - Sandy Gle	bgroup): ption (Describe to Bottom Depth 16 Soil Field In bedon c Sulfide ayers ck (LRR N) Below Dark Sork Surface ck Mineral (LRR	Steinsburg-Shelocta the depth needed to document the indic Horizon ndicators (check here	association  Color ( 10YR     if indicato S5 - Sandy S6 - Strippe S7 - Dark St S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	m, very stee  Matrix (Moist)  4/4          -	% 100 present  ark Surface (MLRA 147, 148 trix)	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type	Location Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri  Top Depth 0	bgroup): ption (Describe to Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon ndicators (check here	association  Color ( 10YR     if indicato S5 - Sandy S6 - Strippe S7 - Dark St S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	m, very stee  Matrix (Moist)  4/4     rs are not Redox d Matrix urface ue Below D ark Surface dd Matrix Dark Surface dd Dark Surface dd Dark Surface	% 100 present  ark Surface (MLRA 147, 148 trix)	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type	Location Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri  Top Depth  0	bgroup): ption (Describe to Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon ndicators (check here	association  Color ( 10YR     if indicato S5 - Sandy S6 - Strippe S7 - Dark St S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	m, very stee  Matrix (Moist)  4/4     rs are not Redox d Matrix urface ue Below D ark Surface dd Matrix Dark Surface dd Dark Surface dd Dark Surface	% 100 present  ark Surface (MLRA 147, 148 trix)	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type	Location Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay
Remarks:  SOILS  Map Unit Name Taxonomy (Su Profile Descri  Top Depth  0	bgroup): ption (Describe to Depth 16	Steinsburg-Shelocta the depth needed to document the indic Horizon ndicators (check here	association  Color ( 10YR     if indicato S5 - Sandy S6 - Strippe S7 - Dark St S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox F7 - Deplete	m, very stee  Matrix (Moist)  4/4     rs are not Redox d Matrix urface ue Below D ark Surface dd Matrix Dark Surface dd Dark Surface dd Dark Surface	% 100 present  ark Surface (MLRA 147, 148 trix)	Series Di	rainage Class:  Depletion, RM=Reduced M  Ior (Moist)	Mottles  Mottles  %	d Sand Grains; Loca  Type	Location Indicators fo A10 - 2cm M A16 - Coast P F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay



Project/Site:	Bellefonte Extension 138 kV Line Rebuild Pr	oject			Wetland ID: Wetland 4 Sample Point SP09
V=0==1=10V					
VEGETATION		pecies.)			
ree Stratum (Pl	lot size: 30 ft radius)	0/ 0	D	I- 4 C: :	Dominance Test Worksheet
1	Species Name		Dominant	Ind.Status	Dominance Test Worksheet
1.					Number of Descional Operator that are ODL FACING as FACI
2.					Number of Dominant Species that are OBL, FACW, or FAC:1 (A)
3.					
4.					Total Number of Dominant Species Across All Strata:(B)
5.					Percent of Dominant Species That Are OBL, FACW, or
6.					FAC: <u>50.0%</u> (A/B)
7.					
8.					Prevalence Index Worksheet
9.					Total % Cover of: Multiply by:
10.	<del></del>				OBL spp. 0 x 1 = 0
	Total Cover =	0			FACW spp. 0 x 2 = 0
					FAC spp. 95
Sapling/Shrub St	ratum (Plot size: 15 ft radius)				FACU spp. 85
1.	Rubus allegheniensis	80	Υ	FACU	UPL spp. $0   x   5 = 0$
2.					
3.					Total 180 (A) <u>625</u> (B)
4.					· · · · · · · · · · · · · · · · · · ·
5.					Prevalence Index = B/A = 3.472
6.					
7.					
8.					Hydrophytic Vegetation Indicators:
9.					Yes □ ☑ No Rapid Test for Hydrophytic Vegetation
10.					Yes □ ☑ No Dominance Test is > 50%
10.	Total Cover =	80			Yes □ ✓ No Prevalence Index is ≤ 3.0 *
	Total Cover =	80			
					Yes No Morphological Adaptations (Explain) *
	ot size: 5 ft radius)	95	Υ	FAC	Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1. 2.	Lonicera japonica	5	N		* Indicators of hydric soil and wetland hydrology must be
	Solidago canadensis			FACU	present, unless disturbed or problematic.
3.					D. C. W CV CV CV CV
4.					Definitions of Vegetation Strata:
5.					_
6					Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.					height (DBH), regardless of height.
8.					
9.					Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.
10.					Tt. tull.
11.					
12.					Herb - All herbaceous (non-woody) plants, regardless of size,
13.					and woody plants less than 3.28 ft. tall.
14.					
15.					Woody Vines - All woody vines greater than 3.28 ft. in height.
	Total Cover =	100			
Woody Vine Stra	tum (Plot size: 30 ft radius)				
1.					
2.					
3.					Hydrophytic Vegetation Present ☐ Yes ☑ No
4.					
5.					
<u> </u>	Total Cover =	0			
Remarks:	10(8) 00/61 =				
. tomanto.					
<u> </u>					
A 1 11/2 =					
Additional Re	marks:				



#### WETLAND DETERMINATION DATA FORM Eastern Mountains and Piedmont Region

(If Observed)	туре.			Dopui.				Tryuric 30il I	resent?		100 - 110
1- Histosol 2 - Histic Epipe 3 - Black Histic 4 - Hydrogen S 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 11 - Thick Dar 11 - Sandy Muc 4 - Sandy Gley	edon Sulfide ayers k (LRR N) Below Dark Su k Surface ck Mineral (LRR N	Irface	e if indicator S5 - Sandy F S6 - Strippec S7 - Dark SL S8 - Polyvalt S9 - Thin Da F2 - Loamy ( F3 - Deplete F6 - Redox E F7 - Deplete F8 - Redox E	Redox d Matrix urface ue Below D urk Surface Gleyed Mat d Matirx Dark Surfac d Dark Sur	eark Surface (MLRA 147, 148) trix ce face		☐ F13 - Um ☐ F19 - Pied	n-Manganese Ma bric Surface (MLR dmont Floodplain d Parent Materia	A 122, 136)  IN SOIIS (MLRA)  IN SOIIS (MLRA)  IN I	A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	r Problematic Soils 1  luck (MLRA 147)  Prairie Redox (MLRA 147, 148)  t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface  in in Remarks)  be present, unless disturbed or problematic  Yes No
						-					
			-				-				
		<del></del>	10YR 	4/3	100						silty clay
Depth 0	Depth 16	Horizon 	Color (	T	% 100		or (Moist)	% 	Type 	Location 	(e.g. clay, sand, loam)
Тор	Bottom			Matrix				Mottles		ı	Texture
		he depth needed to document the indic	ator or confirm the ab	osence of indicato	rs.) (Type: C=Con	centration, D=D	epletion, RM=Reduced Ma	atrix, CS=Covered/Coated	Sand Grains; Local	tion: PL=Pore Lining, M=M	latrix)
Map Unit Name Taxonomy (Sub		Steinsburg-Shelocta	association	n, very ste	eep S	Series Dr	ainage Class:				
SOILS											
Describe Record	ed Data (stre	eam gauge, monitoring	weii, aerial	pnotos, pr	evious insp	ections),	ıı avallable:		N/A		_
Field Observat Surface Water Water Table Pr Saturation Pres	Present? esent? ent?	☐ Yes ☑ No ☐ Yes ☑ No ☐ Yes ☑ No	Depth: Depth: Depth:		(in.) (in.) (in.)			Wetland Hyd	-	esent? $\Box$	Yes I No
Wetland Hydro	A1 - Surface A2 - High Wa A3 - Saturatio B1 - Water M B2 - Sedimen B3 - Drift Dep B4 - Algal Ma B5 - Iron Dep	ter Table on arks it Deposits osits t or Crust		re not pre	B9 - Wate B13 - Aqui B14 - True C1 - Hydro C3 - Oxidi C4 - Prese	atic Fauna Aquatic Fogen Sulficed Rhizo Pence of Rent Iron Rent Muck Surf	a Plants de Odor spheres on Livin duced Iron duction in Tilled ace			B10 - Drainage B16 - Moss Trir C2 - Dry Seaso C8 - Crayfish B C9 - Saturation	egetated Concave Surface Patterns n Lines n Water Table urrows Visible on Aerial Imagery Stressed Plants ic Position quitard
HYDROLOGY											
Remarks:	ogy Fleseit				S E INU			is this Samp	ning Foint	Willin A Wella	and! - Tes - NO
Hydrophytic Ver Wetland Hydrol				☐ Yes				Hydric Soils I		Within A Wetla	☐ Yes ☑ No
SUMMARY OF		or Hydrology   natu	rally proble	matic?			Yes	□ No		Range:	R18W Dir:
Are Vegetation	🗵 , Soil 🗆, d	or Hydrology 🗆 signi	ficantly dist	turbed?			normal circu		sent?	Township:	T1N
		itions on the site typi						☑ Yes □		Section:	S 1
Landform: Slope (%):	Terrace 0%	Latitude:	38.49630		cal Relief: .ongitude:		1/13	Datum:	NAD83	Sample Point: Community ID:	
Soil Unit:	-	Shelocta association	, very steep				Classification:	PUBGh		Wetland ID:	N/A
Applicant: Investigator #1:		ek		Invest	igator #2:	Matt De	nzler			State:	Ohio
/\nnlicont:	AEP			•						County:	Lawrence
Project/Site:	Bellefonte E	Extension 138 kV Lin	e Rebuild F	Project		Stanto	ec Project #:	193707276		Date:	10/21/20



Project/Site:	Bellefonte Extension 138 kV Li	ne Rebuild Proj	ect			Wetland ID: N/A Sample Point SP10
<b>VEGETATION</b>	(Species identified in all uppercase a	are non-native spe	cies.)			
	t size: 30 ft radius)	·				
	Species Name	%	6 Cover	Dominant	Ind.Status	Dominance Test Worksheet
1.						
2.					-	Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
3.						( ,
4.						Total Number of Dominant Species Across All Strata: 2 (B)
5.						· · · · · · · · · · · · · · · · · · ·
						Percent of Dominant Species That Are OBL, FACW, or
6.						FAC: <u>0.0%</u> (A/B)
7.						
8.						Prevalence Index Worksheet
9.						Total % Cover of: Multiply by:
10.						OBL spp. $0   x   1 = 0$
	Т	otal Cover =	0			FACW spp. 0
						FAC spp. 0 x 3 = 0
Sanling/Shruh Str	atum (Plot size: 15 ft radius)					FACU spp. 100 X 4 = 400
1.						" <del></del>
2.	_ <del></del>					UPL spp. $0   x   5 = 0$
						T. I. (0) (1)
3.						Total 100 (A) 400 (B)
4.						
5.						Prevalence Index = B/A = 4.000
6.						
7.						
8.						Hydrophytic Vegetation Indicators:
9.					-	Yes □ ☑ No Rapid Test for Hydrophytic Vegetation
10.						Yes □ ☑ No Dominance Test is > 50%
10.		otal Cover =				
	ı	otal Cover =	0			Yes □ ☑ No Prevalence Index is ≤ 3.0 *
						Yes □ ☑ No Morphological Adaptations (Explain) *
Herb Stratum (Plo						Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Poa pratensis		45	Υ	FACU	* Indicators of hydric soil and wetland hydrology must be
2.	Schedonorus arundinaceus		40	Υ	FACU	present, unless disturbed or problematic.
3.	Trifolium repens		5	N	FACU	processing armood alculated or problem allor
4.	Plantago major		5	N	FACU	Definitions of Vegetation Strata:
5.	Glechoma hederacea		5	N	FACU	<b>y</b>
6						Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.						height (DBH), regardless of height.
8.						- " W
9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.
10.						••• •••••
11.					-	
12.		<del></del>				Herb - All herbaceous (non-woody) plants, regardless of size,
13.						and woody plants less than 3.28 ft. tall.
14.						
15.						Woody Vines - All woody vines greater than 3.28 ft. in height.
10.		otal Caver				Troody Tilloo and Transfer and
	I	otal Cover =	100			
	um (Plot size: 30 ft radius)					
1.						
2.					-	
3.		<del></del>				Hydrophytic Vegetation Present ☐ Yes ☑ No
4.						
5.						
J.		otal Cover =	0		-	
Remarks:	ı	olai Covei =	U			
Remarks.						
Additional Ren	narks:					



Project/Site:										_	
		Extension 138 kV Lin	e Rebuild F	Project		Stant	ec Project #:	193707276		Date:	12/17/20
Applicant:	AEP									County:	Lawrence
Investigator #1:	Aaron Kwo	lek		Invest	igator #2:					State:	Ohio
Soil Unit:		oam 0-3% slopes, oc	casionally fl				Classification:	N/A		Wetland ID:	Wetland 5
Landform:	Depression				cal Relief:	Concav	е			Sample Point:	
Slope (%):	1%		38.49887		ongitude:	-82.650	863		NAD83	Community ID:	PEM
		ditions on the site typ			ar? (If no, e	xplain in rer	marks)	✓ Yes □	No	Section:	S 1
Are Vegetation	□ , Soil □ ,	or Hydrology   sign	ificantly dist	turbed?		Are	e normal circu	mstances pre	sent?	Township:	T1N
Are Vegetation	□ , Soil □ ,	or Hydrology Inatu	rally proble	matic?			Yes	□ No		Range:	R18W Dir:
SUMMARY OF Hydrophytic Ve	FINDINGS										
Hydrophytic Ve	getation Pre	sent?		Yes	s □ No			Hydric Soils I	Present?		
Wetland Hydrol	ogy Present	?		✓ Yes	s □ No			Is This Samp	oling Point \	Within A Wetla	and? <b>□ Yes ■ No</b>
Remarks:											
HYDROLOGY											
Wetland Hydro	ology Indica	ators (Check here if i	ndicators a	re not pre	sent ):				Secondary:		
Primary:		atoro (orroor rioro ii r	naioaioro ai	io not pro	, , , , , , , , , , , , , , , , , , ,					B6 - Surface So	oil Cracks
<u> </u>	A1 - Surface	Water			B9 - Wate	r-Stained	Leaves				egetated Concave Surface
✓	A2 - High Wa	ater Table			B13 - Aqu	atic Fauna	a			B10 - Drainage	
✓	A3 - Saturati				B14 - Tru					B16 - Moss Trin	
	B1 - Water M				C1 - Hydr			_		C2 - Dry Seaso	
	B2 - Sedime						spheres on Livir	ng Roots		C8 - Crayfish B	
	B3 - Drift De						educed Iron eduction in Tilled	Caila			Visible on Aerial Imagery
	B4 - Algal Ma B5 - Iron Der				Co - Rece			Soils		D1 - Stunted of D2 - Geomorph	Stressed Plants
		on Visible on Aerial Imag	ierv			plain in Re				D3 - Shallow Ad	
_	Di manaan	on violatio on nonarimaç	,01,		Outor (Ex	piaiii iii itt	Jinarko)			D4 - Microtopoo	
									✓	D5 - FAC-Neutr	ral Test
Field Observat	ions:										
Surface Water			Depth:	1	(in.)						
Water Table Pr		☑ Yes □ No	Depth:		(in.)			Wetland Hyd	drology Pr	esent?	Yes □ No
Saturation Pres		☑ Yes □ No	Depth:		(in.)						
					, ,						
Describe Record	led Data (str	eam gauge, monitoring	well, aerial	photos, pr	evious ins	pections),	if available:		N/A		
Remarks:											
SOILS											
COILC											
Map Unit Name		Nolan silt loam 0-3%	slopes, oc	casionally	/ flooded S	Series Dr	ainage Class:				
Map Unit Name Taxonomy (Sub	ogroup):			•			Ŭ				
Map Unit Name Taxonomy (Sub Profile Descrip	ogroup):	Nolan silt loam 0-3%		•			Ŭ		Sand Grains; Locat	ion: PL=Pore Lining, M=M	
Map Unit Name Taxonomy (Sub	ogroup):		ator or confirm the ab	osence of indicator	rs.) (Type: C=Cor	ncentration, D=D	epletion, RM=Reduced Ma	atrix, CS=Covered/Coated		ion: PL=Pore Lining, M=M	Texture
Map Unit Name Taxonomy (Sub Profile Descrip	ogroup): otion (Describe to			osence of indicator		ncentration, D=D	Ŭ	atrix, CS=Covered/Coated	Sand Grains; Locat	ion: PL=Pore Lining, M=M	
Map Unit Name Taxonomy (Sub Profile Descrip Top	ogroup): otion (Describe to Bottom	the depth needed to document the indic	ator or confirm the ab	osence of indicator	rs.) (Type: C=Cor	ncentration, D=D	epletion, RM=Reduced Ma	atrix, CS=Covered/Coated			Texture
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth	ogroup): otion (Describe to Bottom Depth	the depth needed to document the indic	ator or confirm the ab	Matrix Moist)	rs.) (Type: C=Cor	centration, D=D	epletion, RM=Reduced Mi	atrix, CS=Covered/Coated  Mottles  %	Туре	Location	Texture (e.g. clay, sand, loam)
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0	ogroup):  otion (Describe to  Bottom  Depth  8	the depth needed to document the indic  Horizon	Color (	Matrix Moist) 4/1	rs.) (Type: C=Cor	centration, D=D	Pepletion, RM=Reduced Milor (Moist)	atrix, CS=Covered/Coated  Mottles  %	Type 	Location 	Texture (e.g. clay, sand, loam) silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8	ogroup):  otion (Describe to  Bottom  Depth  8  16	the depth needed to document the indic Horizon	Color (	Matrix Moist) 4/1 4/1	% 100 90	Col	or (Moist) 5/8	atrix, CS=Covered/Coated  Mottles  % 10	Type  C	Location  M	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8	pgroup): otion (Describe to Bottom Depth 8 16	the depth needed to document the indic  Horizon	Color ( 10YR 10YR	Matrix Moist)  4/1  4/1	% 100 90	Col	or (Moist) 5/8	Mottles  Mottles   10	Type  C	Location  M	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8	pgroup): otion (Describe to Bottom Depth 8 16	the depth needed to document the indic  Horizon	Color ( 10YR 10YR	Matrix Moist)  4/1  4/1	% 100 90	Col	or (Moist)   5/8	Mottles  % 10	Type C	Location M	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8	pgroup):  otion (Describe to Bottom Depth 8 16	the depth needed to document the indic  Horizon	Color ( 10YR	Matrix Moist)  4/1  4/1	% 100 90	Col 10YR	or (Moist)   5/8	Mottles  Mottles  10   10	Type C	Location M	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 8	pgroup):  otion (Describe to Depth 8 16	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  4/1  4/1	% 100 90	Col 10YR	or (Moist)   5/8	### Additional Control of the Contro	Type C	Location M	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8	pgroup):  tion (Describe to Depth  8 16	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  4/1  4/1	% 100 90	Col 10YR	or (Moist)   5/8	### Additional Control of Control	Type C	Location  M	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8	pgroup):  tion (Describe to Depth  8 16	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  4/1  4/1      rs are not	% 100 90	Col 10YR	or (Moist)   5/8	### Additional Control of Control	Type C	Location  M Indicators fo	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8 NRCS Hydric	ogroup):  otion (Describe to Depth  8  16  Soil Field In	the depth needed to document the indic	Color ( 10YR 10YR	Matrix Moist)  4/1  4/1     s are not Redox	% 100 90	Col 10YR	or (Moist) 5/8	atrix, CS=Covered/Coated  Mottles  %   10	Type  C	Location  M        Indicators fo	Texture (e.g. clay, sand, loam) silty clay silty clay r Problematic Soils 1
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic	pgroup):  ption (Describe to Depth 8 16 Soil Field Ir	the depth needed to document the indic	Color ( 10YR 10YR e if indicator S5 - Sandy F S6 - Stripped S7 - Dark St	Matrix Moist)  4/1  4/1	% 100 90 present	Col 10YR ):	S/8	Mottles  Mottles  10   10	Type C	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S	pgroup):  ption (Describe to Depth  8  16  Soil Field In  column	the depth needed to document the indic	Color ( 10YR 10YR e if indicator S5 - Sandy F S6 - Strippec S7 - Dark St S8 - Polyvalt	Matrix Moist)  4/1  4/1     rs are not Redox di Matrix urface ue Below D	% 100 90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type C	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified L	pgroup):  ption (Describe to Depth 8 16 Soil Field Ir edon C Sulfide ayers	the depth needed to document the indic	Color ( 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark S0. S8 - Polyvalt S9 - Thin Da	Matrix Moist)  4/1  4/1    s are not Redox d Matrix d Matrix d Matrix urgs are selected by the selected	90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  Mottles  % 10	Type C	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epipe A3 - Black Histit A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc	ogroup):  ption (Describe to Depth 8 16 Soil Field Ir edon C Sulfide ayers ck (LRR N)	Horizon	Color ( 10YR 10YR 10YR	Matrix Moist)  4/1  4/1    rs are not Redox d Matrix Matrix  Moist)  4/1    graph and matrix  Matr	90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type C	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted	pgroup):  ption (Describe to Depth 8 16 Soil Field In edon C Sulfide agyers kk (LRR N) Below Dark Si Bel	Horizon	Color ( 10YR 10YR 10YR e if indicator \$5 - Sandy F \$6 - Stripper \$7 - Dark St. \$8 - Polyvalt \$9 - Thin Da F2 - Loamy F3 - Deplete	Matrix Moist)  4/1  4/1    rs are not Redox d Matrix urface ue Below D urk Surface Gleyed Mat d Matrix	% 100 90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type C	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar	pgroup):  ption (Describe to Depth  8 16 Soil Field In  edon C Sulfide ayers k (LRR N) Below Dark Si k Surface	Horizon	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Strippec S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy if F2 - Loamy if F3 - Deplete F6 - Redox I	Matrix Moist)  4/1  4/1    rs are not Redox d Matrix Inface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface Surface	% 100 90 present ark Surface (MLRA 147, 148 trix	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type C	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dan S1 - Sandy Muc	pgroup):  ption (Describe to Depth 8 16	Horizon	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark Su S9 - Thin Da F2 - Loamy F F3 - Deplete	Matrix Moist)  4/1  4/1     s are not Redox d Matrix d Matrix d Matrix urface gleyed Mat d Matrix Dark Surface d Dark	% 100 90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type C	Location   M      Indicators fo  A10 - 2cm N  A16 - Coast F  19 - Piedmon  TF12 - Very  Other (Explain	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epipe A3 - Black Histic A4 - Hydrogen S A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar	pgroup):  ption (Describe to Depth  8 16 Soil Field Ir  edon C Sulfide ayers k (LRR N) Below Dark Si k Surface sk Mineral (LRR yed Matrix	Horizon  dicators (check here	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Strippec S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy if F2 - Loamy if F3 - Deplete F6 - Redox I	Matrix Moist)  4/1  4/1    rs are not Redox d Matrix Inface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	% 100 90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type  C	Location   M     Indicators fo  A10 - 2cm N  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sut Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen 3 A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gley	pgroup):  ption (Describe to Depth 8 16	Horizon  dicators (check here	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark Su S9 - Thin Da F2 - Loamy F F3 - Deplete	Matrix Moist)  4/1  4/1     s are not Redox d Matrix d Matrix d Matrix urface gleyed Mat d Matrix Dark Surface d Dark	% 100 90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type  C	Location   M     Indicators fo  A10 - 2cm N  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8 NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gley Restrictive Layer	pgroup):  ption (Describe to Depth  8 16 Soil Field Ir  edon C Sulfide ayers k (LRR N) Below Dark Si k Surface sk Mineral (LRR yed Matrix	Horizon  dicators (check here	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark Su S9 - Thin Da F2 - Loamy F F3 - Deplete	Matrix Moist)  4/1  4/1    rs are not Redox d Matrix Inface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	% 100 90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type  C	Location   M     Indicators fo  A10 - 2cm N  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8 NRCS Hydric A1 - Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gley Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth  8 16 Soil Field Ir  edon C Sulfide ayers k (LRR N) Below Dark Si k Surface sk Mineral (LRR yed Matrix	Horizon  dicators (check here	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark Su S9 - Thin Da F2 - Loamy F F3 - Deplete	Matrix Moist)  4/1  4/1    rs are not Redox d Matrix Inface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	% 100 90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type  C	Location   M     Indicators fo  A10 - 2cm N  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8 NRCS Hydric A1 - Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gley Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth  8 16 Soil Field Ir  edon C Sulfide ayers k (LRR N) Below Dark Si k Surface sk Mineral (LRR yed Matrix	Horizon  dicators (check here	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark Su S9 - Thin Da F2 - Loamy F F3 - Deplete	Matrix Moist)  4/1  4/1    rs are not Redox d Matrix Inface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	% 100 90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type  C	Location   M     Indicators fo  A10 - 2cm N  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam) silty clay silty clay
Map Unit Name Taxonomy (Sub Profile Descrip Top Depth 0 8 NRCS Hydric A1 - Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen S A5 - Stratified Li A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gley Restrictive Layer (If Observed)	pgroup):  ption (Describe to Depth  8 16 Soil Field Ir  edon C Sulfide ayers k (LRR N) Below Dark Si k Surface sk Mineral (LRR yed Matrix	Horizon  dicators (check here	Color ( 10YR 10YR 10YR e if indicator S5 - Sandy F S6 - Stripper S7 - Dark Su S9 - Thin Da F2 - Loamy F F3 - Deplete	Matrix Moist)  4/1  4/1    rs are not Redox d Matrix Inface ue Below Durk Surface Gleyed Mat d Matrix Dark Surface d Dark Surface	% 100 90 present	Col 10YR ):	F12 - Iron   F13 - Um   F19 - Pie	Mottles  % 10	Type  C	Location   M     Indicators fo  A10 - 2cm N  A16 - Coast F  F19 - Piedmon  TF12 - Very  Other (Expla	Texture (e.g. clay, sand, loam) silty clay silty clay

Wetland ID: Wetland 5 Sample Point SP11



Project/Site:

Bellefonte Extension 138 kV Line Rebuild Project

#### WETLAND DETERMINATION DATA FORM

<b>VEGETATION</b>		se are non-native s	pecies.)			
Tree Stratum (I	Plot size: 30 ft radius)					
l ,	<u>Species Name</u>	-	% Cover	_	Ind.Status	Dominance Test Worksheet
1.						N
2.						Number of Dominant Species that are OBL, FACW, or FAC:(A)
3. 4.						Total Number of Deminant Species Agrees All Strate: 1 (P)
5.	<del></del>					Total Number of Dominant Species Across All Strata: 1 (B)
6.						Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)
7.						
8.						Prevalence Index Worksheet
9.						Total % Cover of: Multiply by:
10.						OBL spp. 90
		Total Cover =	0			FACW spp. 5
						FAC spp. 5 x 3 = 15
	Stratum (Plot size: 15 ft radius)					FACU spp. 0 x 4 = 0
1.						UPL spp0
2. 3.	<del></del>					Total 100 (A) 115 (P)
4.	<del></del>					Total 100 (A) 115 (B)
5.						Prevalence Index = B/A = 1.150
6.						Trovalence mack = B/N = 7.700
7.						
8.						Hydrophytic Vegetation Indicators:
9.						Yes ☑ ☐ No Rapid Test for Hydrophytic Vegetation
10.						Yes ☑ □ No Dominance Test is > 50%
		Total Cover =	0			Yes ☑ □ No Prevalence Index is ≤ 3.0 *
						Yes □ ☑ No Morphological Adaptations (Explain) *
	Plot size: 5 ft radius)					Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Typha latifolia		85	Y	OBL	* Indicators of hydric soil and wetland hydrology must be
2.	Poa palustris		5	N	FACW	present, unless disturbed or problematic.
3. 4.	Carex frankii Symphyotrichum pilosum		5 5	N N	OBL FAC	Definitions of Vegetation Strata:
5.						Definitions of vegetation Strata.
6						Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.						height (DBH), regardless of height.
8.						
9.						Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
10.						ft. tall.
11.						
12.						Herb - All herbaceous (non-woody) plants, regardless of size,
13.						and woody plants less than 3.28 ft. tall.
14.						
15.		T ( ) C	400			Woody Vines - All woody vines greater than 3.28 ft. in height.
		Total Cover =	100			
Woody Vino Ct	rotum (Plot cizo: 20 ft radius)					
1.	ratum (Plot size: 30 ft radius)					
2.	<del></del>					
3.						Hydrophytic Vegetation Present ☑ Yes ☐ No
4.						
5.						
		Total Cover =	0			
Remarks:			-		-	
Additional R	emarks:					



#### WETLAND DETERMINATION DATA FORM Eastern Mountains and Piedmont Region

Project/Site:											
	Bellefonte	Extension 138 kV Lin	ie Rebuild F	Project		Stant	ec Project #:	193707276		Date:	12/17/20
Applicant:	AEP									County:	Lawrence
Investigator #1:	Aaron Kwo	lek		Invest	tigator #2:	Kate Bo	mar			State:	Ohio
Soil Unit:		oam 0-3% slopes, oc	casionally f				Classification:	N/A		Wetland ID:	Wetland 5
Landform:	Rise	Jan 6 676 616 pcc, 66	odolorially i		cal Relief:					Sample Point:	
Slope (%):	1%	Latituda	38.49887		ongitude:			Datum	NAD83	Community ID:	
									No		S1
Are climatic/nyc		ditions on the site typ	car for this	time or ye	ear? (It no, e					Section:	
		or Hydrology 🛚 sign				Ar	e normal circu	•	sent?	Township:	T1N
		or Hydrology 🗆 natu	ırally proble	ematic?			Yes	s □ No		Range:	R18W Dir:
<b>SUMMARY OF</b>											
Hydrophytic Ve	getation Pre	sent?		☐ Yes				Hydric Soils	Present?		☐ Yes ☑ No
Wetland Hydrol	logy Present	?		☐ Yes	s 🗹 No			Is This Samp	oling Point	Within A Wetla	and? - Yes - No
Remarks:											
HYDROLOGY											
_		ators (Check here if i	ndicators a	re not pre	esent ):				Secondary:		
<u>Primary</u>										B6 - Surface So	
	A1 - Surface				B9 - Wate						egetated Concave Surface
	A2 - High Wa A3 - Saturati				B13 - Aqu B14 - Tru				H	B10 - Drainage B16 - Moss Trin	
	B1 - Water M				C1 - Hvdr				ä		
							spheres on Livir	na Roots			
							educed Iron				Visible on Aerial Imagery
	B4 - Algal Ma	at or Crust			C6 - Rece	ent Iron Re	eduction in Tilled	Soils		D1 - Stunted or	Stressed Plants
					C7 - Thin					22 000o.p	
	B7 - Inundati	on Visible on Aerial Imaç	gery		Other (Ex	plain in Re	emarks)				
										D4 - Microtopog D5 - FAC-Neutr	
							1			D5 - FAC-Neuti	arrest
Field Observat	tions:										
Surface Water	Present?	☐ Yes  ☑ No	Depth	:	(in.)			Wetland Hyd	drology Dr		Yes ☑ No
Water Table Pr	esent?	☐ Yes ☑ No	Depth	:	(in.)			welland nye	urology Fr	esent? $\Box$	res 🖭 No
Saturation Pres	sent?	☐ Yes ☑ No	Depth		(in.)						
D	la I Data (ata		•				Y a sallabla		NI/A		
	ied Data (Str	eam gauge, monitoring	weii, aeriai	pnotos, pr	evious ins	bections)	, if available:		N/A		
Remarks:											
SOILS											
Map Unit Name	<b>)</b> :	Nolan silt loam 0-3%	slopes, oc	casionally	/ flooded S	Series D	ainage Class:				
Taxonomy (Sub	ogroup):										
						2000 2.	anage class.				
		the depth needed to document the indi	cator or confirm the a	bsence of indicate	ors.) (Type: C=Cor		-	latrix CS=Covered/Coater	d Sand Grains: Loca	tion: PI =Pore Lining, M=M	latrix)
Profile Descrip	otion (Describe to	the depth needed to document the indic	cator or confirm the a		ors.) (Type: C=Cor		-		d Sand Grains; Loca	tion: PL=Pore Lining, M=M	latrix) Texture
Top	Bottom			Matrix		ncentration, D=E	Depletion, RM=Reduced M	Mottles			Texture
Profile Descrip Top Depth	Bottom Depth	Horizon	Color (	Matrix (Moist)	%	centration, D=E	Depletion, RM=Reduced M	Mottles %	Туре	Location	Texture (e.g. clay, sand, loam)
Top Depth 0	Bottom Depth 10	Horizon 	Color (	Matrix (Moist) 4/4	% 100	Co	Depletion, RM=Reduced M	Mottles % 	Type 	Location 	Texture (e.g. clay, sand, loam) silty clay
Top Depth 0 10	Bottom (Describe to Bottom Depth 10 16	Horizon  	Color ( 10YR 7.5YR	Matrix (Moist) 4/4 5/8	% 100 100	Co	Oppletion, RM=Reduced M	Mottles %  	Type	Location 	Texture (e.g. clay, sand, loam) silty clay silty clay
Top Depth 0	Bottom Depth 10	Horizon 	Color (	Matrix (Moist) 4/4	% 100	Co	Depletion, RM=Reduced M	Mottles % 	Type 	Location 	Texture (e.g. clay, sand, loam) silty clay
Top Depth 0 10	Bottom (Describe to Bottom Depth 10 16	Horizon  	Color ( 10YR 7.5YR	Matrix (Moist) 4/4 5/8	% 100 100	Co	Oppletion, RM=Reduced M	Mottles %  	Type	Location 	Texture (e.g. clay, sand, loam) silty clay silty clay
Top Depth  10	Bottom Depth 10 16	Horizon   	Color ( 10YR 7.5YR	Matrix (Moist) 4/4 5/8	% 100 100 	Co	or (Moist)	Mottles   %	Type	Location  	Texture (e.g. clay, sand, loam) silty clay silty clay
Profile Descrip Top Depth 0 10	Bottom Depth 10 16	Horizon	Color ( 10YR 7.5YR 	Matrix (Moist) 4/4 5/8	% 100 100 	Co	or (Moist)	Mottles	Type	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Profile Descrip Top Depth 0 10	Bottom Depth 10 16	Horizon	Color ( 10YR 7.5YR 	Matrix (Moist) 4/4 5/8	% 100 100  	CO	or (Moist)	Mottles	Type	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Profile Descrip Top Depth 0 10	Depth Depth 10 Communication (Depth 10 Communication) 16 Communication 16	Horizon	Color ( 10YR 7.5YR   	Matrix (Moist) 4/4 5/8	% 100 100   	CO	or (Moist)	Mottles	Type	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Profile Descrip  Top Depth  0 10	btion (Describe to  Bottom Depth 10 16	Horizon	Color ( 10YR 7.5YR   	Matrix (Moist)  4/4  5/8	% 100 100	CO	or (Moist)	Mottles	Type	Location	Texture (e.g. clay, sand, loam) silty clay silty clay
Profile Descript	btion (Describe to  Bottom Depth 10 16	Horizon	Color ( 10YR 7.5YR e if indicato	Matrix (Moist)  4/4  5/8	% 100 100	Co	Or (Moist)	Mottles	Type	Location Indicators fo	Texture  (e.g. clay, sand, loam)  silty clay  silty clay  r Problematic Soils 1
Profile Descrip  Top Depth 0 10 NRCS Hydric	btion (Describe to  Bottom Depth 10 16 Soil Field In	Horizon	Color ( 10YR 7.5YR e if indicato S5 - Sandy	Matrix (Moist)  4/4  5/8     rs are not Redox	% 100 100	CO	Or (Moist)	Mottles %	Type	Location	Texture (e.g. clay, sand, loam) silty clay silty clay r Problematic Soils <sup>1</sup> Muck (MLRA 147)
Profile Descrip  Top Depth 0 10 NRCS Hydric 1- Histosol 2 - Histic Epip	Bottom Depth 10 16 Soil Field Ir	Horizon	Color ( 10YR 7.5YR e if indicato S5 - Sandy S6 - Strippe	Matrix (Moist)  4/4  5/8       rrs are not Redox d Matrix	% 100 100	CO	or (Moist)	Mottles %	Type	Location	Texture  (e.g. clay, sand, loam)  silty clay  silty clay  r Problematic Soils <sup>1</sup> Prairie Redox (MLRA 147, 148)
Profile Descrip  Top Depth  0 10 NRCS Hydric  1- Histosol 2 - Histic Epip 3 - Black Histir	Bottom Depth 10 16 Soil Field In	Horizon	Color ( 10YR 7.5YR e if indicato S5 - Sandy   S6 - Strippes S7 - Dark S6	Matrix (Moist)  4/4  5/8      rs are not Redox d Matrix urface	% 100 100      	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type	Location Indicators fo A10 - 2 cm M A16 - Coast F F19 - Piedmon	Texture (e.g. clay, sand, loam) silty clay silty clay r Problematic Soils <sup>1</sup> Muck (MLRA 147)
Profile Descrip  Top Depth 0 10 NRCS Hydric 1- Histosol 2 - Histic Epip	Bottom Depth 10 16 Soil Field In	Horizon	Color ( 10YR 7.5YR e if indicato S5 - Sandy S6 - Strippe	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type	Location	Texture  (e.g. clay, sand, loam)  silty clay  silty clay
Profile Descrip Top Depth 0 10 NRCS Hydric -1- Histosol -2 - Histic Epipe -3 - Black Histic -4 - Hydrogen :	Bottom Depth 10 16 Soil Field Index of Sulfide anyers	Horizon	Color ( 10YR 7.5YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark \$S \$8 - Polyval	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type	Location	Texture  (e.g. clay, sand, loam)  silty clay  silty clay   Problematic Soils   t Floodplain Soils (MLRA 137, 148) t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface
Profile Descrip  Top Depth  0 10 NRCS Hydric  1- Histosol 2 - Histic Epip 3 - Black Histic 4 - Hydrogen 5 - Stratified L	btion (Describe to  Bottom Depth 10 16 Soil Field Ir  edon C Sulfide ayers ck (LRR N)	Horizon	Color ( 10YR 7.5YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark \$0 \$8 - Polyval \$9 - Thin Da \$9 - Thin Da \$7 - Dark \$1 - Dark \$2 - Dark \$3 - Dark \$4 - Dark \$5 - Dark \$5 - Dark \$6 - Strippe \$7 - Dark \$6 - Strippe \$7 - Dark \$7 - Dark \$8 - Dark \$9 - Thin Da \$9 - Thin Da \$1 - Dark \$1 - Dark \$2 - Dark \$3 - Dark \$3 - Dark	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type	Location	Texture  (e.g. clay, sand, loam)  silty clay  silty clay   Problematic Soils   t Floodplain Soils (MLRA 137, 148) t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface
Profile Descrip  Top Depth  0 10 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histic 4 - Hydrogen 3 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dar	btion (Describe to Depth Depth 10 16 Soil Field Ir edon C Sulfide ayers ck (LRR N) Below Dark Si k Surface	Horizon  dicators (check here	Color ( 10YR 7.5YR e if indicato S5 - Sandy   S6 - Strippe S7 - Dark Si S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type	Location	Texture  (e.g. clay, sand, loam)  silty clay  silty clay   Problematic Soils   t Floodplain Soils (MLRA 137, 148) t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface
Profile Descrip  Top Depth  0 10 NRCS Hydric -1- Histosol -2 - Histic Epipe -3 - Black Histic -4 - Hydrogen 3 -5 - Stratified L -10 - 2 cm Muc -11 - Depleted -12 - Thick Dar -13 - Sandy Muc	btion (Describe to Depth 10 16	Horizon  dicators (check here	Color ( 10YR 7.5YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark \$1 \$8 - Polyval \$9 - Thin Da \$72 - Loamy \$73 - Deplete \$74 - Deplete \$75 - Deplete	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type asses (LRR N, I	Location Indicators fo A10 - 2 cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay   r Problematic Soils   t Floodplain Soils (MLRA 137, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface in in Remarks)
Profile Descrip  Top Depth  0 10 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histic 4 - Hydrogen 3 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dan 11 - Sandy Muc 4 - Sandy Gle	btion (Describe to Depth 10 16	Horizon  dicators (check here	Color ( 10YR 7.5YR e if indicato S5 - Sandy   S6 - Strippe S7 - Dark Si S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type asses (LRR N, I	Location Indicators fo A10 - 2 cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay   Problematic Soils   t Floodplain Soils (MLRA 137, 148) t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface
Profile Descrip  Top Depth  0 10 NRCS Hydric 1- Histosol 2- Histic Epip 3- Black Histic 4- Hydrogen 5- Stratified L 10-2 cm Muc 11- Depleted 12- Thick Dar 11- Sandy Muc 4- Sandy Gle  Restrictive Layer	btion (Describe to Depth 10 16	Horizon  dicators (check here	Color ( 10YR 7.5YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark \$1 \$8 - Polyval \$9 - Thin Da \$72 - Loamy \$73 - Deplete \$74 - Deplete \$75 - Deplete	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type asses (LRR N, Í RA 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay   r Problematic Soils   t Floodplain Soils (MLRA 137, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface in in Remarks)
Profile Descript Top Depth 0 10 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histic 4 - Hydrogen 1 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dar 11 - Sandy Muc 14 - Sandy Gle Restrictive Layer (If Observed)	btion (Describe to Bottom Depth 10 16	Horizon  dicators (check here	Color ( 10YR 7.5YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark \$1 \$8 - Polyval \$9 - Thin Da \$72 - Loamy \$73 - Deplete \$74 - Deplete \$75 - Deplete	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type asses (LRR N, Í RA 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay      r Problematic Soils   Muck (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface iin in Remarks)
Profile Descrip  Top Depth  0 10 NRCS Hydric 1- Histosol 2- Histic Epip 3- Black Histic 4- Hydrogen 5- Stratified L 10-2 cm Muc 11- Depleted 12- Thick Dar 11- Sandy Muc 4- Sandy Gle  Restrictive Layer	Bottom Depth 10 16 Soil Field Ir edon Stk (LRR N) Below Dark Stk Surface sk Mineral (LRR yed Matrix	Horizon  dicators (check here	Color ( 10YR 7.5YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark \$1 \$8 - Polyval \$9 - Thin Da \$72 - Loamy \$73 - Deplete \$74 - Deplete \$75 - Deplete	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type asses (LRR N, Í RA 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay      r Problematic Soils   Muck (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface sin in Remarks)
Profile Descript Top Depth 0 10 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histic 4 - Hydrogen 1 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dar 11 - Sandy Muc 14 - Sandy Gle Restrictive Layer (If Observed)	btion (Describe to Bottom Depth 10 16	Horizon  dicators (check here	Color ( 10YR 7.5YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark \$1 \$8 - Polyval \$9 - Thin Da \$72 - Loamy \$73 - Deplete \$74 - Deplete \$75 - Deplete	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type asses (LRR N, Í RA 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay      r Problematic Soils   Muck (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface iin in Remarks)
Profile Descript Top Depth 0 10 NRCS Hydric 1- Histosol 2 - Histic Epip 3 - Black Histic 4 - Hydrogen 1 5 - Stratified L 10 - 2 cm Muc 11 - Depleted 12 - Thick Dar 11 - Sandy Muc 14 - Sandy Gle Restrictive Layer (If Observed)	btion (Describe to Bottom Depth 10 16	Horizon  dicators (check here	Color ( 10YR 7.5YR e if indicato \$5 - Sandy   \$6 - Strippe \$7 - Dark \$1 \$8 - Polyval \$9 - Thin Da \$72 - Loamy \$73 - Deplete \$74 - Deplete \$75 - Deplete	Matrix (Moist)  4/4  5/8	% 100 100	Co	Pepletion, RM=Reduced M   Or (Moist)	Mottles %	Type asses (LRR N, Í RA 122, 136) in Soils (MLRA 127, 147)	Location Indicators fo A10 - 2cm N A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	Texture  (e.g. clay, sand, loam)  silty clay  silty clay      r Problematic Soils   Muck (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface iin in Remarks)



Project/Site:	Bellefonte Extension 138 kV Line Rebui	ld Project			Wetland ID: Wetland 5 Sample Point SP12
VEGETATION	(Species identified in all uppercase are non-na	tive species.)			
Free Stratum (Ple	ot size: 30 ft radius)	0: 2	<b>.</b>	1.16: :	Deminance Took Warkshoot
1.	Species Name	% Cover	Dominant 	Ind.Status	Dominance Test Worksheet
2.					Number of Deminerat Charles that are ODL FACIAL as FAC:
3.					Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)
3. 4.	- <del>-</del>				Total Number of Deminant Species Agrees All Strate: 2 (R)
5.	_ <del></del>				Total Number of Dominant Species Across All Strata: 2 (B)
6.	_ <del></del>				Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)
7.					1 AC (A/B)
8.					Prevalence Index Worksheet
9.					Total % Cover of: Multiply by:
10.					OBL spp. 0 x 1 = 0
10.	Total Cove				FACW spp. 0 x 2 = 0
	10101 0011	51 –			FAC spp. 0 x 3 = 0
Sapling/Shrub Str	atum (Plot size: 15 ft radius)				FACU spp. 100
1.					UPL spp. 0
2.					
3.					Total 100 (A) 400 (B)
4.					
5.					Prevalence Index = B/A = 4.000
6.					
7.					
8.					Hydrophytic Vegetation Indicators:
9.					Yes ☐ ☑ No Rapid Test for Hydrophytic Vegetation
10.					Yes ☐ ☑ No Dominance Test is > 50%
	Total Cove	er = 0			Yes ☐ ☑ No Prevalence Index is ≤ 3.0 *
					Yes □ ☑ No Morphological Adaptations (Explain) *
Herb Stratum (Plo	t size: 5 ft radius)				Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Taraxacum officinale	2	N	FACU	* Indicators of hydric soil and wetland hydrology must be
2.	Glechoma hederacea	15	N	FACU	present, unless disturbed or problematic.
3.	Elymus canadensis	40	Υ	FACU	
4.	Poa pratensis	30	Υ	FACU	Definitions of Vegetation Strata:
5.	Trifolium repens	13	N	FACU	
6					Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.	<del></del>				height (DBH), regardless of height.
8.					
9.					Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.
10.					··· ·
11.					
12.					Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.
13.	-				,,
14.					Mandy Vines All woody vinos greater than 2.20 ft in height
15.					Woody Vines - All woody vines greater than 3.28 ft. in height.
	Total Cove	er = 100			
Maria No. 5:	(Distriction 00 % " )				
	um (Plot size: 30 ft radius)				
1. 2.					
3.					Hydrophytic Vocatation Present   Voc     No
					Hydrophytic Vegetation Present ☐ Yes ☑ No
4.					
5.	Total Cove				
Remarks:	Total Cove	51 = U			
Remarks.					
L					
Additional Da	marka				
Additional Rei	iidiks:				



A10 - 2 cm Muc A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gler Restrictive Layer (If Observed) Remarks:	k Surface k Mineral (LRR	rock	F7 - Deplete F8 - Redox		10"			1 Indicators of hydroph Hydric Soil	, , ,	, ,,	e present, unless disturbed or problematic.  Yes   No
A11 - Depleted A12 - Thick Dar S1 - Sandy Muc S4 - Sandy Gle	k Surface ck Mineral (LRR yed Matrix			Depression					, , ,	, ,,	
A1- Histosol A2 - Histic Epip A3 - Black Histic A4 - Hydrogen A5 - Stratified L	edon C Sulfide ayers k (LRR N)		S5 - Sandy S6 - Strippe S7 - Dark SI S8 - Polyval S9 - Thin Da F2 - Loamy F3 - Deplete F6 - Redox	Redox d Matrix urface lue Below D ark Surface Gleyed Mated Matirx	Oark Surface (MLRA 147, 148 trix		☐ F13 - Um ☐ F19 - Pie	n-Manganese M nbric Surface (ML edmont Floodpla d Parent Materia	RA 122, 136) in Soils (MLRA D Al (MLRA 127, 14	A10 - 2cm M A16 - Coast P F19 - Piedmoni TF12 - Very Other (Expla	r Problematic Soils 1  uck (MLRA 147) rarine Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface in in Remarks)
NDCC Undeig		 dicators (check here									
		<del></del>									
Ö	10		10YR	4/1	95	10YR	5/8	5	C	M	silty clay
Depth	Depth	Horizon	Color (	(Moist)	%	Col	or (Moist)	%	Туре	Location	(e.g. clay, sand, loam)
Top	Bottom (Describe to	the depth needed to document the indic	cator or confirm the a	Matrix	ors.) (Type: C=Co	ncentration, D=D	epletion, RM=Reduced M	Mottles	d Sand Grains; Locati	on: PL=Pore Lining, M=M	Texture
Taxonomy (Sub											
SOILS Map Unit Name	e:	Elkinsville-Urban lan	id complex.	, 1-8% slo	pes	Series Dr	ainage Class:	:			
Remarks:	ieu Data (SIII	eam gauge, monitoring	y wen, aenai	priotos, pr	EVIOUS IIIS	peciions),	ıı avallable.		19/74		
Field Observat Surface Water Water Table Pr Saturation Pres	Present? esent? ent?	✓ Yes □ No ✓ Yes □ No ✓ Yes □ No	Depth Depth Depth	: 0 : 0	(in.) (in.) (in.)		Managhaba.	Wetland Hy	drology Pre	esent?	Yes □ No
Wetland Hydrol Remarks: HYDROLOGY Wetland Hydr. Primary	A1 - Surface A2 - High Wa A3 - Saturati B1 - Water M B2 - Sedimer B3 - Drift Der B4 - Algal Ma B5 - Iron Der	water tter Table on larks tt Deposits ostis tt Or Crust		ver not pre	B9 - Wate B13 - Aqu B14 - Tru C1 - Hydi C3 - Oxid C4 - Pres C6 - Recc C7 - Thin	er-Stained uatic Fauni e Aquatic rogen Sulfi lized Rhizc ence of Ro	a Plants de Odor espheres on Livir educed Iron eduction in Tilled face	ng Roots	Secondary:	B10 - Drainage B16 - Moss Trim C2 - Dry Season C8 - Crayfish Bu C9 - Saturation	iil Cracks getated Concave Surface Patterns n Lines n Water Table urrows Visible on Aerial Imagery Stressed Plants ic Position quitard raphic Relief
Hydrophytic Ve	getation Pre			☑ Yes				Hydric Soils		A/:41=: A \A/-41=	✓ Yes □ No
Are Vegetation		or Hydrology □ natu	rally proble	ematic?			✓ Yes	s □ No		Range:	R18W Dir:
		litions on the site typ or Hydrology □ sign			ear? (It no, e		<sub>narks)</sub> e normal circu		No esent?	Section: Township:	S 1 T1N
Slope (%):	1%	Latitude:	38.49755		ongitude:				NAD83	Community ID:	PEM
Soil Unit: Landform:	Elkinsville- Depression	Jrban land complex,	1-8% slope		N۱ :cal Relief		Classification: e	: N/A		Wetland ID: Sample Point:	Wetland 6 SP13
	Aaron Kwo		4.00/ 1		tigator #2:					State:	Ohio
	AEP	EXTENSION 130 KV LIN	ie Rebuila i	Project		Stant	ec Project #:	193707276		Date: County:	12/17/20 Lawrence
Project/Site: Applicant:	Bellefonte	Extension 138 kV Lin	- Dalaman I								



Project/Site:	Bellefonte Extension 138 kV Line Rebuild P	roject			Wetland ID: Wetland 6 Sample Point SP13
VEGETATION		species.)			
Tree Stratum (PI	ot size: 30 ft radius)				D
	<u>Species Name</u>	% Cover	_	Ind.Status	Dominance Test Worksheet
1.					
2.					Number of Dominant Species that are OBL, FACW, or FAC:(A)
3.					
4.					Total Number of Dominant Species Across All Strata: 2 (B)
5.					Percent of Dominant Species That Are OBL, FACW, or
6.					FAC: 100.0% (A/B)
7.					
8.					Prevalence Index Worksheet
9.					Total % Cover of: Multiply by:
10.					OBL spp. 90 x 1 = 90
	Total Cover =	0			FACW spp. 0
					FAC spp. 0 x 3 = 0
Sapling/Shrub St	ratum (Plot size: 15 ft radius)				FACU spp
1.					UPL spp. 0
2.					
3.					Total 90 (A) 90 (B)
4.					
5.					Prevalence Index = B/A = 1.000
6.					
7.					
8.					Hydrophytic Vegetation Indicators:
9.					Yes □ ☑ No Rapid Test for Hydrophytic Vegetation
10.					Yes ☑ ☐ No Dominance Test is > 50%
	Total Cover =	0			Yes ☑ □ No Prevalence Index is ≤ 3.0 *
					Yes □ ☑ No Morphological Adaptations (Explain) *
Herb Stratum (Pl	ot size: 5 ft radius)				Yes □ ☑ No Problem Hydrophytic Vegetation (Explain) *
1.	Juncus articulatus	45	Υ	OBL	
2.	Ranunculus sceleratus	45	Υ	OBL	* Indicators of hydric soil and wetland hydrology must be
3.					present, unless disturbed or problematic.
4.					Definitions of Vegetation Strata:
5.					
6					Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.					height (DBH), regardless of height.
8.					
9.					Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
10.					ft. tall.
11.					
12.					Herb - All herbaceous (non-woody) plants, regardless of size,
13.					and woody plants less than 3.28 ft. tall.
14.	 				
15.					Woody Vines - All woody vines greater than 3.28 ft. in height.
15.					Woody Villes - All woody Villes gleater than 3.20 ft. in fleight.
	Total Cover =	90			
10/	(D) ( ) (O) (( ) ( )				
	tum (Plot size: 30 ft radius)				
1.					
2.					H. Land, C. Warrender, Branch G. V. G. N.
3.					Hydrophytic Vegetation Present ☑ Yes ☐ No
4.					
5.	 				
	Total Cover =	0			
Remarks:					
Additional Re	marks:				
I					



										T	
Project/Site:		Extension 138 kV Lin	ie Rebuild F	roject		Stant	tec Project #:	193707276		Date:	12/17/20
Applicant:	AEP					D				County:	Lawrence
Investigator #1			4.00/ 1		igator #2:			N1/A		State:	Ohio
Soil Unit:		Urban land complex,	1-8% slope				Classification:	: N/A		Wetland ID:	Wetland 6
Landform:	Rise 1%	المائد المائد ا	20 40720		al Relief:			Datum	NADOO	Sample Point:	
Slope (%):		ditions on the site typ	38.49726		ongitude:			✓ Yes □	NAD83 No	Community ID: Section:	S 1
		or Hydrology □ sign			ai! (If no, e			ımstances pre		Township:	T1N
		or Hydrology  asign				Ai			sent		R18W Dir:
SUMMARY OF		or Hydrology - Hatu	irally proble	malic?			™ res	s □ No		Range:	R TOW DIF:
Hydrophytic Ve		nont?		□ Voo	. ☑ No			Hydric Soils I	Drogont?		□ Voc □ No
Wetland Hydro				□ Yes						Within A Wetla	✓ Yes □ No
Remarks:	logy Fresem			□ 1es	ino			is this same	oling Point	willin A wella	and? - res - No
Remarks:											
HYDROLOGY											
		ators (Check here if i	ndicators a	re not pres	sent ):				Secondary:		
Primary		Mater			DO 141-4-	С+-:	Lanua			B6 - Surface Sc	
	A1 - Surface A2 - High Wa				B9 - Wate B13 - Agu					B10 - Sparsely Ve	egetated Concave Surface
	A3 - Saturati				B14 - True					B16 - Moss Trin	
	B1 - Water N				C1 - Hydr	ogen Sulf	ide Odor			C2 - Dry Seaso	
	B2 - Sedime						ospheres on Livir	ng Roots		C8 - Crayfish B	
	B3 - Drift De						educed Iron	l Caila			Visible on Aerial Imagery Stressed Plants
	B4 - Algal Ma B5 - Iron De				C7 - Thin		eduction in Tilled	30115		D2 - Geomorph	
		on Visible on Aerial Imag	gery		Other (Ex					D3 - Shallow Ad	
					•	•	•			D4 - Microtopog	graphic Relief
										D5 - FAC-Neutr	al Test
Field Observa	tions:										
Surface Water	Present?	☐ Yes ☑ No	Depth:		(in.)			Wetland Hyd	drology Pr	esent?	Yes ☑ No
Water Table Pi		Yes No	Depth:		(in.)			Wettand Hy	arology i i		100 = 110
Saturation Pres	sent?	□ Yes 🗹 No	Depth:		(in.)						
Describe Record	ded Data (str	eam gauge, monitoring	well, aerial	photos, pre	evious ins	pections)	, if available:		N/A		
Remarks:	*										
SOILS											
Map Unit Name	e:	Elkinsville-Urban lan	d complex,	1-8% slop	oes S	Series D	rainage Class:				
Taxonomy (Sul											
Profile Descrip	ption (Describe to	the depth needed to document the indic	cator or confirm the at	sence of indicator	s.) (Type: C=Cor	ncentration, D=E	Depletion, RM=Reduced M	latrix, CS=Covered/Coated	Sand Grains; Locat	tion: PL=Pore Lining, M=M	atrix)
Тор	Bottom			Matrix				Mottles			Texture
Depth	Depth	Horizon	Color (	Moist)	%	Co	lor (Moist)	%	Type	Location	(e.g. clay, sand, loam)
0	10		10YR	5/1	100						silty clay
					1		1	+			1
				 rs are not						  Indicators fo	
NRCS Hydric  A1- Histosol A2 - Histic Epip	Soil Field In		e if indicator S5 - Sandy F S6 - Stripped	rs are not Redox			   F12 - Iror F13 - Um	  n-Manganese Ma hbric Surface (MLR	asses (LRR N,	Indicators fo A10 - 2cm M A16 - Coast F	  r Problematic Soils <sup>1</sup>
NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi	Soil Field In		e if indicator S5 - Sandy F S6 - Stripped S7 - Dark Su	rs are not Redox d Matrix	  present	  ): □	    	  n-Manganese Ma	asses (LRR N, RA 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon	r Problematic Soils <sup>1</sup> Juck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147)
NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen	Soil Field In		e if indicator S5 - Sandy F S6 - Stripped S7 - Dark St S8 - Polyvalt	rs are not Redox d Matrix urface ue Below Da	 present	 ): $\Box$	    	n-Manganese Mahbric Surface (MLR	asses (LRR N, RA 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very	r Problematic Soils <sup>1</sup> Juck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface
NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L	Soil Field Ir bedon ic Sulfide ayers		e if indicator S5 - Sandy F S6 - Stripped S7 - Dark St S8 - Polyvalt S9 - Thin Da	rs are not Redox d Matrix Inface ue Below Dark Surface	present ark Surface	 ): $\Box$	    	  n-Manganese Ma hbric Surface (MLR	asses (LRR N, RA 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very	r Problematic Soils <sup>1</sup> Juck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147)
NRCS Hydric  A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc	Soil Field Ir  bedon  ic  Sulfide  ayers  ck (LRR N)	 dicators (check here	e if indicator S5 - Sandy F S6 - Strippec S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy	rs are not Redox d Matrix urface ue Below Di rk Surface Gleyed Mat	present ark Surface	 ): $\Box$	    	n-Manganese Mahbric Surface (MLR	asses (LRR N, RA 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very	r Problematic Soils <sup>1</sup> Juck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface
NRCS Hydric A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L	Soil Field Ir bedon ic Sulfide ayers ck (LRR N) Below Dark S	 dicators (check here	e if indicator S5 - Sandy F S6 - Stripped S7 - Dark St S8 - Polyvalt S9 - Thin Da	rs are not Redox d Matrix Inface Le Below Di rk Surface Gleyed Mat d Matirx	present  ark Surface (MLRA 147, 148	 ): $\Box$	    	n-Manganese Mahbric Surface (MLR	asses (LRR N, RA 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very	r Problematic Soils <sup>1</sup> Juck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface
NRCS Hydric  A1- Histosol  A2 - Histic Epip  A3 - Black Histi  A4 - Hydrogen  A5 - Stratified L  A10 - 2 cm Mu  A11 - Depleted	Soil Field Ir  bedon ic Sulfide .ayers Ck (LRR N) Below Dark S rk Surface	dicators (check here	e if indicator S5 - Sandy F S6 - Strippec S7 - Dark St S8 - Polyvala S9 - Thin Da F2 - Loamy G F3 - Deplete	rs are not Redox d Matrix urface ue Below Di rk Surface Gleyed Mat d Matirx Dark Surfac	present  ark Surface (MLRA 147, 148 rix	 ): $\Box$	    	n-Manganese Mahbric Surface (MLR	asses (LRR N, RA 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very	r Problematic Soils <sup>1</sup> Juck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface
NRCS Hydric  A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L A10 - 2 cm Muc A11 - Depleted A12 - Thick Da S1 - Sandy Mu	Soil Field Ir  bedon ic Sulfide .ayers ck (LRR N) Below Dark S rk Surface ck Mineral (LRR	dicators (check here	e if indicator S5 - Sandy F S6 - Stripper S7 - Dark St S8 - Polyvalt S9 - Thin Da F2 - Loamy 'F F3 - Deplete F6 - Redox I	rs are not Redox d Matrix Inface Le Below Di rk Surface Gleyed Mat d Matrix Dark Surfac d Dark Surfac	present  ark Surface (MLRA 147, 148 rix	 ): $\Box$	    	n-Manganese Ma bric Surface (MLF dmont Floodplai d Parent Materia	asses (LRR N., A 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	r Problematic Soils <sup>1</sup> Juck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface
NRCS Hydric  A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L  A10 - 2 cm Muc A11 - Depleted A12 - Thick Da S1 - Sandy Mu S4 - Sandy Gle  Restrictive Layer	Soil Field Ir  bedon ic Sulfide .ayers ck (LRR N) Below Dark S rk Surface ck Mineral (LRR	urface	e if indicator S5 - Sandy F S6 - Stripper S7 - Dark SL S8 - Polyvalt S9 - Thin Da F2 - Loamy F F3 - Deplete F6 - Redox I F7 - Deplete	rs are not Redox d Matrix Inface Le Below Di rk Surface Gleyed Mat d Matrix Dark Surfac d Dark Surfac	present  ark Surface (MLRA 147, 148 rix	 ): $\Box$	    	n-Manganese Ma bric Surface (MLF dmont Floodplai d Parent Materia	asses (LRR N., A 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	r Problematic Soils <sup>1</sup> Juck (MLRA 147) rrairie Redox (MLRA 147, 148) t Floodplain Soils (MLRA 136, 147) Shallow Dark Surface in in Remarks)
NRCS Hydric  A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L  A10 - 2 cm Muc A11 - Depleted A12 - Thick Da S1 - Sandy Mu S4 - Sandy Gle  Restrictive Layer (If Observed)	Soil Field Ir  pedon ic Sulfide ayers ck (LRR N) Below Dark S rk Surface ck Mineral (LRR eyed Matrix Type:	urface  N, MLRA 147, 148)	e if indicator S5 - Sandy F S6 - Stripper S7 - Dark SL S8 - Polyvalt S9 - Thin Da F2 - Loamy F F3 - Deplete F6 - Redox I F7 - Deplete	rs are not Redox d Matrix urface ue Below Do rrk Surface Gleyed Mat d Matirx Dark Surfac d Dark Surfac	present  ark Surface (MLRA 147, 148 rix ee	 ): $\Box$	    	n-Manganese Mabric Surface (MLF) demont Floodplaid Parent Materia	asses (LRR N., A 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	r Problematic Soils 1  Juck (MLRA 147)  rrairie Redox (MLRA 147, 148)  t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface in in Remarks)
NRCS Hydric  A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L  A10 - 2 cm Muc A11 - Depleted A12 - Thick Da S1 - Sandy Mu S4 - Sandy Gle  Restrictive Layer	Soil Field Ir  bedon ic Sulfide .ayers ck (LRR N) Below Dark S rk Surface ck Mineral (LRR eyed Matrix	urface  N, MLRA 147, 148)	e if indicator S5 - Sandy F S6 - Stripper S7 - Dark SL S8 - Polyvalt S9 - Thin Da F2 - Loamy F F3 - Deplete F6 - Redox I F7 - Deplete	rs are not Redox d Matrix urface ue Below Do rrk Surface Gleyed Mat d Matirx Dark Surfac d Dark Surfac	present  ark Surface (MLRA 147, 148 rix ee	 ): $\Box$	    	n-Manganese Mabric Surface (MLF) demont Floodplaid Parent Materia	asses (LRR N., A 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	r Problematic Soils 1  Juck (MLRA 147)  rrairie Redox (MLRA 147, 148)  t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface in in Remarks)
NRCS Hydric  A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L  A10 - 2 cm Muc A11 - Depleted A12 - Thick Da S1 - Sandy Mu S4 - Sandy Gle  Restrictive Layer (If Observed)	Soil Field Ir  pedon ic Sulfide ayers ck (LRR N) Below Dark S rk Surface ck Mineral (LRR eyed Matrix Type:	urface  N, MLRA 147, 148)	e if indicator S5 - Sandy F S6 - Stripper S7 - Dark SL S8 - Polyvalt S9 - Thin Da F2 - Loamy F F3 - Deplete F6 - Redox I F7 - Deplete	rs are not Redox d Matrix urface ue Below Do rrk Surface Gleyed Mat d Matirx Dark Surfac d Dark Surfac	present  ark Surface (MLRA 147, 148 rix ee	 ): $\Box$	    	n-Manganese Mabric Surface (MLF) demont Floodplaid Parent Materia	asses (LRR N., A 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	r Problematic Soils 1  Juck (MLRA 147)  rrairie Redox (MLRA 147, 148)  t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface in in Remarks)
NRCS Hydric  A1- Histosol A2 - Histic Epip A3 - Black Histi A4 - Hydrogen A5 - Stratified L  A10 - 2 cm Muc A11 - Depleted A12 - Thick Da S1 - Sandy Mu S4 - Sandy Gle  Restrictive Layer (If Observed)	Soil Field Ir  pedon ic Sulfide ayers ck (LRR N) Below Dark S rk Surface ck Mineral (LRR eyed Matrix Type:	urface  N, MLRA 147, 148)	e if indicator S5 - Sandy F S6 - Stripper S7 - Dark SL S8 - Polyvalt S9 - Thin Da F2 - Loamy F F3 - Deplete F6 - Redox I F7 - Deplete	rs are not Redox d Matrix urface ue Below Do rrk Surface Gleyed Mat d Matirx Dark Surfac d Dark Surfac	present  ark Surface (MLRA 147, 148 rix ee	 ): $\Box$	    	n-Manganese Mabric Surface (MLF) demont Floodplaid Parent Materia	asses (LRR N., A 122, 136)	Indicators fo A10 - 2cm M A16 - Coast F F19 - Piedmon TF12 - Very Other (Expla	r Problematic Soils 1  Juck (MLRA 147)  rrairie Redox (MLRA 147, 148)  t Floodplain Soils (MLRA 136, 147)  Shallow Dark Surface in in Remarks)



Project/Site:	Bellefonte Extension 138 kV Line Re	build Project			Wetland ID: Wetland 6 Sample Point SP14
VEGETATION	(Species identified in all uppercase are nor	n-native species.)			
Tree Stratum (Pla	ot size: 30 ft radius)				B. C. T. (W. I.I.)
	<u>Species Name</u>	% Cover	<u>Dominant</u>	Ind.Status	Dominance Test Worksheet
1.					
2.					Number of Dominant Species that are OBL, FACW, or FAC:(A)
3.					
4.					Total Number of Dominant Species Across All Strata: 2 (B)
5.					Percent of Dominant Species That Are OBL, FACW, or
6.					FAC: 0.0% (A/B)
7.					
8.					Prevalence Index Worksheet
9.					Total % Cover of: Multiply by:
10.					OBL spp. 0
	Total C	over = 0			FACW spp. 0
					FAC spp. 0 x 3 = 0
Sapling/Shrub Str	atum (Plot size: 15 ft radius)				FACU spp. 110
1.					UPL spp. $0   x   5 = 0$
2.					
3.					Total 110 (A) 440 (B)
4.					<u> </u>
5.					Prevalence Index = B/A = 4.000
6.					
7.					
8.					Hydrophytic Vegetation Indicators:
9.					Yes □ ☑ No Rapid Test for Hydrophytic Vegetation
10.					Yes □ ☑ No Dominance Test is > 50%
10.	Total C				Yes □ ☑ No Prevalence Index is ≤ 3.0 *
	Total C	00001 = 0			Yes □ ✓ No Morphological Adaptations (Explain) *
Lie de Otre terre (Die	( along E formalism)				1 0 1 1 7
	t size: 5 ft radius)	40	V	EVCII	Yes □
1.	Elymus canadensis	40	Y	FACU	* Indicators of hydric soil and wetland hydrology must be
2.	Poa pratensis	40	Y	FACU	present, unless disturbed or problematic.
3.	Taraxacum officinale	10	N	FACU	D.C. W CM CM Ottob
4.	Trifolium repens	15	N	FACU	Definitions of Vegetation Strata:
5.	Lepidium virginicum	5	N	FACU	_
6					Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
7.					height (DBH), regardless of height.
8.					
9.					Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28
10.					ft. tall.
11.					
12.					Herb - All herbaceous (non-woody) plants, regardless of size,
13.					and woody plants less than 3.28 ft. tall.
14.					
15.					Woody Vines - All woody vines greater than 3.28 ft. in height.
	Total C	over = 110			
	, otal •				
Woody Vine Strat	um (Plot size: 30 ft radius)				
1.					
2.					
3.					Hydrophytic Vegetation Present □ Yes ☑ No
4.					Tryanophysio rogolation resont a res a 140
5.					
J	Total C				
Pomorko:	Total C	010 0			
Remarks:					
Additional Rei	marks:				

## D.2 ORAM DATA FORMS

# **Background Information**

Name: Accon Kwolpk	
Date: 11/5/2020	
Affiliation: Stantec	
Address: 11687 Lebanon Rd Cincinnasii, OH 45241	
Phone Number: 513 842 8200	
e-mail address: Accon. Kwolek @ stanter. com	
Name of Wetland: wetland 1	
Vegetation Communit(ies):	
HGM Class(es):	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
Seminary to the series of the	,J
Lat/Long or UTM Coordinate	
30.798979 N -06.698378 W	
Astrand	
County Lawrence	
Township Cog / Grove	
Section and Subsection 530 TIN 218W	
Hydrologic Unit Code 050901630103	
Site Visit 10/20/2020	
National Wetland Inventory Map	
Ohio Wetland Inventory Map	
Soil Survey No Nolin Gilt Loam, 0-3% slopes occasionally floo	dad
Delineation reportmap  SEE Ecological Inventory Report	200

Name of Wetland:  Wetland Size (acres, hectares): 1.05 cc/ 0.41	
11102 861	296
Sketch: Include north arrow, relationship with other surface v	waters, vegetation zones, etc.
	^
wethand 2 Resident	N
Mand Land	4
setti // 8/05/0	
1/2/201	\
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
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1	& Many
	o cret hair
	quevet privares
1	
·	
	2
	(wetland)
mments, Narrative Discussion, Justification of Category Cha	
sulverts facilitate stream.	
novement within wetland	1,
al score: 30	Category:   or Z 6 ray 3
30	Category:   or Z Gray Z

wetland 1

## Scoring Boundary Worksheet

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

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

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

## Narrative Rating

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

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

		-
3% or more of the cover of upper forest canopy consisting of aciduous trees with large diameters at breast height (dbh), generally ameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
	Go to Question 9a	
ake Erie coastal and tributary wetlands. Is the wetland located at a elevation less than 575 feet on the USGS map, adjacent to this	YES (	NO)
evation, or along a tributary to Lake Erie that is accessible to fish?		Go to Question 10
oes the wetland's hydrology result from measures designed to revent erosion and the loss of aquatic plants, i.e. the wetland is artially hydrologically restricted from Lake Erie due to lakeward or indward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
	Go to Question 10	7.4
e. the wetland is hydrologically unrestricted (no lakeward or upland order alterations), or the wetland can be characterized as an estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth	YES Go to Question 9d	Go to Question 10
loes the wetland have a predominance of native species within its	YES	NO
egetation communities, although non-native or disturbance tolerant ative species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
	Go to Question 10	
Does the wetland have a predominance of non-native or disturbance olerant native plant species within its vegetation communities?	Wetland should be evaluated for possible Category 3 status	NO Go to Question 10
ake Plain Sand Prairies (Oak Openings) Is the wetland located in	YES	NO/
cucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this	Wetland is a Category 3 wetland. Go to Question 11	Go to Question 11
Relict Wet Prairies. Is the wetland a relict wet prairie community	YES	(NO)
dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	Wetland should be evaluated for possible Category 3 status Complete Quantitative	Complete Quantitative Rating
THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO I	ake Erie coastal and tributary wetlands. Is the wetland located at a elevation less than 575 feet on the USGS map, adjacent to this evation, or along a tributary to Lake Erie that is accessible to fish? Does the wetland's hydrology result from measures designed to event erosion and the loss of aquatic plants, i.e. the wetland is artially hydrologically restricted from Lake Erie due to lakeward or indivard dikes or other hydrological controls?  The Lake Erie water levels the wetland's primary hydrological influence, as the wetland is hydrologically unrestricted (no lakeward or upland order alterations), or the wetland can be characterized as an estuarine wetland with lake and river influenced hydrology. These clude sandbar deposition wetlands, estuarine wetlands, river mouth estlands, or those dominated by submersed aquatic vegetation.  Those the wetland have a predominance of native species within its egetation communities, although non-native or disturbance tolerant ative species can also be present?  The lake Plain Sand Prairies (Oak Openings) Is the wetland be haracterized by the following description: the wetland has a sandy ubstrate with interspersed organic matter, a water table often within everal inches of the surface, and often with a dominance of the ramineous vegetation listed in Table 1 (woody species may also be resent). The Ohio Department of Natural Resources Division of latural Areas and Preserves can provide assistance in confirming this peo of wetland and its quality.  The Ohio Department of Natural Resources Division of latural Areas and Preserves can provide assistance in confirming this peo of wetland and its quality.  The Ohio Department of Natural Resources Division of latural Areas and Preserves can provide assistance in confirming this peo of wetland and its quality.  The Ohio Counties of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union lounties), northwest Ohio (e.g. Erie, Huron. Lucas, Wood Counties), and portions of western Ohio	Aske Erie coastal and tributary wetlands. Is the wetland located at a elevation less than 575 feet on the USGS map, adjacent to this evalion, or along a tributary to Lake Erie that is accessible to fish?  Does the wetland's hydrology result from measures designed to event erosion and the loss of aquatic plants, i.e. the wetland is artially hydrologically restricted from Lake Erie due to takeward or indivard dikes or other hydrological controls?  Wetland should be evaluated for possible Category 3 status  Go to Question 9b  YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10  YES  Go to Question 9b  YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10  YES  Go to Question 10  YES  Go to Question 10  YES  Wetland should be evaluation replaced by submersed aquatic vegetation.  Those dominated by submersed aquatic vegetation.  Those the wetland have a predominance of native species within its egetation communities, although non-native or disturbance tolerant attive species can also be present?  Wetland is a Category 3 wetland  Go to Question 10  YES  Wetland is a Category 3 wetland  Go to Question 10  YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10  YES  Wetland is a Category 3 wetland  Go to Question 10  YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10  YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10  YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10  YES  Wetland is a Category 3 wetland.  Go to Question 10  YES  Wetland is a Category 3 wetland in the possible Category 3 status  Go to Question 10  YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10  YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10  YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10  YES  Wetland should be evaluated for possible Category 3 status  Go to Quest

Table 1. Characteristic plant species.

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

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

Site: Wa	etla	nd	Rater(s): A	Kwolek	Date: 10/2	0/20
2	7	Metric 1. Wetland A	rea (size).			
max 6 pts. s	subtotal	Select one size class and assign scor >50 acres (>20.2ha) (6 pts) 25 to <50 acres (10.1 to <2) 10 to <25 acres (4 to <10.1) 3 to <10 acres (1.2 to <4ha 0.3 to <3 acres (0.12 to <1.0 0.1 to <0.3 acres (0.04 to <<0.1 acres (0.04ha) (0 pts)	e. 0.2ha) (5 pts) ha) (4 pts) (3 pts) 2ha) (2pts)			
7	5	Metric 2. Upland bu	ffers and s	urroundin	g land use.	
S and a 14 pts.	subtotal	2a. Calculate average buffer width. S WIDE. Buffers average 50 MEDIUM. Buffers average VERY NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth or LOW. Old field (>10 years) MODERATELY HIGH. Res	Select only one and an (164ft) or more and 25m to <50m (82 to a 10m to <25m (32f average <10m (<32f Select one or doul older forest, prairie , shrub land, young idential, fenced pas	assign score. Do no ound wetland perim <164ft) around we to <82ft) around w t) around wetland p ble check and avera, savannah, wildlife second growth fore bure, park, conservs	ot double check. eter (7) land perimeter (4) etland perimeter (1) erimeter (0) age. area, etc. (7) st. (5)	
. ~		Metric 3. Hydrology	en pasture, row cro	pping, mining, cons	truction. (1)	
,	22					
nax 30 pts.	subfotal	3a. Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surfa Perennial surface water (lai 3c. Maximum water depth. Select or >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in)	ce water (3) ke or stream) (5) lly one and assign so (2)	3d. Du	nnectivity. Score all that apply.  100 year floodplain (1)  Between stream/lake and other humal part of wetland/upland (e.g. forest), or part of riparian or upland corridor (1) ration inundation/saturation. Score one of Semi- to permanently inundated/saturated (3)  Seasonally inundated (2)  Seasonally saturated in upper 30cm and average.	or dbl che rated (4)
		None or none apparent (12 Recovered (7) Recovering (3) Recent or no recovery (1)		inces observed	point source (nonstormwater) filling/grading road bed/RR track dredging other	
	7 7	Metric 4. Habitat Al		_		
	32 subtotal	4a. Substrate disturbance. Score on None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or continuous con	e or double check and available check and avai	ore.		À
	3 2	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1)	Check all disturbal mowing grazing clearcutting selective cu woody debritoxic polluta	tting is removal	shrub/sapling removal herbaceous/aquatic bed removal sedimentation dredging farming nutrient enrichment	li i

1 Present v

Amphibian breeding pools

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

30

End of Quantitative Rating. Complete Categorization Worksheets.

Microtopography Cover Scale

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO	If yes, evaluate for Category 3; may also be
	Question 9b. Lake Erie Wetlands - Restricted	YES (10)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2	
· waining	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	17	
	Metric 4. Habitat	10	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-2	
	TOTAL SCORE	30	Category based on score breakpoints

Zone

Complete Wetland Categorization Worksheet.

wetland 1

# Wetland Categorization Worksheet

NO NO	Is quantitative rating score less than the Category 2 scoring threshold (excluding gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been overcategorized by the ORAM  Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. Is quantitative rating score greater than the Category 2 scoring threshold (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has
NO	Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. Is quantitative rating score greater than the Category 2 scoring threshold (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has
d	scoring threshold (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has
NO	been under-categorized by the ORAM
	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
determined by the	functions because of its type, landscape position, size, loca
	NO Wetland is assigned to category as determined by the

		al Category	
Choose one	Category 1	Category 2	Category 3
			0-7

1002 Grat Zone

End of Ohio Rapid Assessment Method for Wetlands.

# Background Information

Name: Agran Kwolek
Date: 11/5/20
Affiliation:
Stantec Address:
1/687 Lebanon Rd Cincinnati, 0/+ 45241
Phone Number: 513 842 8 200
e-mail address: Agran Kwolek @ Stantec. com
Name of Wetland: wetland Z
Vegetation Communit(ies): PEM/ PSS /
HGM Class(es):
Depressiona/
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
243
The Land 1 Joethand 1
Lat/Long or UTM Coordinate 78 Upo 162 and 02 110 70 70
USGS Quad Name As Hand
County Lawrence
Township Coal Grove
Section and Subsection 530 TIN R18W
Hydrologic Unit Code 05090103010 3
Site Visit 10/20/20
National Wetland Inventory Map
Ohio Wetland Inventory Map
Soil Survey No - Nolin Silt Loam 0-3% Silt loam Occasionally 5 boded
Delineation report/map SCE Ecological Inventor Report

Name of Wetland:	
Wetland Z  Wetland Z  Wetland Size (acres, hectares): 0,4/96/0,16	ha
Sketch: Include north arrow, relationship with other surface	waters, vegetation zones, etc.
Macien Pike	
Rt SZ Samb	ode camper h
Final score :	Category:

### Scoring Boundary Worksheet

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

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

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

## **Narrative Rating**

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

ŧ	Question	Cirolo sas	1
1	Critical Habitat Is the second	Circle one	
	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 2	Go to Question 2
2	Inreatened or Endangered Species Is the wetland known to contain	YES	NO.
	an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	Wetland is a Category 3 wetland.	Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in	Go to Question 3	110
	Natural Heritage Database as a high quality wetland?	Wetland is a Category 3 wetland	NO So to Question 4
4	Significant Breeding or Concentration Area. Does the wetland	Go to Question 4	(110)
	contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	Wetland is a Category 3 wetland Go to Question 5	Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland	Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no	Go to Question 6 YES	601
	significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	Wetland is a Category 3 wetland Go to Question 7	Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that	YES	(NO)
	is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	Wetland is a Category 3 wetland Go to Question 8a	Go to Question 8a
Ba	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	NO
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES	NO
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Go to Question 9b YES Wetland should be evaluated for possible Category 3 status	Go to Question 10 NO Go to Question 90
9c	Are Lake Eric water to at a transfer in	Go to Question 10	
	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland	NO Go to Question 9e
9e		Go to Question 10	
96	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES  Wetland should be evaluated for possible Category 3 status  Go to Question 10	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES ( Wetland is a Category 3 wetland. Go to Question 11	NO Go to Question 11
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensi
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamogrostis strict
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherode
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaum
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellit
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwell
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrews
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum	2	Helianthus grosseserrati
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spical
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflor
	Parnassia glauca	Schechzeria palustris		Lythrum alatu
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianus
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceu
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutan
	Salix candida	Vaccinium oxycoccos		Spartina pectinal
	Salix myricoides	Woodwardia virginica		Solidago riddell
	Salix serissima	Xyris difformis		
	Solidago ohioensis	My to ago mis		
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: wet!	and Z	Rater(s): A kwolek	Date: 10/20/20
1 1	Metric 1. Wetland	Area (size).	
1			
max 6 pts subtoti	Coloct offe size class and assign :	score.	
	>50 acres (>20.2ha) (6 25 to <50 acres (10.1 to	pts)	
	10 to <25 acres (4 to <1	(0.1ha) (4 pts)	
	3 to <10 acres (1.2 to <	4ha) (3 pts)	
	0.3 to <3 acres (0.12 to	<1.2ha) (2pts)	
	0.1 to <0.3 acres (0.04 <0.1 acres (0.04ha) (0 p	to <0.12ha) (1 pt)	
1 7		ouffers and surrounding	and use.
nax 14 pts. subtot	22 Calculate average by fferred to		No.
	za. Carchiate average buller widt	h. Select only one and assign score. Do not d 50m (164ft) or more around wetland perimeter	ouble check.
	MEDIUM. Buffers aver	age 25m to <50m (82 to <164ft) around wetland	perimeter (4)
	NARROW. Buffers ave	rage 10m to <25m (32ft to <82ft) around wetla	nd perimeter (1)
	2b. Intensity of surrounding land	ers average <10m (<32ft) around wetland perin use. Select one or double check and average.	eter (0)
	VERY LOW. 2nd grow	th or older forest, prairie, savannah, wildlife are	a, etc. (7)
	LOW. Old field (>10 ye	ars), shrub land, young second growth forest, (	5)
	MODERATELY HIGH.	Residential, fenced pasture, park, conservation I, open pasture, row cropping, mining, construct	tiltage, new fallow field. (3)
	Metric 3 Hydrole	n, open pasture, row cropping, mining, construc	00n. (1)
7 9	Metric 3. Hydrolo	gy.	
nax 30 pts subtot	3a. Sources of Water. Score all t	hat analy	
	High pH groundwater (5		ctivity. Score all that apply. 100 year floodplain (1)
	Other groundwater (3)		setween stream/lake and other human use (1)
	Precipitation (1)		Part of wetland/upland (e.g. forest), complex (1
	Seasonal/Intermittent seasonal Seasona		Part of riparian or upland corridor (1) in inundation/saturation. Score one or dbl ched
	3c. Maximum water depth. Select		Semi- to permanently inundated/saturated (4)
	>0.7 (27.6in) (3)	St. 1 (S)	Regularly inundated/saturated (3)
	0.4 to 0.7m (15.7 to 27, <0.4m (<15.7in) (1)		Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1)
	3e. Modifications to natural hydro	logic regime. Score one or double check and a	verage.
	None or none apparent	(12) Check all disturbances observed	
	Recovered (7)		point source (nonstormwater)
	Recovering (3) Recent or no recovery (		illing/grading oad bed/RR track
		weie	tredging
	_	stormwater input	other calvert
1	Metric 4 Habitat	Alteration and Developme	ant
6 15	motito 4. Habitat	moration and beveloping	iii.
nax 20 pts. subtot	4a. Substrate disturbance. Score	one or double check and average.	
	None or none apparent		
	Recovered (3)		
	Recovering (2)	1)	
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select	only one and assign score.	
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7)	1) only one and assign score.	
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7) Very good (6)	1) only one and assign score.	
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7)	1) only one and assign score.	
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3)	1) only one and assign score.	
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)	1) only one and assign score.	
	Recovering (2) Recent or no recovery ( Ab. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)	only one and assign score.	
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one	only one and assign score. or double check and average.	
	Recovering (2) Recent or no recovery ( Ab. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)	or double check and average.  (9) Check all disturbances observed	shrub/sapling removal
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent Recovered (6) Recovering (3)	or double check and average.  (9) Check all disturbances observed mowing grazing	shrub/sapling removal serbaceous/aquatic bed removal
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one None or none apparent Recovered (6)	or double check and average.  (9) Check all disturbances observed mowing grazing clearcutting	nerbaceous/aquatic bed removal sedimentation
	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent Recovered (6) Recovering (3)	or double check and average.  (9) Check all disturbances observed mowing grazing clearcutting selective cutting	nerbaceous/aquatic bed removal sedimentation dredging
15	Recovering (2) Recent or no recovery ( 4b. Habitat development. Select Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one None or none apparent Recovered (6) Recovering (3)	or double check and average.  (9) Check all disturbances observed mowing grazing  1) clearcutting selective cutting woody debris removal	nerbaceous/aquatic bed removal sedimentation

Site: Wet	and Z	Rater(s): A	enoltk	Date:  0/20/20
subsolal fin				
0 15	Metric 5. Spec	ial Wetlands.		
nax 10 pts. subten	Bog (10) Fen (10) Old growth forest Mature forested v Lake Erie coastal Lake Erie coastal Lake Plain Sand Relict Wet Prairie Known occurrenc Significant migrat	(10) wetland (5) l/tributary wetland-unrestricted hy l/tributary wetland-restricted hydr Prairies (Oak Openings) (10)	ology (5) dangered species (10) or usage (10)	
-4 11		t communities, in		crotopography.
max 20 pts. subto	6a. Wetland Vegetation Co Score all present using 0 to		Community Cover Scale	ha (0.2471 acres) contiguous area
	Aquatic bed Emergent Shrub	1	Present and either compr	ises small part of wetland's derate quality, or comprises a
	Forest Mudflats Open water	2		ises significant part of wetland's derate quality or comprises a small ty
	Other_ 6b. horizontal (plan view) I	Interspersion. 3	Present and comprises si vegetation and is of hig	gnificant part, or more, of wetland's h quality
	Select only one. High (5)	Narrative	Description of Vegetation Q	luality
	Moderately high( Moderate (3)			predominance of nonnative or
	Moderately low () Low (1)	2) mod	Native spp are dominant	component of the vegetation, /or disturbance tolerant native spp
	None (0) 6c. Coverage of invasive p to Table 1 ORAM long form	plants. Refer	can also be present, an	d species diversity moderate to enerally w/o presence of rare.

	the presence of rare, threatened, or endangered s	spp
Mudflat an	d Open Water Class Quality	
0	Absent <0.1ha (0.247 acres)	
1	Low 0.1 to <1ha (0.247 to 2,47 acres)	
2	Moderate 1 to <4ha (2.47 to 9.88 acres)	
3	High 4ha (9.88 acres) or more	

Microtopography Cover Scale

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

and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always,



Absent (1) 6d. Microtopography.

Score all present using 0 to 3 scale.

Extensive >75% cover (-5)

Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)

Nearly absent <5% cover (0)

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

End of Quantitative Rating. Complete Categorization Worksheets.

# **ORAM Summary Worksheet**

wetland Z

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

Complete Wetland Categorization Worksheet.

# Wetland Categorization Worksheet

Choices	Circle one	1	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions:  Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	(NO)	Is quantitative rating score less than the Category 2 scoring threshold (excluding gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been overcategorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	NO)	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO)	Is quantitative rating score greater than the Category 2 scoring threshold (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	(20)	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES  Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

# **Background Information**

EVENOVE A
Name: Auron Kwolek
Date: 11/5/20
Affiliation: Stantec
Phone Number
Phone Number: 513 842 8200
e-mail address: Lucie Ke Stantec. com
Name of Wetland: wetland 3
Vegetation Communit(ies): PFO
HGM Class(es):
Depoessiona/
Location of Wetland: include man, address, north arrow, landmarks, distances, roads, etc.  According to the stand of the s
Lat/Long or UTM Coordinate 38.498536° N, -82.647897
USGS Quad Name Ashland
County Lawrence
Township Coal Grove
Section and Subsection S 30 TIN RIEW
Hydrologic Unit Code 050 90 103 010 3
Site Visit 10/20/20
National Wetland Inventory Map PFO 1A
Ohio Wetland Inventory Map N/A
No Notin Sittlegm - 0-3% slepes oceasionally flooded
Delineation reportinap See Ecological Inventory Report

Name of Wetland: Wetland 3		
	1 0,07 129	
Wetland Size (acres, hectares): 0,1790 Sketch: Include north arrow, relationship with o	other surface waters, vegetation zones, etc.	
wetland 1		4
Meth		T
	love	
	cless, is	
(6)4	Jeciduo	
ed en in		
Mit & a cow -eg	t une	
12 y For	structure X 13	
Mited easly so Zze growth Zze growth	X	
	Susue	1 . /
1	ar ar	eq
		winds and
KSP	x5007	No. 18
vetland 3		1 3
1		Of .
		1
Comments, Narrative Discussion, Justification	of Category Changes:	
Comments, Narrative Discussion, Justification	or Category Changes:	
		Mary Control
		-
		No. of the last
		B 1
The second second second		Charles Co.
		THE STATE OF
	La Paris	
		1-1-1-1
A STATE OF THE PARTY OF		
Final score: 45	Category:	2
Final score: 45	outegory.	-

wetland 3.

### Scoring Boundary Worksheet

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

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

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

## **Narrative Rating**

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES  Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Go to Question 9a	0
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this	YES	(NO)
9b	elevation, or along a tributary to Lake Erie that is accessible to fish?  Does the wetland's hydrology result from measures designed to	Go to Question 9b YES	Go to Question 10
30	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically, restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 9c
		Go to Question 10	
90	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
	and the second s	Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance	YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be evaluated for possible Category 3 status	Go to Question 10
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the	YES	NO
		Wetland is a Category 3 wetland.	Go to Question 11
	gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	Go to Question 11	
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species

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

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

Site: Wet	land 3	Rater(s):	4 K	volet Date: 10	2/20/2
3 le subjotal fin	Metric 5. Spec	cial Wetlands.			
nax 10 pts. subto	Bog (10) Fen (10) Old growth forest Mature forested v Lake Erie coasta Lake Erie coasta	(10) wetland (5) l/tributary wetland-unrestrict l/tributary wetland-restricted	hydrok		
9 4:	Relict Wet Prairie Known occurrence Significant migra Category 1 Wetta  Metric 6. Plan	ce state/federal threatened tory songbird/water fowl hat and. See Question 1 Qualit t communities.	or endal bitat or e ative Ra	usage (10) eting (-10) erspersion, microtopograp	hy.
max 20 pts. subto	ou Troband regetation of			Community Cover Scale	November 1
	Score all present using 0 to Aquatic bed Emergent Shrub	3 scale.	1	Absent or comprises <0.1ha (0.2471 acres) con Present and either comprises small part of wetla vegetation and is of moderate quality, or comp significant part but is of low quality	and's
	Forest Mudflats Open water		2	Present and either comprises significant part of vegetation and is of moderate quality or comp part and is of high quality	
	6b. horizontal (plan view) l Select only one.	Interspersion.	3	Present and comprises significant part, or more vegetation and is of high quality	of wetland's
	High (5)	Narra	ative De	scription of Vegetation Quality	
	Moderately high( Moderate (3)		low	Low spp diversity and/or predominance of nonn- disturbance tolerant native species	
	Moderately low ( Low (1) None (0) 6c. Coverage of invasive p to Table 1 ORAM long form	plants. Refer	mod	Native spp are dominant component of the vege although nonnative and/or disturbance toleran can also be present, and species diversity mo moderately high, but generally w/o presence of threatened or endangered spp	t native spp derate to
	or deduct points for covera  Extensive >75%  Moderate 25-75%  Sparse 5-25% cc	cover (-5) % cover (-3) over (-1)	high	A predominance of native species, with nonnationand/or disturbance tolerant native spp absent absent, and high spp diversity and often, but in the presence of rare, threatened, or endanger	or virtually not always.
	Nearly absent <5 Absent (1)	Mudf	flat and	Open Water Class Quality	
	6d. Microtopography.		0	Absent <0.1ha (0.247 acres)	
	Score all present using 0 to		1	Low 0.1 to <1ha (0.247 to 2.47 acres)	
	Vegetated humm		2	Moderate 1 to <4ha (2.47 to 9.88 acres)	
	Standing dead >:		3	High 4ha (9.88 acres) or more	
	2 Amphibian breed	ing pools Micro		aphy Cover Scale	2.3
		_	1	Absent Present very small amounts or if more common of marginal quality	=
		-	2	Present in moderate amounts, but not of highes quality or in small amounts of highest quality	it
		-	3	Present in moderate or greater amounts	_

End of Quantitative Rating. Complete Categorization Worksheets.

# **ORAM Summary Worksheet**

wetland 3

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES (NO)	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES (NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO)	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1	
tuang	Metric 2. Buffers and surrounding land use	9	
	Metric 3. Hydrology	13	
	Metric 4. Habitat	13	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	9	
	TOTAL SCORE	45	Category based on scor breakpoints

Complete Wetland Categorization Worksheet.

wetland 3

## Wetland Categorization Worksheet

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

	EID	al Category	
Choose one	Category 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

# **Background Information**

Name: Aason Kwolek
Date: 11/5/20
Affiliation: Stantec
Address:
Phone Number:
e-mail address:
Name of Wetland: Wetland 4
Vegetation Communit(ies):
HGM Class(ps)
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
243
2000
La L
inetland &
2300' x 1 2300'
×1 2300
Lat/Long or UTM Coordinate 38, 440 938 , - 82, 623664  USGS Quad Name / 11 11 11 11 11 11 11 11 11 11 11 11 1
USGS Quad Name (4tletts bury
County Lawrence
Township Coal Grove
Section and Subsection SI TIN 1218W
Hydrologic Unit Code 050901030103
Site Visit 10/20/20 National Wetland Inventory Map
Ohio Wetland Inventory Map
Sail Survey
So F- Steins burg-Shelocta Association, very Sterp
See Ecological Inventory Report

Name of Wetland: wetland 4	,
Wetland Size (acres, hectares): O, O   G Sketch: Include north arrow, relationship with o	c /0.004 hg
Sketch: Include north arrow, relationship with o	other surface waters, vegetation zones, etc.
	1
	<i>'</i>
	/
str b stope	Stroum 1 12 Early Guccoss romate Alore decliduous forest
×	Early Lious to
$\rightarrow$ (	slope Early Guccess Forest
>	X361
/××09	7
14908	
1 Ast	
7	
vetland	4 5
vetland	1
omments, Narrative Discussion, Justification	of Category Changes:
inal score: 22	Category:

wetland 4

### Scoring Boundary Worksheet

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

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

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

### **Narrative Rating**

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

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

	-4	100	1	4
0	C.L	1	0	

01-		Turo	1
8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES  Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
^-		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is	YES	NO NO
	partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 90
		Go to Question 10	
9c	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth	YES Go to Question 9d	NO Go to Question 10
9d	wetlands, or those dominated by submersed aquatic vegetation.  Does the wetland have a predominance of native species within its	YES	NO
00	vegetation communities, although non-native or disturbance tolerant native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES  Wetland should be evaluated for possible Category 3 status	NO Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	Go to Question 10 YES	(NO)
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be	Wetland is a Category 3 wetland.  Go to Question 11	Go to Question 11
	present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria Myriophyllum spicatum Najas minor Phalaris arundinacea Phragmites australis Potamogeton crispus Ranunculus ficaria Rhamnus frangula Typha angustifolia Typha xglauca	Zygadenus elegans var. glaucus Cacalia plantaginea Carex flava Carex sterilis Carex stricta Deschampsia caespitosa Eleocharis rostellata Eriophorum viridicarinatum Gentianopsis spp. Lobelia kalmii Parnassia glauca Potentilla fruticosa Rhamnus alnifolia Rhynchospora capillacea Salix candida Salix myricoides Salix serissima Solidago ohioensis Tofieldia glutinosa Triglochin maritimum Triglochin palustre	Calla palustris Carex atlantica var. capillacea Carex echinata Carex oligosperma Chamaedaphne calyculata Decodon verticillatus Eriophorum virginicum Larix laricina Nemopanthus mucronatus Schechzeria palustris Sphagnum spp. Vaccinium macrocarpon Vaccinium corymbosum Vaccinium oxycoccos Woodwardia virginica Xyris difformis	Carex cryptolepis Carex lasiocarpa Carex stricta Cladium mariscoides Calamagrostis stricta Calamagrostis canadensis Quercus palustris	Calamagrostis canadensi Calamogrostis strict Carex atherode Carex buxbaum Carex pellit Carex sartwell Gentiana andrews Helianthus grosseserratu Liatris spicata Lysimachia quadriflor Lythrum alatu Pycnanthemum virginianu Silphium terebinthinaceuu Sorghastrum nutan Spartina pectinat Solidago riddell

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

0	0	Metric 1. Wetland Ar	ea (size).	
max 6 pts.	subtotal	Select one size class and assign score.		
		>50 acres (>20.2ha) (6 pts)		
		25 to <50 acres (10.1 to <20.		
		10 to <25 acres (4 to <10.1ha		
		3 to <10 acres (1.2 to <4ha) ( 0.3 to <3 acres (0.12 to <1.2h		
		0.1 to <0.3 acres (0.04 to <0.		
		<0.1 acres (0.04ha) (0 pts)		
1	1	Metric 2. Upland buf	fers and surround	ling land use.
0	6			And the second second
max 14 pts.	subtotal	2a. Calculate average buffer width. Se		
			(164ft) or more around wetland p 5m to <50m (82 to <164ft) aroun	
			10m to <25m (32ft to <82ft) arou	
			verage <10m (<32ft) around wetle	
		<ol><li>Intensity of surrounding land use.</li></ol>		
			older forest, prairie, savannah, wi	
			shrub land, young second growth dential, fenced pasture, park, con	servation tillage, new fallow field. (3)
			en pasture, row cropping, mining,	
15	10	Metric 3. Hydrology.		
16	18	,	3 /	
max 30 pts.	subtotal	3a. Sources of Water. Score all that a	ipply. 3b	. Connectivity. Score all that apply.
		High pH groundwater (5)		100 year floodplain (1)
		Other groundwater (3) Precipitation (1)		Between stream/lake and other human Part of wetland/upland (e.g. forest), con
	1	Seasonal/Intermittent surface	e water (3)	Part of riparian or upland corridor (1)
aC.	sec in	Perennial surface water (lake	e or stream) (5) 3d	. Duration inundation/saturation. Score one or
1000	600/	3c. Maximum water depth. Select only	y one and assign score.	Semi- to permanently inundated/saturat
6	. 1	>0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (	(2)	Regularly inundated/saturated (3) Seasonally inundated (2)
0		<0.4m (<15.7in) (1)	/	Seasonally saturated in upper 30cm (12
obset e		3e. Modifications to natural hydrologic	regime. Score one or double ch	eck and average.
		None or none apparent (12)		
		Recovered (7) Recovering (3)	ditch	point source (nonstormwater) filling/grading
		Recent or no recovery (1)	dike	road bed/RR track
			weir	dredging
	-	The state of the s	stormwater input	other
_	71	Metric 4. Habitat Alt	eration and Devel	opment.
7	21	A CONTRACTOR OF THE PARTY AND		
3	subtotal	4a Substrate disturbance Score one	or double check and average.	
max 20 pts.	- Subjuta	To. Cooperate distancement Cooperation		
max 20 pts.	200104	None or none apparent (4)	A Section Control of the Asset	
max 20 pts.	300000	None or none apparent (4) Recovered (3)		
max 20 pts.	300,000	None or none apparent (4)		
max 20 pts.	30000	None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only	one and assign score,	
max 20 pts.	30000	None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7)	one and assign score,	
max 20 pts.	30000	None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6)	one and assign score,	
max 20 pts.	30000	None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7)	one and assign score,	
max 20 pts.	30000	None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3)	one and assign score,	
max 20 pts.		None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2)	one and assign score,	
max 20 pts.		None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)		
max 20 pts.		None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or definition of the second content of the	ouble check and average.	
max 20 pts.		None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or development (9)	ouble check and average.  Check all disturbances observe	
max 20 pts.		None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or do None or none apparent (9) Recovered (6)	ouble check and average.  Check all disturbances observe	shrub/sapling removal
max 20 pts.		None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or development (9)	ouble check and average.  Check all disturbances observe	
max 20 pts.	2.1	None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or de Recovered (6) Recovering (3)	ouble check and average.  Check all disturbances observe mowing grazing	shrub/sapling removal herbaceous/aquatic bed removal

End of Quantitative Rating. Complete Categorization Worksheets.

3

0

2

3

Microtopography Cover Scale

Absent

Moderate 1 to <4ha (2.47 to 9.88 acres)

Present very small amounts or if more common

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

High 4ha (9.88 acres) or more

of marginal quality

and of highest quality

Vegetated hummucks/tussucks

Coarse woody debris >15cm (6in)

Standing dead >25cm (10in) dbh Amphibian breeding pools

## **ORAM Summary Worksheet**

wetland 4

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES (NO)	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES NO	If yes, Category 1.
	Question 6. Bogs	YES NO	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES (NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES (NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	6	1012
	Metric 2. Buffers and surrounding land use	6	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	1	
	TOTAL SCORE	22	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

## Wetland Categorization Worksheet

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

gory
tegory 2 Category 3
-

End of Ohio Rapid Assessment Method for Wetlands.

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

#### Instructions

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

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

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

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

## **Background Information**

Name: Ausen Kwolek	
Date: 12/17/2026	Las.
Affiliation:	100
Stuntes	
Address: 11687 Lebanen Rd Cincinnati, 04 4152	41
Phone Number: 5 13 842 8 200	
e-mail address:	
Name of Wetland: 112+1 1	
Vegetation Communit(ies):	
PEM	
HGM Class(es): Depressional	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	
Letland 5	1
Fland	1
	-
Gold A	
2	
Cold A	Mar
2 100	mey.
All the second s	stenlet
/ Lincoln Ct	stenlet
The second secon	12
Lat/Long or UTM Coordinate	
58, 798895 -82.656826	
USGS Quad Name As hland	
County Lawrence	
Township T / N	
Section and Subsection 2 18 4 5 3 0	
Hydrologic Unit Code 050901030163	
Site Visit 12/17/26	
National Wetland Inventory Map  No re	
Ohio Wetland Inventory Map	
Soil Survey	21.1
Nolin gilt loam, 0-390 slopes, occasionally	+ boded
See Ecological Inventory Report	

Name of Wetland:	Vetland 5
Wetland Size (acres	hectares): 0.02
Sketch: Include nor	th arrow, relationship with other surface waters, vegetation zones, etc.
per king lot	Maintaned Jawn  Slope  Stope
	Gold Alley
Comments, Narrative	e Discussion, Justification of Category Changes:
	9 Category:

wetland 5

#### Scoring Boundary Worksheet

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

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

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

Comments, Narrative Discussion, Justification of C	Category Changes:
G	old Alley
pastion x4p12	X5PII
perfor x4P12	xsp11
	/ 11
4	
lose.	,
	Maintened
	<b>&gt;</b>
	r surface waters, vegetation zones, etc.
Vetland Size (acres, hectares): 802	

# wetland 5

### **Narrative Rating**

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

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

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(NO)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Go to Question 9a	
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	Go to Question 10
9b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES  Wetland should be evaluated for possible Category 3 status	NO Go to Question 9c
9c	Are Lake Eric water to ple the walled the size of the lake the size of the siz	Go to Question 10	NO
50	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	NO Go to Question 10
9d	Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance	YES YES	NO
	tolerant native plant species within its vegetation communities?	Wetland should be evaluated for possible Category 3 status	Go to Question 10
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in	Go to Question 10 YES	NO
	Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this	Wetland is a Category 3 wetland.  Go to Question 11	60 to Question 11
	type of wetland and its quality.	4	
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species.

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

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

Site:	Chlin	d 5	Rater(s): ANG	Date: (2/17/20
-		Metric 1. Wetland A	rea (size)	
0	0	Wether I. Wetland	irea (Size).	
max 6 pts.	subtotal	Select one size class and assign sco		
		>50 acres (>20.2ha) (6 pts 25 to <50 acres (10.1 to <2		
		10 to <25 acres (4 to <10.1		
		3 to <10 acres (1.2 to <4ha	a) (3 pts)	
		0.3 to <3 acres (0.12 to <1		
		0.1 to <0.3 acres (0.04 to <		
6	-		iffers and surrounding	land use.
7	6	mound in opinion as	oro ana oarroananig	Tarra door
max 14 pts.	subtotal	2a. Calculate average buffer width.	Select only one and assign score. Do not	double check.
			m (164ft) or more around wetland perimet	
			25m to <50m (82 to <164ft) around wetla to <25m (32ft to <82ft) around wet	
			average <10m (<32ft) around wetland per	
			<ul> <li>Select one or double check and averag</li> </ul>	
			or older forest, prairie, savannah, wildlife ar s), shrub land, young second growth forest	
		MODERATELY HIGH, Re	sidential, fenced pasture, park, conservati	on tillage, new fallow field. (3)
	_		pen pasture, row cropping, mining, constru	ection (1)
8	10	Metric 3. Hydrology	/.	
max 30 pts.	subfotal	3a. Sources of Water. Score all that High pH groundwater (5)	t apply. 3b. Conn	ectivity. Score all that apply. 100 year floodplain (1)
		Other groundwater (3)		Between stream/lake and other human use (1)
		Precipitation (1)		Part of wetland/upland (e.g. forest), complex (
		Seasonal/Intermittent surfa Perennial surface water (la		Part of riparian or upland corridor (1) ion inundation/saturation. Score one or dbl che
		3c. Maximum water depth. Select of		Semi- to permanently inundated/saturated (4)
		>0.7 (27.6in) (3)	1/21	Regularly inundated/saturated (3)
		0.4 to 0.7m (15.7 to 27.6in	(2)	Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1)
			pic regime. Score one or double check and	
		None or none apparent (1)		
		Recovered (7) Recovering (3)	ditch	point source (nonstormwater) filling/grading
		Recent or no recovery (1)	dike	road bed/RR track
			weir	dredging
		•	stormwater input	other
2	13	Metric 4. Habitat A	Iteration and Developm	ent.
2	15			
max 20 pts.	subtotal	4a. Substrate disturbance. Score of		
		None or none apparent (4) Recovered (3)		
		Recovering (2)		
		Recent or no recovery (1)	Name and Address of the Control of t	
		4b Habitat development. Select on	ly one and assign score.	
		4b Habitat development. Select on Excellent (7) Very good (6)	y one and assign score.	
		Excellent (7) Very good (6) Good (5)	y one and assign score.	
		Excellent (7) Very good (6) Good (5) Moderately good (4)	y one and assign score.	
		Excellent (7) Very good (6) Good (5)	y one and assign score.	
		Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)		
		Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or	double check and average.	
		Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or None or none apparent (9)	double check and average.  Check all disturbances observed	Tehnih/eanling removal
		Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or None or none apparent (9) Recovered (6)	double check and average.  Check all disturbances observed mowing	shrub/sapling removal
		Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or None or none apparent (9)	double check and average.  Check all disturbances observed mowing grazing clearcutting	herbaceous/aquatic bed removal sedimentation
	12	Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or None or none apparent (9) Recovered (6) Recovering (3)	double check and average.  Check all disturbances observed mowing grazing clearcutting selective cutting	herbaceous/aquatic bed removal sedimentation dredging
Γ	13	Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or None or none apparent (9) Recovered (6) Recovering (3)	double check and average.  Check all disturbances observed mowing grazing clearcutting	herbaceous/aquatic bed removal sedimentation

Site: wet	land 5 Rate	r(s): AJ1	Date:  2/17/
o sublicital fire	Metric 5. Special Wetla	nds.	
ax 10 pts. subtot	Check all that apply and score as indicated.		
	Bog (10)		
	Fen (10) Old growth forest (10)		
	Mature forested wetland (5)		
	Lake Erie coastal/tributary wetland		
	Lake Ene coastal/tributary wetland Lake Plain Sand Prairies (Oak Op		ology (5)
	Relict Wet Prairies (10)	erinigay (10)	
	Known occurrence state/federal th		
	Significant migratory songbird/wat		
PV   F4	Category 1 Wetland See Question		
4 9	Metric 6. Plant commu	nities, int	terspersion, microtopography.
x 20 pts subto	M Ro Wetland Vacatation Communities	Venetation	Community Cours Scale
No pie posto	6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale.	vegetation	Community Cover Scale  Absent or comprises <0.1ha (0.2471 acres) contiguous area
	Aquatic bed	1	Present and either comprises small part of wetland's
	⊘ Emergent		vegetation and is of moderate quality, or comprises a
	Shrub		significant part but is of low quality
	Forest Mudflats	2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small
	Open water		part and is of high quality
	Other	3	Present and comprises significant part, or more, of wetland
	6b. horizontal (plan view) Interspersion.	_	vegetation and is of high quality
	Select only one.	Name the F	Secondarian of Venetation Quality
	High (5) Moderately high(4)	low	Description of Vegetation Quality  Low spp diversity and/or predominance of nonnative or
	Moderate (3)	1011	disturbance tolerant native species
	Moderately low (2)	mod	Native spp are dominant component of the vegetation,
	Low (1)		although nonnative and/or disturbance tolerant native spp
	None (0) 6c. Coverage of invasive plants. Refer		can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare
	to Table 1 ORAM long form for list. Add		threatened or endangered spp
	or deduct points for coverage	high	A predominance of native species, with nonnative spp
	Extensive >75% cover (-5)		and/or disturbance tolerant native spp absent or virtually
	Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,
	Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, threatened, or endangered spp
	Absent (1)	Mudflat an	d Open Water Class Quality
	6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
	Score all present using 0 to 3 scale	1:	Low 0.1 to <1ha (0.247 to 2.47 acres)
	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
	Standing dead >25cm (10in) dbh Amphibian breeding pools	Microtopo	graphy Cover Scale
	Transplantation of Georgia pools	0	Absent
		1	Present very small amounts or if more common of marginal quality
		2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
		- 3	Present in moderate or greater amounts
		-	and of highest quality

9

End of Quantitative Rating. Complete Categorization Worksheets.

## **ORAM Summary Worksheet**

wetland 5

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

Complete Wetland Categorization Worksheet.

wetland 5-

## Wetland Categorization Worksheet

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

	Category	
Choose one Gategory 1	Category 2	Category 3

End of Ohio Rapid Assessment Method for Wetlands.

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

#### Instructions

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

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

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

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

## **Background Information**

Name: Agran Kwolek	
Date:  2/17/21	
Affiliation:	10.000
Address: 11 7 7 1 1 1 1 1	
11687 Lebanon Rd, Gincinnasi OH 4	5241
513 842 8200 e-mail address: 4	4
Auron, Kwolek@Stantec, com	
Name of Wetland: wetland 6	
Vegetation Communit(les):	
HGM Class(es): Depressions	an region
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.	1-1-1
-1-1-1-1- Railread/-/-	1-1-2
Riverside Dr	1
CODNR. Boat Ramp	e driverays
	coal yard
×	coal yesd
wetland 6	coal yesd
xetland 6	coal yeard
Let/Long or LITM Coordinate	coal yesol
Lat/Long or UTM Coordinate 38. 447531 - 82, 654252	coal yesol
Lat/Long or UTM Coordinate 38. 497531, -82, 654252  USGS Quad Name A5 + 14 nd	coal yesd
LaVLong or UTM Coordinate 38.497531, -82.654252  USGS Quad Name Astaland  County Lawrence	coal yesol
LaVLong or UTM Coordinate 38.497531, -82.654252 USGS Quad Name Ashland County Lawrence Township TIN	coal yesol
Lat/Long or UTM Coordinate  38.497531, -82.654252  USGS Quad Name  Ashland  County  Lawrence  Township  TIN  Section and Subsection  R18W 530  Hydrologic Unit Code	coal yesol
Lat/Long or UTM Coordinate  38.497531, -82.654252  USGS Quad Name  Ashland  County  Lawrence  Township  TIN  Section and Subsection  R18W 530  Hydrologic Unit Code  050901030105	coal yesol
LaVLong or UTM Coordinate  38.497531, -82.654252  USGS Quad Name  Ashland  County  Lawrence  Township  TIN  Section and Subsection  R18W 530  Hydrologic Unit Code  050901030105  Site Visit  12/17/20	coal yesol
Lat/Long or UTM Coordinate  38.497531, -82.654252  USGS Quad Name  Ashland  County  Lawrence  Township  TIN  Section and Subsection  R18W 530  Hydrologic Unit Code  050901020105  Site Visit  12/17/20  National Wetland Inventory Map	coal yesol
Lat/Long or UTM Coordinate  38.497531, -82.654252  USGS Quad Name  Ashland  County Lawrence  Township TIN  Section and Subsection R18W 530  Hydrologic Unit Code  050901030105  Site Visit  12/17/20  National Wetland Inventory Map  None  Ohio Wetland Inventory Map	coal yesol
Lat/Long or UTM Coordinate  38.497531, -82.654252  USGS Quad Name  Ashland  County  Lawrence  Township  TIN  Section and Subsection  R18W 530  Hydrologic Unit Code  050901020105  Site Visit  12/17/20  National Wetland Inventory Map  Other Wolferd Inventory Map	coal yesol

etland Size (acres, hectares): 0.164c  etch: Include north arrow, relationship with other surface waters,	vegetation zones, etc.
Drivevay	Control Control of Carlo
Lawn	2
repland 6	Culture
omments, Narrative Discussion, Justification of Category Changes	

### Scoring Boundary Worksheet wetland

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

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

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

### Narrative Rating

wetland b

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of	YES (	NO)
	a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	Wetland should be evaluated for possible Category 3 status -Go to Question 2	Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain	YES /	NO
	an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	Wetland is a Category 3 wetland.	Go to Question 3
		Go to Question 3	0
3	Documented High Quality Wetland. Is the wetland on record in	YES	NO/
	Natural Heritage Database as a high quality wetland?	Wetland is a Category 3 wetland	Go to Question 4
		Go to Question 4	0
4	Significant Breeding or Concentration Area. Does the wetland	YES	NO )
	contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	Wetland is a Category 3 wetland	Go to Question 5
		Go to Question 5	
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES  Wetland is a Category 1 wetland Go to Question 6	Go to Question 6
5	Bogs. Is the wetland a peat-accumulating wetland that 1) has no	YES	NO \
	significant inflows or outflows, 2) supports acidophilic mosses, particularly Sphagnum spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	Wetland is a Category 3 wetland	Go to Question 7
_		Go to Question 7	
7.	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland	Go to Question 8a
_	FOLIC Al-F	Go to Question 8a	
la	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species), little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps, and significant numbers	YES  Wetland is a Category 3 wetland.  Go to Question 8b	Go to Question 8b

wetland 6

8b	Mature forested wetlands. Is the wetland a forested wetland with	YES	(0)
	50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17,7in) dbh?	Wetland should be evaluated for possible Category 3 status.	Go to Question 9a
		Go to Question 9a	h
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this	YES	Nø
9b	elevation, or along a tributary to Lake Erie that is accessible to fish?  Does the wetland's hydrology result from measures designed to	Go to Question 9b YES	Go to Question 10
30	prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	Wetland should be evaluated for possible Category 3 status	Go to Question 90
		Go to Question 10	
9с	Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an	YES Go to Question 9d	NO Go to Question 10
	"estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	oo to decision ou	
9d	Does the wetland have a predominance of native species within its	YES	NO
	vegetation communities, although non-native or disturbance tolerant native species can also be present?	Wetland is a Category 3 wetland	Go to Question 9e
		Go to Question 10	1
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES  Wetland should be evaluated for possible Category 3 status	NO Go to Question 10
		Go to Question 10	
10	Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be	YES  Wetland is a Category 3 wetland.  Go to Question 11	Go to Question 11
	present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.		0
11	Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES  Wetland should be evaluated for possible Category 3 status  Complete Quantitative Rating	Complete Quantitative Rating

Table 1. Characteristic plant species

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	Zygadenus elegans var. glaucus	Calla palustris	Carex cryptolepis	Calamagrostis canadensis
Myriophyllum spicatum	Cacalia plantaginea	Carex atlantica var. capillacea	Carex lasiocarpa	Calamograstis stricta
Najas minor	Carex flava	Carex echinata	Carex stricta	Carex atherode
Phalaris arundinacea	Carex sterilis	Carex oligosperma	Cladium mariscoides	Carex buxbaumi
Phragmites australis	Carex stricta	Carex trisperma	Calamagrostis stricta	Carex pellite
Potamogeton crispus	Deschampsia caespitosa	Chamaedaphne calyculata	Calamagrostis canadensis	Carex sartwelli
Ranunculus ficaria	Eleocharis rostellata	Decodon verticillatus	Quercus palustris	Gentiana andrews
Rhamnus frangula	Eriophorum viridicarinatum	Eriophorum virginicum	THE RESIDENCE OF BUILDING	Helianthus grosseserratu
Typha angustifolia	Gentianopsis spp.	Larix laricina		Liatris spicat
Typha xglauca	Lobelia kalmii	Nemopanthus mucronatus		Lysimachia quadriflor
	Parnassia glauca	Schechzeria palustris		Lythrum alatu
	Potentilla fruticosa	Sphagnum spp.		Pycnanthemum virginianui
	Rhamnus alnifolia	Vaccinium macrocarpon		Silphium terebinthinaceur
	Rhynchospora capillacea	Vaccinium corymbosum		Sorghastrum nutan
	Salix candida	Vaccinium oxycoccos		Spartina pectinate
	Salix myricoides	Woodwardia virginica		Solidago riddell
	Salix serissima	Xyris difformis		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Site: wrt	lend b	Rater(s): A5k	Date:  2/17/2
	Metric 1. Wetland	Aroa (sizo)	
1 1	wetric 1. Wetland	Area (Size).	
max 6 pts. subtotal	Select one size class and assign so >50 acres (>20.2ha) (6 p 25 to <50 acres (10.1 to 10 to <25 acres (4 to <10 3 to <10 acres (1.2 to <4 0.3 to <3 acres (0.12 to <0.13 acres (0.04 to <0.1 acres (0.04ha) (0 pt	ts) <20.2ha) (5 pts) .1ha) (4 pts) ha) (3 pts) -1.2ha) (2pts) <0.12ha) (1 pt)	
1 2		uffers and surround	ling land use.
ax 14 pts. subtota			
as 14 pa. 30000	WIDE. Buffers average MEDIUM. Buffers average NARROW. Buffers avera NARROW. Buffers avera VERY NARROW. Buffer 2b. Intensity of surrounding land VERY LOW. 2nd growth LOW. Old field (>10 yea MODERATELY HIGH. F	Select only one and assign score. 50m (164ft) or more around wetland ge 25m to <50m (82 to <164ft) around age 10m to <25m (32ft to <82ft) around severage <10m (<32ft) around wetlase. Select one or double check and or older forest, prairie, savannah, wirs), shrub land, young second growth Residential, fenced pasture, park, con	perimeter (7) d wetland perimeter (4) und wetland perimeter (1) and perimeter (0) average. Idlife area, etc. (7) forest. (5) servation tillage, new fallow field. (3)
		open pasture, row cropping, mining,	construction. (1)
7 9	Metric 3. Hydrolog	Jy.	
nax 30 pts. subtotu	High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/intermittent su Perennial surface water 3c. Maximum water depth. Select >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (1) <0.4m (<15.7in) (1)	rface water (3) (lake or stream) (5) 3d only one and assign score.	Duration inundation/saturated (3) Seasonally saturated in upper 30cm (12in) (1) eck and average.
	None or none apparent ( Recovered (7) Recovering (3) Recent or no recovery (1)	ditch tile	goint source (nonstormwater) filling/grading road bed/RR track dredging other
2 .	Metric 4 Habitat	Alteration and Devel	onment
S   Z	-	one or double check and average. 4)	
	Fair (3) Poor to fair (2) Poor (1)		
	Poor (1) 4c. Habitat alteration. Score one (	The same of the sa	
IZ	Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one (1) Recovered (6) Recovered (6) Recovering (3) Recent or no recovery (1)	9) Check all disturbances observe mowing grazing	d shrub/sapling removal herbaceous/aquatic bed removal sedimentation dredging farming nutrient enrichment

site: votland b	Rater(s): AJ	Date: 12/17/
Metric 5. Special We subtotal first page  Check all that apply and score as indicated by the subtotal check all that apply and	retland-unrestricted hydrolak Openings) (10)	ology (5)
Known occurrence state/fed Significant migratory songbir	eral threatened or end	angered species (10)
Category 1 Wetland. See Q	rd/water fowl nabitation	usage (10)
1 13 Metric o. Flant com	municles, inc	erspersion, microtopography.
x 20 pts. subtotal 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale
Score all present using 0 to 3 scale	0	Absent or comprises <0.1ha (0.2471 acres) contiguous are
Aquatic bed	1	Present and either comprises small part of wetland's
Emergent		vegetation and is of moderate quality, or comprises a
Shrub	_	significant part but is of low quality
Forest Mudflats	2	Present and either comprises significant part of wetland's
Open water		vegetation and is of moderate quality or comprises a small
Other	3	Present and comprises significant part, or more, of wetland
6b. horizontal (plan view) Interspersion		vegetation and is of high quality
Select only one.	7.0	- Samuel and a string of quanty
High (5)	Narrative D	escription of Vegetation Quality
Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
Moderate (3)	-	disturbance tolerant native species
Moderately low (2) Low (1)	mod	Native spp are dominant component of the vegetation,
None (0)		although nonnative and/or disturbance tolerant native spi can also be present, and species diversity moderate to
6c. Coverage of invasive plants. Refe	er	moderately high, but generally w/o presence of rare
to Table 1 ORAM long form for list. Ad	dd	threatened or endangered spp
or deduct points for coverage	high	A predominance of native species, with nonnative spp.
Extensive >75% cover (-5)		and/or disturbance tolerant native spp absent or virtually
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1)	)	absent, and high spp diversity and often, but not always,
Nearly absent <5% cover (0		the presence of rare, threatened, or endangered spp
Absent (1)		d Open Water Class Quality
6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
Vegetated hummucks/tussu		Moderate 1 to <4ha (2.47 to 9.88 acres)
Coarse woody debris >15cm		High 4ha (9.88 acres) or more
Standing dead >25cm (10in	A COLUMN TO THE PARTY OF THE PA	
Amphibian breeding pools		graphy Cover Scale
	0	Absent
		Present very small amounts or if more common of marginal quality
	2	Present in moderate amounts, but not of highest
		quality or in small amounts of highest quality
	3	Present in moderate or greater amounts
		and of highest quality

13

End of Quantitative Rating. Complete Categorization Worksheets.

## **ORAM Summary Worksheet**

wetland b

		circle answer or insert score	Result
Question 2. Threa Species Question 3. High Question 4. Signii Question 5. Cate Question 6. Bogs Question 7. Fens Question 8a. Old Question 8b. Ma Question 9b. Lak Restricted Question 9d. Lak Unrestricted with Question 9e. Lak Unrestricted with Question 9e. Lak Unrestricted with	Question 1 Critical Habitat	YES NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES (NO)	If yes, Category 1.
	Question 6. Bogs	YES (NO)	If yes, Category 3.
	Question 7. Fens	YES NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES (NO)	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES (NO)	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES (NO)	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES NO	If yes, evaluate for Category 3; may also be 1 or 2.
Metric 2.  Metric 3.  Metric 4.  Metric 5.  Metric 6.  microtop	Metric 1. Size	1	
	Metric 2. Buffers and surrounding land use		
	Metric 3. Hydrology	7	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography		
	TOTAL SCORE	13	Category based on score breakpoints

Complete Wetland Categorization Worksheet.

### Wetland Categorization Worksheet Wetla

wetland	6

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions:  Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES  Wetland is categorized as a Category 3 wetland	NO)	Is quantitative rating score less than the Category 2 scoring threshold (excluding gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been overcategorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES  Wetland should be evaluated for possible Category 3 status	00	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	Wetland is categorized as a Gategory 1 wetland	NO)	Is quantitative rating score greater than the Category 2 scoring threshold (including any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	Wetfand is assigned to the appropriate category based on the scoring range	00	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	VES  Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO	Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES  Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Choose one	Category 1	Category 2	Category 3
------------	------------	------------	------------

End of Ohio Rapid Assessment Method for Wetlands.

#### D.3 HHEI AND QHEI DATA FORMS

### **OhioEPA**

# Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:	40
TANDERSON OF THE PARTY OF THE P	

Stream & Location	10101		Id Project RN	: Date:	01191962
/ / /	platente Extension 13	Scorers Full Nar	1		ntre
River Code: -	- STORET#:	_Scorers Full Nat Lat./ Lo		182.6562	Office verified location
BEST TYPES BLDR /SLABS [10] BOULDER [9] COBBLE [8] GRAVEL [7] BEDROCK [5] NUMBER OF BEST T	ONLY Two substrate TYPE BOX ate % or note every type present POOL RIFFLE OTHER TYPE BOX OTHER TYPE BOX OTHER TYPE BOX OTHER TYPE SILT [2] SILT [2] SILT [2] SILT [2] Soore national strength of the strength o	PES POOL RIFFLE N [4] S [3] AL [0] AL [0] Betural substrates; ignore ge from point-sources) Desent; 1-Very small amount but not of highest quality e.g., very large boulders of fast water, or deep, we see 70cm [2]	ORIGIN  LIMESTONE [1]  TILLS [1]  WETLANDS [0]  SANDSTONE [0]  SANDSTONE [0]  LACUSTURINE [0]  SHALE [-1]  COAL FINES [-2]  Ints or if more common of recommon of	Check ONE (Cost.   EXTENSIVE	-2] ATE [-1] Substrate - [0] ATE [-1] Maximum - [0] 20  UNT 0: 2 & average) ->75% [11] - 25-75% [7]
OVERHANGING VE	The state of the s		UATIC MACROPHYTES   GS OR WOODY DEBRIS	[1] NEARLY AB	SENT <5% [1]  Cover Maximum 20
SINUOSITY DEV  HIGH [4]  MODERATE [3]  LOW [2]	XCELLENT [7] NONE [6] OOD [5] RECOVER	NELIZATION RED [4]	STABILITY  HIGH [3]  MODERATE [2]  LOW [1]		Channel Maximum 20
River right looking downstrea  EROSION  NONE / LITTLE [3]  MODERATE [2]	MD RIPARIAN ZONE Che RIPARIAN WIDTH RIPARIAN WIDTH MODERATE 10-50m [3] NARROW 5-10m [2] VERY NARROW < 5m	FLOOI FOREST, SW.	D PLAIN QUALITY  AMP [3]  DLD FIELD [2]  PARK, NEW FIELD [1]  TURE [1]	CONSERVATION URBAN OB INI MINING / CONSI	DUSTRIAL [0]
MAXIMUM DEPTH Check ONE (ONLY!) > 1m [6] 0.7-<1m [4]	O RIFFLE / RUN QUALIT CHANNEL WIDTH Check ONE (Or 2 & avera □ POOL WIDTH > RIFFLE WID □ POOL WIDTH = RIFFLE WID □ POOL WIDTH > RIFFLE WID	TH [0] FAST [1]	ENT VELOCITY  ck ALL that apply  L [-1]  SLOW [1]  [1]  INTERSTITIAL  INTERMITTENT  [1]  EDDIES [1]  reach - pools and niffes.	[-2]	Contact y Contact
Indicate for function of riffle-obligate seriffle-obligate seriffle DEPTH BESTAREAS > 10cm [2] BESTAREAS < 5cm [metric=0]	RUN DEPTH   MAXIMUM > 50cm [2]     MAXIMUM < 50cm [1]	RIFFLE / RUN SUE STABLE (e.g., Cobble,	ge). BSTRATE RIFFLE Boulder) [2] arge Gravel) [1]	Pulation  / RUN EMBEDDE    NONE [2]    LOW [1]    MODERATE [0]    EXTENSIVE [-1]	Riffle /
6] GRADIENT (Z.Y. DRAINAGE AREA	ft/mi)			FFLE:	Gradient O

A] SAMPLL REACH Check ALL that apply METHOD STAGE BOAT 1st-sample pass-2nd WADE HIGH D L. LINE UP	Survey area Win Impounde	surrounded by	Cogl storag	er/Sampling observations, Concerns, Ac er fields	cess direct etc.
OTHER NORMAL		a cogeo	-DE9 +01	Je Frottic	
DISTANCE DRY					
OTHER 20-<40 cm [	INVISANCE ALGAE   INVASIVE MACROPHYTES   EXCESS TURBIDITY   DISCOLORATION   FOAM / SCUM   OIL SHEEN   TRASH / LITTER   NUISANCE ODOR   SLUDGE DEPOSITS   CSOs/SSOs/OUTFALLS	DJ MAINTENANCE PUBLIC / PRIVATE BOTH INA ACTIVE / HISTORIC BOTH INA ACTIVE / HISTORIC BOTH INA YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED MODIFIED / DIPPED OUT / NA LEVEED / ONE SIDED RELOCATED / CUTOFFS MOVING-BEDLOAD-STABLE ARMOURED / SLUMPS ISLANDS / SCOURED MPOUNDED DESICCATED FLOOD CONTROL / DRAINAGE	Circle some & COMMENT	E] ISSUES  WWTP / CSO / NPDES INDUSTRY HARDENED / URBAN / DIRT&GRIME CONTAMINATED / LANDFILL BMPs-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H <sub>2</sub> 0 / TILE / H <sub>2</sub> 0 TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY	F] MEASUREMENTS  x̄ width x̄ depth max. depth x̄ bankfull width bankfull x̄ depth W/D ratio bankfull max. depth floodprone x² width entrench. ratio Legacy Tree:
Stream Drawing:	. 000: [2. 10011-[2.51]	- TOO SOMMOL / DIVANAGE		ATMOSPHERE / DATA PAUCITY	
coallstatorage or	eon	Hood	centucky	Ak steel	
Heary	Losion			Heavy Erosia	
141 111 1	,			197209 218378	
Don		Susuel	Oh	stream (	
-		1 areq		Street	
	1	T Erosion			
	1700		22/		
1000	100,000	201	0000 000	ou o o o	<b>D</b>
	1 109	Conscete soil	Damp		1
	overhanging yeg	Congocalson	04	10	18-01
	Sed	1 1	1		Bost
			1		

### **OhioEPA**

## Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:	45
QHEI Score.	

Stream & Location: Be	llefonte Extension	120 Fillian D	ebuild Project	RM: Date	: 1011913620
Stream Z Ic	e Creek	Scorers Full N	ame & Affiliation:		mtec
River Code: -	- STORET #:	Lat./	Long.: 3 8. 499	7 187.6539	Office verified location
	% or note every type present OL RIFFLE OTHER TY OTHER	PES POOL RIFFLE [4] [5 [3] [5	Check ON ORIGIN LIMESTONE [1] TILLS [1] WETLANDS [0] HARDPAN [0] SANDSTONE [0] RIP/RAP [0] LACUSTURINE [0] SHALE [-1] COAL FINES [-2]	E (Or 2 & average) QU HEAV SILT   MODE FREE FREE MODE NORM	ALITY Y[-2] RATE [-1] Substrate IAL [0] III NSIVE [-2] RATE [-1] AL [0] [1]
quality; 3-Highest quality in m	quality; 2-Moderate amounts, boderate or greater amounts (e) all developed rootwad in deep POOLS TATION [1] POOLS	out not of highest qual b.g., very large boulder fast water, or deep, v > 70cm [2] O	ity or in small amounts of	highest check ONE colors. Check ONE EXTENSI  [5 [1] MODERA  S [1] SPARSE	(Or 2 & average) VE >75% [11] TE 25-75% [7] 5-<25% [3] ABSENT <5% [1]  Cover Maximum 20
	COPMENT CHANNI ELLENT [7] NONE [6] DD [5] RECOVER R[3] RECOVER	ELIZATION ED [4]	STABILITY  HIGH [3] MODERATE [2]  LOW [1]		Channel Maximum 20
MODERATE [2]	RIPARIAN WIDTH  WIDE > 50m [4]  MODERATE 10-50m [3]  NARROW 5-10m [2]	FLOO FOREST, SV SHRUB OR RESIDENTIA FENCED PA	OD PLAIN QUALITY VAMP [3] OLD FIELD [2] NL, PARK, NEW FIELD [1]	CONSERVAT	NSTRUCTION [0]
□ 0.7-<1m [4]	RIFFLE / RUN QUALITY CHANNEL WIDTH Check ONE (Or 2 & average) POOL WIDTH > RIFFLE WIDTH POOL WIDTH = RIFFLE WIDTH POOL WIDTH > RIFFLE WIDTH	CURI  (H [2]  TORRENTI  H [1]  VERY FAS  H [0]  FAST [1]	INTERMITTE	Primar Seconda (circle one and	on Potential by Contact ary Contact comment on back)  Pool / Current Maximum 12
of riffle-obligate spe RIFFLE DEPTH ☐ BESTAREAS > 10cm [2]	RUN DEPTH   F   MAXIMUM > 50cm [2]   S   MAXIMUM < 50cm [1]   N	eck ONE ( <i>Or 2 &amp; avei</i> RIFFLE / RUN SU STABLE (e.g., Cobble	rage). IBSTRATE RIFFLI a, Boulder) [2] Large Gravel) [1]	E / RUN EMBEDI	D RIFFLE [metric=0] DEDNESS
DRAINAGE AREA	mi) VERY LOW - LOW [2] MODERATE [6-to]. A HIGH - VERY HIGH.			GLIDE:	Gradient 10



Field Methods for Evaluating Primary Headwater Streams in Ohio Ohio EPA, Division of Surface Water

Transconducts Co. 17 Co.	HHEI Score (sum of metrics 1+2+3)	-
ENGTH OF STREAM REACH (#) 200 L	AT 38. 499117 LONG -82. 648504 RIVER MILE	
	COMMENTS	70.10
THE RESIDENCE OF THE PERSON NAMED IN COLUMN 2 IS NOT THE OWNER, THE PERSON NAMED IN COLUMN 2 IS NOT THE OWNER.	Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	
REAM CHANNEL MODIFICATIONS:	NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR N	O RECO
FURETRATE AT A		-
(Max of 32). Add total number of significa	ry type present). Check ONLY two predominant substrate TYPE boxes. Int substrate types found (Max o18). Final metric score is sum of boxes A & B  CENT TYPE  SILT [3 pt]  LEAF PACKWOODY DEBRIS [3 pts]	HHE Meti Poin
BEDROCK [16 pts]	FINE DETRITUS [3 pts]	Subst Max =
COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts]	CLAY or HARDPAN [0 pt]	
SAND (<2 mm) [6 pts]	ARTIFICIAL [3pts]	15
Total of Percentages of		
Bidr Slabs, Boulder, Cobble, Bedrock CORE OF TWO MOST PREDOMINATE SUBSTI	RATE TYPES: 7 TOTAL NUMBER OF SUBSTRATE TYPES: 6	A + E
time of evaluation. Avoid plunge pools fro	mroad culverts or storm water pipes) (Check ONLY one box):	Pool De Max =
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	5 cm - 10 cm [15 pts] < 5 cm [5pts]	20
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [Opts]	43
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 17	
BANK FULL WIDTH (Measuredas the	average of 3 - 4 measurements) (Check ONLY one box):	Bankf
> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts]	> 1.0 m -1.5 m (> 3' 3" -4" 8")[15 pts]	Widt
> 1.5 m - 3.0 m (> 4'8" - 9'7")[20 pts]		Max=
	2.1	20
COMMENTS	AVERAGE BANKFULL WIDTH (meters)	-
PIPAPIAN ZONE AND EL CORPI	This information <u>mustalso</u> becompleted  AIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream.	
RIPARIAN WIDTH	FLOODPLAIN QUALITY (Most Predominant per Bank)	
	L R L R	
□ Wide >10m	Mature Forest, Wetland Conservation Tillage	
Moderate 5-10m	Immature Forest, Shrub or Old Field Urban or Industrial	101
Narrow <5m	Residential, Park, New Field Open Pasture, Row Crop	0
COMMENTS	Fenced Pasture Mining or Construction	
FLOW REGIME (At Time of Evalue	ition) (Check ON Yone box):	
Stream Flowing Subsurface flow with isolated pools	Moist Channel, isolated pools, no flow (intermittent	1)
COMMENTS TAT CO		
COMMENTO	61 m (200 ft) of channel) (Check ONLY one box):	
SINUOSITY (Number of bends per	61 m (200 ft) of channel) (Check ONLY one box)  0	

QHEI PERFORMED? Yes No QHEI Score	(II Yes, Allacit Competed and Torrity	
DOWNSTREAM DESIGNATED USE(S)		
WWH Name: Ice Creek	Distance from Evaluated Stream  Distance from Evaluated Stream	
CWH Name:	Distance from Evaluated Stream	
	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.	
A 1 1	NRCS Soil Map Page:NRCS Soil Map Stream Order:	
county: Lawrence To		
County: Dawlence	ownship/City:	
MISCELLANEOUS	10/20/10	
Base Flow Conditions? (Y/N) Date of last precipitatio	on: 10/20/15 Quantity: 0/15	
Photo-documentation Notes:		
Elevated Turbidity?(Y/N): Canopy (% open)	50	
Were samples collected for water chemistry? (Y/N):		
	pH (S.U.) 7 · Z Conductivity (umhos/cm)	
	If not, explain:	
is the sampling reach representative of the stream (1714)	II not, explain.	
Additional comments/description of pollution impacts:		6
	ANALY ATOMA	
	OBSERVATIONS bservations below)	
(Record all ob	bservations below)	
Fish Observed? (Y/N) Species observed (if known);	bservations below)	
Fish Observed? (Y/N) Species observed (if known);  Frogs or Tadpoles Observed? (Y/N) Species observe	d (if known):	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known);	d (if known):	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Species	observations below)  id (if known):  nown): observed (if known): 5 kQCC	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known);	observations below)  id (if known):  nown): observed (if known): 5 k . pre c	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:	observed (if known):observed (if known):	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP	observations below)  Ind (if known):  Ind (if known):  Observed (if known):  OF STREAM REACH (This must be completed)	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP	observations below)  Ind (if known):  Observed (if known):  OTION OF STREAM REACH (This must be completed)  Deterest for site evaluation and a narrative description of the stream's location	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP Include important landmarks and other features of int	enown):  Description of STREAM REACH (This must be completed)  Description of the stream's location  A Slafe L	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP Include important landmarks and other features of int	enown):	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP Include important landmarks and other features of int	enown):	
Fish Observed? (Y/N) Species observed (if known): Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP Include important landmarks and other features of int	PTION OF STREAM REACH (This must be completed)  terest for site evaluation and a narrative description of the stream's location    Derm   Lead   Lead	
Fish Observed? (Y/N) Species observed (if known): Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP Include important landmarks and other features of int	PTION OF STREAM REACH (This must be completed)  terest for site evaluation and a narrative description of the stream's location    Derm   Lead   Lead	
Fish Observed? (Y/N) Species observed (if known); Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP Include important landmarks and other features of int	enown):	
Fish Observed? (Y/N) Species observed (if known): Frogs or Tadpoles Observed? (Y/N) Species observed Salamanders Observed? (Y/N) Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Species Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP Include important landmarks and other features of int	DTION OF STREAM REACH (This must be completed)  terest for site evaluation and a narrative description of the stream's location    Description   Description	
Fish Observed? (Y/N) Species observed (if known);  Frogs or Tadpoles Observed? (Y/N) Species observed  Salamanders Observed? (Y/N) Species observed (if known);  Aquatic Macroinvertebrates Observed? (Y/N) Species  Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIP  Include important landmarks and other features of int	PTION OF STREAM REACH (This must be completed)  terest for site evaluation and a narrative description of the stream's location    Derm   Lead   Lead	

	RIVER CODE DRAINAGE AREA (mr) C
Name of the Party of the last	o "Field Evaluation Manual for Ohio's PHWH Streams" for In
STOPAN CHANGE MODERNAM /	NATURAL CHANNEL RECOVERED RECOVERING RECENT OR I
1. SUBSTRATE (Estimate percent of every type (Max of 32). Add total number of significant substrate (Max of 32). Add tota	present). Check ONLY (wo predominant substrate TYPE boxes.  Itrate types found (Max of 8). Final metric score is sum of boxes A & B  TYPE  SILT [3pt]  LEAF PACK/WOODY DEBRIS [3pts]  FINE DETRITUS [3pts]  CLAY OR HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3pts]  (A)  [B]  (B)  TYPES:
2. Maximum Pool Depth (Measure the maximum	n pool depth within the 61 meter (200 feet) evaluation reach at the culverts or storm water pipes) (Check ONLY one box):  5 cm - 10 cm [15 pts]  < 5 cm [5pts]  NO WATER OR MOIST CHANNEL [0pts]
COMMENTS	MAXIMUM POOL DEPTH (centimeters): 2
3. BANK FULL WIDTH (Measuredas the average > 4.0 meters (> 13) [30 pts] > 3.0 m - 4.0 m (> 9' 7"- 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	e of 3 - 4 measurements  (Check ONLY one box):
COMMENTS	AVERAGE BANKFULL WIDTH (meters) 3,4
This	s information must also be completed
S   RIPARIAN WIDTH   L R   (Per Bank)   L R     Wide > 10m   D     Moderate 5-10m   D	WALITY * NOTE: River Left (L) and Right (R) as looking downstream*  FLOODPLAIN QUALITY (Most Predominant per Bank)  L R  Mature Forest, Wetland Conservation Tillage
Narrow <5m	Mature Forest Wetland Conservation Tillage Infinature Forest Shrub or Old Field Urban or Industrial Urban or Industrial Urban or Industrial Open Pasture, Row Cr Fenced Pasture Mining or Construction
FLOW REGIME (At Time of Evaluation)  Stream Flowing Subsurface flow with isolated pools (inters	Moist Channel, isolated pools, no flow (intermitted
oommerro	(200 ft) of channel) (Check ONLY one box):

QHEI PERFORMED? Yes No QHEI Score	(If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)	
TWWH Name: Ice Greek	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE EN	TIRE WATER SHED AREA. CLEARLY MARK THE SITE LOCATION.
SGS Quadrangle Name: Ash lan NRC	S Soil Map Page:NRCS Soil Map Stream Order:
	shipicity. Cool Grove
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation: _	10/20/20 Quantity: 0.15
Photo-documentation Notes:	
Elevated Turbidity?(Y/N): Canopy (% open):	
Were samples collected for water chemistry? (Y/N):	Lab Sample # or ID (attach results):
Field Measures:Temp (*C) 18 Dissolved Oxygen (mg/l)	pH (S.U.) 8 / Conductivity (umhos/cm)
s the sampling reach representative of the stream (Y/N)	
The state of the stream (TM)	not, explair.
BIOLOGICAL OBS	
(Record all observ	
Fish Observed? (Y/N) Species observed (if known):	
Frogs or Tadpoles Observed? (Y/N) _/ Species observed (if	
	/n);
Aquatic Macroinvertebrates Observed? (Y/N) Y Species obs	erved (if known):
comments Regarding Biology. Caddes Cly , Cra	+ Sish
	ON OF STREAM DEACH (This must be
DRAWING AND NARRATIVE DESCRIPTION	
	t for site evaluation and a narrative description of the stream's location
Include important landmarks and other features of interest	

1KMD505

Field Methods for Evaluating Primary Headwater Streams in Ohio Ohio EPA, Division of Surface Water

LENGTH OF STREAM	N Belefante E.  CONSTRIVER BASIN  REACH (M) 200 LA  OSCORER ASK	0 h 10 at 38, 49525 comments	RIVER CODE	63 4 6 78	GE AREA (MF) RIVER MILE
	Items On This Form - R MODIFICATIONS: □ N				
Max of 32) / TYPE  BLDR SL BOULDES  BEDROCS  COBBLE GRAVEL SAND (<  Total off Bidr Slabs, Bo	(Estimate percent of ever Add total number of significan PERC ABS [16 pts] (2.256 mm) [16 pts] (65-256 mm) [12 pts] (2.64 mm) [9 pts] (2.64 mm) [9 pts] (2.64 mm) [6 pts] (2.64 mm) [6 pts] (3.65 mm) [6 pts] (3.6	th substrate types for ENT TYPE	Ck ONL Y two predomind (Max of 8). Final mind	/ DEBRIS [3 pts pts] [0 pt]	PERCENT 16 16 10 (B)
- Maniensen C	cool Depth (Measure the ma lation. Avoid plunge pools fro lers [20 pts] in [30 pts]	wimum pool depthy	orm water pipes) (() 5 cm - 10 cm [15] < 5 cm [5pts] NO WATER OR MO	200 feet) evaluati Check ONLY one ots]	on reach at the box):
> 4.0 meters > 3.0 m - 4.0 > 1.5 m - 3.0	WIDTH (Measured as the: (>13') [30 pts] m (> 9' 7'-13') [25 pts] m (> 4'8" - 9' 7") [20 pts]	average of 3 - 4 mea	surements) (Chec > 1.0 m - 1.5 m (> 1.0 m (≤ 3° 3°) [5	k ONLYone box 3' 3" - 4" 8") [15 p pts]	timeters): 16
COMMENT		This information	mustalso be compl	eted	
7 - 1 25 N	RIAN ZONE AND FLOODPL  ARIAN WIDTH (Per Bank)  ide >10m oderate 5-10m arrow <5m one  MENTS	L R Mature-For	N QUALITY (Most Property Wetland orest, Shrub or Old Fin Park, New Field	L R Co	
FLO Streat Subs	W REGIME (At Time of Evalue of Five Improvement of Evalue) We have a support of Land of Evalue of Land of Evalue of	s (interstitial) or 61 m (200 ft) of chi	Moist Chan Dry channe	l, no water (eph	
None 0.5	RADIENT ESTIMATE	1.0	2.0		3.0

### ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): QHEI PERFORMED? | Yes | No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI form) DOWNSTREAM DESIGNATED USE(S) Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream ☐ EWH Name: Distance from Evaluated Stream MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION. MISCELLANEOUS Base Flow Conditions? (Y/N): NO Date of last precipitation: 10/20/20 Quantity: 0.15" Photo-documentation Notes: Elevated Turbidity?(Y/N): \_\_\_\_\_ Canopy (% open): \_\_\_\_60 Were samples collected for water chemistry? (Y/N): \_\_\_\_\_\_ Lab Sample # or ID (attach results): \_\_\_\_\_ Field Measures:Temp (\*C) 17 Dissolved Oxygen (mg/l) \_\_\_\_ pH (S.U.) 7, 7 Conductivity (umhos/cm) is the sampling reach representative of the stream (Y/N) \_\_\_\_\_ If not, explain: Additional comments/description of pollution impacts: Sedementer 1 ion **BIOLOGICAL OBSERVATIONS** Fish Observed? (Y/N) \_\_\_\_\_ Species observed (if known):\_\_\_\_\_ Frogs or Tadpoles Observed? (Y/N) \_\_\_\_ Species observed (if known):\_\_\_\_\_ Salamanders Observed? (Y/N) \_ / Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Scud Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location Early have stiered Page 2

NO.	ENGTH OF STREAM REACH (ft) 60 LAT 38. 445 21 LONG -82.63580 RIVER MILE ATE 10/20/20 SCORER AS COMMENTS  OTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction	
1.	BLDR SLABS [16 pts] SLT [3 pt] FOI  BOULDER (>256 mm) [16 pts] SLT [3 pts] Subs	IEI tric
sc	COBBLE (65-256 mm) [12 pts] CLAY or HARDPAN [6 pt]  GRAVEL (2-64 mm) [9 pts] MUCK [6 pts]  SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]  Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock  CORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  TOTAL NUMBER OF SUBSTRATE TYPES:	
2		Depth = 30
3	BANK FULL WIDTH (Measuredas the average of 3 - 4 measurements) (Check ONLY one box):	
8' NO.5		
	FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing	

DOWNSTREAM DESIGNATED	030(3)	Distance from Evaluated Stream
CWH Name:		Distance from Evaluated Stream
EWH Name:		Distance from Evaluated Stream
		ED AREA. CLEARLY MARK THE SITE LOCATION.
SGS Quadrangle Name: As ha	NRCS Soil Map Pa	ge: NRCS Soil Map Stream Order:
		oal Grove
MISCELLANEOUS		
ase Flow Conditions? (Y/N)	Date of last precipitation: 10/20/20	Quantity:
hoto-documentation Notes:		4
levated Turbidity?(Y/N):	Canopy (% open):	
		r D (attach results):
_		U.) 8.1 Conductivity (umhos/cm)
	V	
The Campany reactifier eschalive of the	at second ( rint) II not, explain;	
Additional comments/description of pollut	ion impacts:	
The state of point of points		
	BIOLOGICAL OBSERVATIONS	
ish Observed? (VM) > Species	(Record all observations below) observed (if known):	
	Species observed (if known):	
A.J	pecies observed (if known);	
The state of the s		scud
citizen in the second provided in the second		
DRAWING AND MADE	ATINE DECEDIDITION OF STREET	AN DEACH (This )
		AM REACH (This <u>must</u> be completed) in and a narrative description of the stream's location
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emy		COANIE
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toper 2018 Revision	Page 2	

AKMOSOT

Field Methods for Evaluating Primary Headwater Streams in Ohio Ohio EPA, Division of Surface Water

Primary I	Headwater Habitat Field Evaluation Form HHEI Score (sum of metrics 1+2+3)
DATE 10/20/20 SCORER ASK	N 05/6 RIVER CODE DRAINAGE AREA (MF) < 1 m.; 2  LAT 38. 496 22.7 LONG 82.638336 RIVER MILE  COMMENTS
	m - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction  NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING
1. SUBSTRATE (Estimate percent of (Max of 32). Add total number of significant of the control of	FINE DETRITUS (3 pts)  CLAY OF HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3 pts]  (B)  A+B
time of evaluation. Avoid plunge po > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	the maximum pool depth within the 61 meter (200 feet) evaluation reach at the pool from road culverts or storm water pipes) (Check ONLY one box):    S cm - 10 cm [15 pts]     S cm [5pts]     NO WATER OR MOIST CHANNEL [0pts]     MAXIMUM POOL DEPTH (centimeters): 9
3. BANK FULL WIDTH (Measureda  > 4.0 meters (> 13°) [30 pts]  > 3.0 m - 4.0 m (> 9 7°-13') [25 pts  > 1.5 m - 3.0 m (> 4°8° - 9′7°) [20 p	Stheaverage of 3 - 4 measurements  (Check ONLY one box);   Bankf
The second date on a large	This information must also be completed
RIPARIAN WDTH (Per Bank)  Wide >10m Moderate 5-10m Narrow <5m None  COMMENTS	FLOODPLAIN QUALITY NOTE: River Left (L) and Right (R) as looking downstream.  FLOODPLAIN QUALITY (Most Predominant per Bank)  L R  L R  Mature Forest, Wetland Conservation Tillage Immature Forest, Shrub or Old Field Urban or Industrial  Residential, Park, New Field Open Pasture, Row Crop Fenced Pasture Mining or Construction
Stream Flowing Subsurface flow with isolated COMMENTS	
None 0.5 STREAM GRADIENT ESTIMATE	1.0   2.0   3.0   3.0   1.5   2.5   3.0
Flat (0.5 \$100 \$) Flat to Moderate	Moderate (2 th 100 th)

QHEI PERFORMED? Yes No QHEI Score	
DOWNSTREAM DESIGNATED USE(S)	Distance from Evaluated Stream
WWH Name: ICE Creek	
EWH Name:	Distance from Evaluated Stream
	IRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Ashland NRCS	
County: Law rence Towns	hip/City. Cool Grove
MISCELLANEOUS	
Base Flow Conditions? (Y/N) Date of last precipitation:	10/20/20 Quantity: 0.15 11
Photo-documentation Notes:	
Elevated Turbidity?(Y/N): Y Canopy (% open): 50	
Were samples collected for water chemistry? (Y/N): La	ab Sample # or ID (attach results):
Field Measures:Temp (*C) 16.7 Dissolved Oxygen (mg/l)	
is the sampling reach representative of the stream (Y/N) Y If no	t explain:
BIOLOGICAL OBSER (Record all observation	RVATIONS ons below)
BIOLOGICAL OBSET (Record all observation of the control of the con	RVATIONS ons below) own):
	RVATIONS ons below) own):
BIOLOGICAL OBSEF  (Record all observation of the control of the co	OF STREAM REACH (This must be completed) r site evaluation and a narrative description of the stream's location
BIOLOGICAL OBSEFF (Record all observative observed? (Y/N) Species observed (if known): Frogs or Tadpoles Observed? (Y/N) Species observed (if known): Salamanders Observed? (Y/N) Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Species observed: Comments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for	RVATIONS ons below)  own):  red (if known):  OF STREAM REACH (This must be completed)
BIOLOGICAL OBSEF  (Record all observative programments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION Include important landmarks and other features of interest for the control of	PROTIONS ONS below)  OWN):  OF STREAM REACH (This must be completed) r site evaluation and a narrative description of the stream's location  OF STREAM REACH (This must be completed)
BIOLOGICAL OBSEF  (Record all observative observed? (Y/N) Species observed (if known): Frogs or Tadpoles Observed? (Y/N) Species observed (if known): Species observed (if known): Species observed (if known): Species observed? (Y/N) Species observed (if known): Species observed? (Y/N) Species observed (if known): Species observed? (Y/N) Species observed? (Y/N) Species observed (if known): Species observed? (Y/N) Species observed (if known):	OF STREAM REACH (This must be completed) r site evaluation and a narrative description of the stream's location

Field Methods for Evaluating Primary Headwater Streams in Ohio Ohio EPA, Division of Surface Water

ALMP 408 Version 4.0 October 2018

hio	Primary Head	water Hab	itat Field E	valuatio	n Form netrics 1+2+3)	12
LENGTH OF STREAM	N Bellefonde Exter	18.49658 COMMENTS	RIVER CODE	63 9 13	NAGE AREA (MF) _ 9 RIVER MILE _	
STREAM CHANNEL	MODIFICATIONS: NON	E/ NATURAL CHAN	NEL RECOVERED	RECOVER	RING RECENT OR	NO RECOVER
(Max of 32) A TYPE    BLDR SL   BOULDER   BEDROCK   COBBLE   GRAVEL   SANO (<	(Estimate percent of every ty Add total number of significant sign	ubstrate types fou		DEBRIS [3 pots]	PERCENT	HHEI Metric Points Substrat Max = 40
2. Maximum Po	ST PREDOMINATE SUBSTRATION OF THE PROPERTY OF	num pool depthw		00 feet) evalu heck ONLYo ts]	ation reach at the ne box).	Pool Dept Max = 30
> 4.0 meters () > 3.0 m - 4.0 m	WIDTH (Measuredas the aver > 13") [30 pts] 1 (> 9"7"-13") [25 pts] 1 (> 4"8"-9"7") [20 pts]	age of 3 - 4 meas	>10 m -15 m (>3 <10 m (<3 3)[5p	'3' -4' 8")[15 ots]	ipts]	Bankfull Width Max=30
COMMENTS			AVERAGE BAI	NKFULL WID	TH (meters) 0.8	12
L R (P	IAN ZONE AND FLOODPLAIN  RIAN WIDTH er Bank)  L R e>10m erate 5-10m row <5m	FLOODPLAN  Mature Fores  mmature Ea	st, Wetland st, Wetland seat, Shrub or Old Fiel Park, New Field	d Right (R) as dominant per L R	A CONTRACTOR OF THE PARTY OF TH	rop
Stream Subsurf	REGIME (At Time of Evaluation Flowing (see flow with isolated pools (inte	erstitial)	Dry channel	no water (ep	ools, no flow (intermits themeral)	ent)
STREAM GRA	DIENT ESTIMATE	loderate (2 ti 100 ti	Moderate t	o Severe	Severe no s	100 0
□		7.7			-	

### ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): QHEI PERFORMED? Yes No QHEI Score (If Yes, Attach Completed QHEI form) DOWNSTREAM DESIGNATED USE(S) ✓ WWH Name: TCE Greek Distance from Evaluated Stream ☐ CWH Name: Distance from Evaluated Stream CWH Name: EWH Name: Distance from Evaluated Stream MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION. USGS Quadrangle Name: As h | and | NRCS Soil Map Page: NRCS Soil Map Stream Order: county: Lawrence Township/City: Log/ Grove MISCELLANEOUS Base Flow Conditions? (Y/N) \_ Y Date of last precipitation: 10/20/20 Quantity: 0.15 Elevated Turbidity?(Y/N): \_\_\_\_\_\_ Canopy (% open): \_\_\_\_\_\_ Were samples collected for water chemistry? (Y/N): \_\_\_\_\_\_ Lab Sample # or ID (attach results): \_\_\_\_\_ Field Measures.Temp (\*C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_ Conductivity (umhos/cm) is the sampling reach representative of the stream (Y/N) Y If not, explain: Additional comments/description of pollution impacts: **BIOLOGICAL OBSERVATIONS** Fish Observed? (Y/N) \_\_\_/ Species observed (if known):\_\_\_\_\_ Frogs or Tadpoles Observed? (Y/N) \_\_\_\_\_\_\_\_\_ Species observed (if known): Salamanders Observed? (Y/N) Species observed (if known): Aquatic Macroinvertebrates Observed? (Y/N) Species observed (if known): Comments Regarding Biology: No H20 DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

E Chia Environmental Protoccion Agency		HHEI Score (sum of m	netrics 1+2+3)
LENGTH OF STREAM REAL DATE 10/21/20 SCO	T RIVER BASIN 06/6 CH (ft) 200 LAT 38.4 DRER ASK COMM	19123 Z LONG 82.61350	NAGE AREX (MF) CO. / un;
and the second second		Field Evaluation Manual for Ohio's PH	to the contract to be because of
(Max of 32). Add tot  TYPE  BLDR SLABS [1]  BOULDER (>25  BEDROCK [16]  COBBLE (65-25  GRAVEL (2-64)  SAND (<2 mm)  Total of Percent  Bidr Slabs, Boulder, C	al number of significant substrate PERCENT  [6 pts] 6 mm) [16 pts] 56 mm) [12 pts] 75 mm) [9 pts] 76 pts] 77 mg   15 m	Serit). Check ONLY two predominant substrate types found (Max of 8). Final metric score is:  TYPE  SILT [3 pt]  LEAF PACK/WOODY DEBRIS [3: FINE DETRITUS [3 pts]  CLAY or HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3 pts]  (A)  TOTAL NUMBER OF SUBSTRA	per of boxes A & B PERCENT  So  Dots  (B)  A + B
2. Maximum Pool De	pth (Measure the maximum po Avoid plunge pools from road cul opts)	ool depth within the 61 meter (200 feet) evaluated by each or storm water pipes) (Check ONLY of 5 cm - 10 cm [15 pts] < 5 cm [5pts] NO WATER OR MOIST CHANNE	pation reach at the ne box):  Pool Dep Max = 30
COMMENTS		MAXIMUM POOL DEPTH (c	centimeters): 4
3. BANK FULL WIDT  > 4.0 meters (> 13')  > 3.0 m - 4.0 m (> 9')  > 1.5 m - 3.0 m (> 4')  COMMENTS	[30 pts] 7"- 13") [25 pts]	3 - 4 measurements  (Check ONLY one bit   1.0 m - 1.5 m (> 3' 3' - 4' 8') [18	Width Max-30
	This inf	formation must also be completed	
RIPARIAN L R (Per Ba Wide >10 Moderate Narrow < None	WIDTH EL R IM S-10m S5m R R	esidential, Park, New Field	
Stream Flowing Subsurface from COMMENTS	ME (At Time of Evaluation) (Ching low with isolated pools (interstitial from recent from r	Moist Channel, isolated por Dry channel, no water (ep Dry channel, no water (ep Dry channel) (Check ONLY one box):	3.0
0.5	1.5	2.5	>3

QHEI PERFORMED? Yes No QHEI Score (If Yes, Attach Completed QHEI form)	
DOWNSTREAM DESIGNATED USE(S)	
WWH Name: Little Ice Creek Distance from Evaluated Stream	
☐ CWH Name: Distance from Evaluated Stream	-
☐ EWH Name: Distance from Evaluated Stream	m
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE L	
USGS Quadrangle Name: Catletts burg NRCS Soil Map Page: NRCS Soil Map Stream	
county. Lawrence Townshipicity. Coal Grove	
MISCELLANEOUS	
Base Flow Conditions? (Y/N) Date of last precipitation: Ouantity:	
Photo-documentation Notes:	
Elevated Turbidity?(Y/N): N Canopy (% open): 5	
Were samples collected for water chemistry? (Y/N): Lab Sample # or ID (attach results):	
Field Measures Temp (*C) 16 Dissolved Oxygen (mg/l) pH (S.U.) 8./ Conductivity (umhos	(cm)
is the sampling reach representative of the stream (Y/N) If not, explain:	
is the sampling reach representative of the stream (Y/N) If not, explain:	
Additional comments/description of pollution impacts:	
BIOLOGICAL OBSERVATIONS	
(Record all observations below)	
Fish Observed? (Y/N) _ P Species observed (if known);	
Frogs or Tadpoles Observed? (Y/N) /J Species observed (if known):	
Salamanders Observed? (Y/N) Species observed (if known);	
Species observed (if known):	
Comments Regarding Biology: new observed	
	completed)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be of Include important landmarks and other features of interest for site evaluation and a narrative description of the str	completed)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be of Include important landmarks and other features of interest for site evaluation and a narrative description of the str	completed)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be of	completed)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be of Include important landmarks and other features of interest for site evaluation and a narrative description of the str	completed)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be of Include important landmarks and other features of interest for site evaluation and a narrative description of the stream of the str	completed)
Include important landmarks and other features of interest for site evaluation and a narrative description of the str	completed)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be of include important landmarks and other features of interest for site evaluation and a narrative description of the stream of the str	completed)
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be of Include important landmarks and other features of interest for site evaluation and a narrative description of the stream of the str	completed)
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DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be of Include important landmarks and other features of interest for site evaluation and a narrative description of the stream of the str	completed)

Page 2

## **OhioEPA**

## Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score:	42,25
A STATE OF THE STA	

Stream & Location:	Cellefonte Extension	138 KU Line	Rebuild Project	RM: Dat	e: 10/2/1962
Stream 10/	Little Ice Creek	Scorers Full N	lame & Affiliation: /		antec
River Code:	_ STORET #:	Lat./	Long.: 3 8. 490	182.615	7 Office verified L
BEST TYPES BLDR /SLABS [10] BOULDER [9] COBBLE [8] GRAVEL [7] SAND [6] BEDROCK [5]	HARDPAN DETRITUS MUCK [2]  A D SILT [2]  A ARTIFICIA	PES POOL RIFFLE  [4]	ORIGIN  LIMESTONE [1]  TILLS [1]  WETLANDS [0]  HARDPAN [0]  SANDSTONE [0]	SILT   MOD	ERATE [-1] Substrate MAL [0] [-1] INSIVE [-2] ERATE [-1] MAL [0]  Substrate  Amazimum 20
quality; 3-Highest quality in	GETATION [1] ROOTW	out not of highest qual- e.g., very large boulde / fast water, or deep, > 70cm [2]( ADS [1]	ality or in small amounts of ers in deep or fast water, la	rge Check ONE rge Check ONE cols.	MOUNT E (Or 2 & average) IVE >75% [11] ATE 25-75% [7] 5-<25% [3] ABSENT <5% [1] Cover Maximum 20
SINUOSITY DEV  HIGH [4]	XCELLENT [7] NONE [6] OOD [5] RECOVER AIR [3] RECOVER	ELIZATION ED [4]	STABILITY  HIGH [3]  MODERATE [2]  LOW [1]	5	Channel Maximum 20
River right looking downstream EROSION NONE / LITTLE [3] MODERATE [2] HEAVY / SEVERE [1] Comments	WIDE > 50m [4]     MODERATE 10-50m [3]     NARROW 5-10m [2]     VERY NARROW < 5m [1	FLO  RESIDENTI  FENCED PASS	OD PLAIN QUALITY WAMP [3] FOLD FIELD [2] AL, PARK, NEW FIELD [1]	LR/ Koa	FION TILLAGE [1] INDUSTRIAL [0] INSTRUCTION [0]
MAXIMUM DEPTH Check ONE (ONLY!)  > 1m [6]  0.7-<1m [4]	O RIFFLE / RUN QUALITY CHANNEL WIDTH Check ONE (Or 2 & average) POOL WIDTH > RIFFLE WIDT POOL WIDTH = RIFFLE WIDT POOL WIDTH > RIFFLE WIDT	CUR  Ct  H[2] □ TORRENT  H[1] □ VERY FAS  H[0] □ FAST [1]  MODERAT	RENT VELOCITY neck ALL that apply TAL [-1] SLOW [1] ST [1] INTERSTITIAL INTERMITTEN TE [1] EDDIES [1] for reach - pools and riffles	Prima: Second (circle one an	on Potential ry Contact ary Contact d comment on back)  Pool / Current Maximum 12
of riffle-obligate s RIFFLE DEPTH	RUN DEPTH F  MAXIMUM > 50cm [2] S  MAXIMUM < 50cm [1] M	eck ONE (Or 2 & ave RIFFLE / RUN SU TABLE (e.g., Cobbl	erage). JBSTRATE RIFFLE e, Boulder) [2] Large Gravel) [1]	Opulation No. 1 P. 1	Riffle /
6] GRADIENT (29, 6 DRAINAGE AREA (9, 2)	ft/mi) URRY LOW - LOW [2 MODERATE [6-10] mi²) HIGH VERY HIGH [			GLIDE: 10	Gradient S

A] SAMPL REACH Check ALL that apply METHOD STAGE	Comment RE: Reach consistency/l		ion/Observed - Inferred, Othe	er/Sampling observations, Concerns, Acc	cess direct etc.
BOAT 1st -sample pass-2nd   WADE   HIGH   DP   OTHER   NORMAL	Rainon 10/20/20	~ 0,15			
DISTANCE	B] AESTHETICS    NUISANCE ALGAE   INVASIVE MACROPHYTES   EXCESS TURBIDITY   DISCOLORATION   FOAM / SCUM   OIL SHEEN   TRASH / LITTER   NUISANCE ODOR   SLUDGE DEPOSITS   CSOs/SSOs/OUTFALLS   ATION AREA DEPTH	DJ MAINTENANCE PUBLIC / PRIVATE / BOTH / NA ACTIVE HISTORIC / BOTH / NA YOUNG-SUCCESSION-OLD SPRAY / SNAG / REMOVED MODIFIED / DIPPED OUT / NA LEVEED / ONE SIDED RELOCATED / CUTOFFS MOVING-BEDLOAD-STABLE ARMOURED / SLUMPS ISLANDS / SCOURED IMPOUNDED / DESICCATED FLOOD CONTROL / DRAINAGE	Erosion from Hannelization For road  Activated stabilization  Accorate stabilization  Accorate stabilization	EJISSUES  WWTP / CSO / NPDES / INDUSTRY HARDENED / URB AN / DIRT&GRIME CONTAMINATED / LANDFILL BMPS-CONSTRUCTION-SEDIMENT LOGGING / IRRIGATION / COOLING BANK / EROSION / SURFACE FALSE BANK / MANURE / LAGOON WASH H <sub>2</sub> 0 / TILE / H <sub>2</sub> 0 TABLE ACID / MINE / QUARRY / FLOW NATURAL / WETLAND / STAGNANT PARK / GOLF / LAWN / HOME ATMOSPHERE / DATA PAUCITY	F] MEASUREMENTS  x̄ width x̄ depth max. depth x̄ bankfull x̄ depth W/D ratio bankfull max. depth floodprone x² width entrench. ratio Legacy Tree:
Stream Drawing:	POOC.    Proble-   PSIL			AIMOSPHERE / DAIA PAUCITY	
Sche	and that	9'79	lesidential		
Clyn	<u> </u>	sell.	dd-1 heart	04100	
	111		The Ho	year is good	
mmm	M	1 mm		1/	
+	H	care 2	100 How 55	2	) /
		in the	~ "	Cras Pige	R
			1-	D'	200
	TUP RD Z	68		bool /	Alter to 1. Zater
				,	Hartona

Ohn Enversements Protection Agency	Primary He	eadwater Ha	bitat Field Ev HHEI Score (s	aluation Fo sum of metrics	1+2+3) 3
LENGTH OF STRE	non Belle Forte E, earn II river basin - AM REACH (ft) 200 Le scorer AJK All Items On This Form	LAT38.4905 COMMENTS	RIVER CODE	DRAINAGE A	
	EL MODIFICATIONS: [				
TYPE BLDR BOUL BEDR COBB GRAA	TE (Estimate percent of e 2). Add total number of signi P SLABS [16 pts] DER (>256 mm) [16 pts] DEK [16 pts] LE (65-256 mm) [12 pts] /EL (2-64 mm) [9 pts]	every type present). Chificant substrate types for ERCENT TYPE	ound (Max of 8), Final me	DEBRIS [3 pts]	Metric Points Substra Max = 4
2. Maximu time of er	Boulder, Cobble, Bedrock _ MOST PREDOMINATE SUB m Pool Depth (Measure the valuation. Avoid plunge pool	e maximum pool depti	hwithin the 61 meter (2)	neck Civil y one box)	PES: Pool Dep
>22.5-3	meters [20 pts] 0 cm [30 pts] 5 cm [25 pts]		NO WATER OR MO	OL DEPTH (centime	
> 4.0 met	ULL WIDTH (Measured as ers (>13") [30 pts] 4.0 m (> 9" 7"-13") [25 pts] 3.0 m (> 4" 8" - 9" 7") [20 pts		≥ 1.0 m - 1.5 m (> 3 ≤ 1.0 m (≤ 3' 3")[5]	7 3" - 4" 8")[15 pts] pts]	Bankfu Width Max=30
COMME	NTS			NKFULL WIDTH (me	eters)
4 : 019 LR	RIPARIAN WIDTH (Per Bank) Wide >10m Moderate 5-10m Narrow <5m	FLOODPL  L R  Mature F	AIN QUALITY (Most Pre- orest, Wetland Forest Shrub or Old Fin ial, Park, New Field	d Right (R) as looking edominant per Bank) L R Conser eld  Urban c	vation Tillage or Industrial lasture, Row Crop or Construction
	None COMMENTS				
s	COMMENTS	pools (interstitial)	Moist Chani Dry channe	nel, isolated pools, no il, no water (ephemeri one box):	The state of the s
S S S	COMMENTS LOW REGIME (At Time of it tream Flowing ubsurface flow with isolated	ds per 61 m (200 ft) of c	Moist Change Dry channel (Check ONLY 2.0 2.5	one box):	The state of the s

### ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): QHEI PERFORMED? Yes No QHEI Score \_\_\_\_\_ (If Yes, Attach Completed QHEI form) DOWNSTREAM DESIGNATED USE(S) WWH Name: Little Ice Greek Distance from Evaluated Stream Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION. USGS Quadrangle Name: Catletts burg NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order:\_\_\_\_\_ county: Laurence Township/City: Coal Grove MISCELLANEOUS Base Flow Conditions? (Y/N) Date of last precipitation: 16/21/20 Quantity: Elevated Turbidity?(Y/N): \_\_\_\_ Canopy (% open): \_\_\_\_\_ S Were samples collected for water chemistry? (Y/N): \_\_\_\_\_ Lab Sample # or ID (attach results): \_\_\_\_ Field Measures:Temp (\*C) \_\_\_\_\_ Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) \_\_\_\_\_ Conductivity (umhos/cm) \_\_\_\_ Is the sampling reach representative of the stream (Y/N) \_\_\_\_ If not, explain: \_\_\_\_\_ Additional comments/description of pollution impacts: **BIOLOGICAL OBSERVATIONS** Fish Observed? (Y/N) \_\_\_ Species observed (if known);\_\_\_ Frogs or Tadpoles Observed? (Y/N) \_\_\_\_ Species observed (if known):\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_ Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Species observed (if known): Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

	SITE NAMELOCATION Bellefo		11.
		200 LAT 38. 490609 LONG -82. 62055 Z RIVER MILE _	Z I Mr
	1 /	This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for I	nstruction
	STREAM CHANNEL MODIFICATI	TIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR	NO RECOV
	1. SUBSTRATE (Estimate por (Max of 32). Add total numb TYPE BLOR SLABS [16 pts] BOULDER (>256 mm) [1 GRAVEL (2-64 mm) [9 GRAVEL (2-64 mm) [6 pts] Total of Percentages of Bidr Slabs, Boulder, Cobble, E	[16 pts]   LEAF PACKWOODY DEBRIS [3 pts]   FINE DETRITUS [3 pts]   GO   DEBRIS [3 pts]	HHE Metri Point Substr Max = 4
	SCORE OF TWO MOST PREDOMIN		
	time of evaluation. Avoid plu   > 30 centimeters [20 pts]   > 22.5 - 30 cm [30 pts]   > 10 - 22.5 cm [25 pts]	unge pools from road culverts or storm water pipes) (Check ONLY one box):    5 cm - 10 cm [15 pts]     < 5 cm [5pts]     NO WATER OR MOIST CHANNEL [0pts]	Pool De Max = :
	COMMENTS	MAXIMUM POOL DEPTH (centimeters):	
		suredas the average of 3 - 4 measurements) (Check ONL Yone box);    \( \sum_{\text{\colored}} > 1.0 \text{ m} - 1.5 \text{ m} (> 3' 3" - 4' 8")[15 \text{ pts}]	Bankft Width
	> 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7'- 13') > 1.5 m - 3.0 m (> 4' 8" - 9' 7'	[25 pts] ≤1.0 m (<3'3')[5 pts]	Max=3
	> 3.0 m - 4.0 m (> 9'.7"- 13')	[25 pts] ≤1.0 m (<3'3')[5 pts]	Max=3
. 36 1	> 3.0 m - 4.0 m (> 9.7°-13°)  > 1.5 m - 3.0 m (> 4°8° - 9.7°  COMMENTS	[25 pts]   \$\leq 1.0 \text{ m (\$\leq 3'3')[5 pts]}\$  AVERAGE BANKFULL WIDTH (meters)   This information mustalso be completed	5
=0.75 1 =16' T	> 3.0 m - 4.0 m (> 9 7*-13*)   > 1.5 m - 3.0 m (> 4*8* - 9*7*   COMMENTS   RIPARIAN ZONE AN RIPARIAN WIDTH (Per Bank)   Wide > 10 m   Moderate 5-10 m	25 pts	5
=0.75 1 =16' T	> 3.0 m - 4.0 m (> 9.7°-13°)    > 1.5 m - 3.0 m (> 4°8° - 9°7')   COMMENTS	25 pts	5
=0.75 1 =16' T	> 3.0 m - 4.0 m (> 9.7°-13°)     > 1.5 m - 3.0 m (> 4°8° - 9°7°     COMMENTS	25 pts	srop n
=0.75 1 =16' T	O.75  RIPARIAN ZONE AN RIPARIAN WIDTH L R (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None COMMENTS FLOW REGIME (At 7 Stream Flowing Subsurface flow with it COMMENTS	AVERAGE BANKFULL WIDTH (meters)  This information mustalso be completed  ND FLOODPLAIN QUALITY + NOTE: River Left (L) and Right (R) as looking downstream  FLOODPLAIN QUALITY (Most Predominant per Bank)  L R  Mature Forest Wetland Conservation Tilage  Infiniture Forest Shrub or Old Field Urban or Industrial  Residential, Park, New Field Open Pasture, Row Conservation  Residential, Park, New Field Open Pasture, Row Conservation  Mining or Construction  Time of Evaluation) (Check ONLY one box):  Moist Channel, isolated pools, no flow (intermit Dry channel, no water (ephemeral)  r of bends per 61 m (200 ft) of channel) (Check ONLY one box):  1.0 2.0 3.0 3.0 3.1	rop n

WWH Name: L	EAM DESIGNATED USE(S)			
	ittle Ice Creek	Distance from	Evaluated Stream	
CWH Name:		Distance from	Evaluated Stream	
EWH Name:		Distance from	Evaluated Stream	_
	ATTACH COPIES OF MAPS, INCLUDING THE	Control of the Contro		
	Name: Catletts burg			
county Lawr	enceTo	washipicity Cac Grove		
MISCELL				
Base Flow Condition	s? (Y/N). Y Date of last precipitation	10/20/20 Quantity:	6.15	
Photo-documentatio				
Elevated Turbidity?(	Y/N):// Canopy (% open):	5		
	cted for water chemistry? (Y/N):			
Field Measures Ten	np (°C) Dissolved Oxygen (mg/l) _	pH (S.U.) Con	ductivity (umhos/cm)	- 1
	ch representative of the stream (Y/N)			
1.1				
Additional comments	s/description of pollution impacts:			
	BIOLOGICAL C	BSERVATIONS		
		ervations below)		
F 01				
	N) Species observed (if known):_			
Frogs or Tadpoles O	bserved? (Y/N) Species observed	(if known):		
Frogs or Tadpoles O Salamanders Observ	bserved? (Y/N) / Species observed (if knowed? (Y/N) / Species observed (if knowed? (Y/N) / Species observed)	(if known):		
Frogs or Tadpoles O Salamanders Observ Aquatic Macroinvert	bserved? (Y/N) Species observed (if known bserved) Species observed (if known between Species of Sp	(if known):		
Frogs or Tadpoles O Salamanders Observ Aquatic Macroinvert	bserved? (Y/N) / Species observed (if knowed? (Y/N) / Species observed (if knowed? (Y/N) / Species observed)	(if known):		
Frogs or Tadpoles O Salamanders Observ Aquatic Macroinvert Comments Regardin	bserved? (Y/N) Species observed wed? (Y/N) Species observed (if know betrates Observed? (Y/N) Species of g Biology: No Species observed	(if known); own); oserved (if known);		
Frogs or Tadpoles O Salamanders Obsen Aquatic Macroinvert Comments Regardin  DRAW	bserved? (Y/N) Species observed ved? (Y/N) Species observed (if know ebrates Observed? (Y/N) Species of g Biology: No H2 C	(ifknown):berved (ifknown):	is <u>must</u> be complete	d)
Frogs or Tadpoles O Salamanders Obsen Aquatic Macroinvert Comments Regardin  DRAW	bserved? (Y/N) Species observed (if knowed? (Y/N) Species observed (if knowed? (Y/N) Species of g Biology: No Hoo Color (No Co	(ifknown):berved (ifknown):	is <u>must</u> be complete	d)
Frogs or Tadpoles O Salamanders Obsen Aquatic Macroinvert Comments Regardin  DRAW	Species observed (Y/N) Species observed (if know ebrates Observed? (Y/N) Species observed (if know ebrates Observed? (Y/N) Species of g Biology: No Species of ING AND NARRATIVE DESCRIPT Important landmarks and other features of intervious of the control of the	isserved (if known):	is <u>must</u> be complete	d)
Frogs or Tadpoles O Salamanders Obsen Aquatic Macroinvert Comments Regardin  DRAW	Species observed (Y/N) Species observed (if know ebrates Observed? (Y/N) Species observed (if know ebrates Observed? (Y/N) Species of g Biology: No Species of ING AND NARRATIVE DESCRIPT Important landmarks and other features of intervious of the control of the	isserved (if known):	is <u>must</u> be complete cription of the stream's locati	d)
Frogs or Tadpoles O Salamanders Observ Aquatic Macroinvert Comments Regardin  DRAW Include in	Species observed (Y/N) Species observed (if know ebrates Observed? (Y/N) Species observed (if know ebrates Observed? (Y/N) Species of g Biology: No Species of ING AND NARRATIVE DESCRIPT Important landmarks and other features of intervious of the control of the	isserved (if known):	is <u>must</u> be complete cription of the stream's locati	d)
Frogs or Tadpoles O Salamanders Obsen Aquatic Macroinvert Comments Regardin  DRAW	Species observed (Y/N) Species observed (if know ebrates Observed? (Y/N) Species observed (if know ebrates Observed? (Y/N) Species of g Biology: No Species of ING AND NARRATIVE DESCRIPT Important landmarks and other features of intervious of the control of the	in (if known):	is <u>must</u> be complete	d)
Frogs or Tadpoles O Salamanders Observ Aquatic Macroinvert Comments Regardin  DRAW Include in	Species observed (Y/N) Species observed (if know ebrates Observed? (Y/N) Species observed (if know ebrates Observed? (Y/N) Species of g Biology: No Species of ING AND NARRATIVE DESCRIPT Important landmarks and other features of intervious of the control of the	isserved (if known):	is must be complete cription of the stream's locati	d)
Frogs or Tadpoles O Salamanders Observ Aquatic Macroinvert Comments Regardin  DRAW Include in	Species observed (Y/N) Species observed (if know ebrates Observed? (Y/N) Species observed (if know ebrates Observed? (Y/N) Species of g Biology: No Species of ING AND NARRATIVE DESCRIPT Important landmarks and other features of intervious of the control of the	interpretation and a narrative des	is must be complete cription of the stream's locati	d)
Frogs or Tadpoles O Salamanders Observ Aquatic Macroinvert Comments Regardin  DRAW Include in	Species observed (Y/N) Species observed (if know ebrates Observed? (Y/N) Species observed (if know ebrates Observed? (Y/N) Species of g Biology: No Species of ING AND NARRATIVE DESCRIPT Important landmarks and other features of intervious of the control of the	interpretation and a narrative des	is <u>must</u> be complete cription of the stream's locati	d)

Chie Engravement Proposition Agency	T filliary frea	uwater mabi	tat Field Evaluat HHEI Score (sum of		44
LENGTH OF STREAM DATE 10/21/20 NOTE: Complete All	SCORER ATK  Items On This Form - R	Ohic RF AT 38, 49 10 69 COMMENTS Usefer to "Field Evalu	LONG 82.6234	RAINAGE AREA (mir) 4	structions
STREAM CHANNEL	MODIFICATIONS: N	ONE / NATURAL CHANN	EL RECOVERED RECO	VERING RECENT OR	NO RECOVER
Max of 32). A TYPE  BLDR SL BOULDER BEDROCK COBBLE GRAVEL SAND (<2 Total of PL Bidr Slabs, Bou	ABS [16 pts] PERC (>256 mm) [16 pts]	it substrate types found ENT TYPE  S S S S S S S S S S S S S S S S S S	CONLY two predominant subst d (Max of 8). Final metric score silt [3 pt] EAF PACKWOODY DEBRIS inc DETRITUS [3 pts] CLAY or HARDPAN [0 pt] NUCK [0 pts] ARTIFICIAL [3 pts]	[3 pts]	HHEI Metric Points Substrat Max = 40
	ition. Avoid plunge pools from rs [20 pts] [30 pts]	m road culverts or stor	thin the 61 meter (200 feet) even water pipes) (Check ONL 5 cm - 10 cm [15 pts] < 5 cm [5pts] NO WATER OR MOIST CHAN	Yone box):	Pool Dept Max = 30
COMMENTS			MAXIMUM POOL DEPTH	(centimeters): 6	
> 4.0 meters (: > 3.0 m - 4.0 m			rements) (Check ONLYon > 1.0 m - 1.5 m (> 3° 3° - 4° 8°) ≤ 1.0 m (≤ 3° 3°) [5 pts]  AVERAGE BANKFULL V	[15 pts]	Bankful Width Max=30
	New York Stone	This information m	ustalso be completed		
L R (F Wid	RIAN WIDTH ler Bank) e >10m lerate 5-10m row <5m	FLOODPLAN L R Mature Forest	est, Shrub of Old Field		гор
Stream Subsur	REGIME (At Time of Evalual Flowing face flow with isolated pools ENTS INT	(interstitial)	Moist Channel, isolated Dry channel, no water	pools, no flow (intermitte (ephemeral)	ent)
None 0.5		.0 .5	2.0 2.5	3.0	

ADDITIONAL STREAM INFORMATIO	ON (This Information Must Also be Completed):
QHEI PERFORMED? The No QHEI Score	e (If Yes, Attach Completed QHEI form)
DOWNSTREAM DESIGNATED USE(S)	
TWWH Name: Little Ice Greek	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING	THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
USGS Quadrangle Name: Catletts burg	NRCS Soil Map Page:NRCS Soil Map Stream Order:
county: Lawrence	
MISCELLANEOUS	
Base Flow Conditions? (Y/N). Y Date of last precipit	itation: 10/z0/Z0 Quantity:
Photo-documentation Notes:	
Elevated Turbidity?(Y/N):/ Canopy (% open):	60
	Lab Sample # or ID (attach results):
	ng/l) pH (S.U.) 8, 7_ Conductivity (umhos/cm)
is the sampling reach representative of the stream (Y/N) _	If not, explain:
Additional comments/description of pollution impacts:	
	CAL OBSERVATIONS all observations below)
Fish Observed? (Y/N) N Species observed (if know	
	erved (if known):
Salamanders Observed? (Y/N) N Species observed	(if known);
Aquatic Macroinvertebrates Observed? (Y/N) Y Spec	cies observed (if known): Coddisfly (95.85, Crayfish
Comments Regarding Biology:	
	RIPTION OF STREAM REACH (This <u>must</u> be completed)
The state of the s	of interest for site evaluation and a narrative description of the stream's location
whe	\
Con	
7	9
09	000 , 10m 8
TOWN O	600 4 00 8
LOW	A TO A TO A
	my cale
	(1)
7)	iccle
//	

Field Methods for Evaluating Primary Headwater Streams in Ohio Ohio EPA, Division of Surface Water

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Charles Primary Headw	HHEI Score (sum of metrics 1+2+3)
LENGTH OF STREAM REACH (#) 200 LAT 38 DATE 10/21/20 SCORER ATK C	8,941550 LONG -82, 62,5271 RIVER MILE
1	to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction  NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVE
	e present). Check ONL Y two predominant substrate TYPE boxes.  strate types found (Max of 8). Final metric score is sum of boxes A & B  TYPE  SLT [3 pt]  LEAF PACKWOODY DEBRIS [3 pts]  FINE DETRITUS [3 pts]  CLAY or HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3 pts]  TOTAL NUMBER OF SUBSTRATE TYPES:  HHE  Metrical  Notation  Substrate  (B)  4 + B
Maximum Pool Depth (Measure the maximum time of evaluation. Avoid plunge pools from road > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]  COMMENTS	m pool depth within the 61 meter (200 feet) evaluation reach at the d culverts or storm water pipes) (Check ONLY one box):    5 cm - 10 cm [15 pts]   < 5 cm [5pts]   NO WATER OR MOIST CHANNEL [0pts]
	ge of 3 - 4 measurements) (Check ONLY one box);  > 1.0 m - 1.5 m (> 3° 3° - 4° 8°) [15 pts]  ≤ 1.0 m (≤ 3° 3°) [5 pts]  Bankf Width Max=3
COMMENTS	AVERAGE BANKFULL WIDTH (meters) 1.2
	INALITY * NOTE: River Left (L) and Right (R) as looking downstream.    FLOODPLAN QUALITY (Most Predominant per Bank)   L R
Stream Flowing Subsurface flow with isolated pools (intersection)	Moist Channel, isolated pools, no flow (intermittent)
□ 0.5  STREAM GRADIENT ESTIMATE □ Flat (0.5 \$1.00 \$1.	2.5 >3  derate (2 10 100 10) Moderate to Severe Severe (10 10 100 10)

DOWNSTREAM DESIGNATED USE(S)	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING TH	E ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.
SGS Quadrangle Name: Ash 19nd	NRCS Soil Map Page:NRCS Soil Map Stream Order
ounty Lawrence T	
MISCELLANEOUS	
ase Flow Conditions? (Y/N):	on: 10/20/20 Quantity: 0:15
noto-documentation Notes:	
evated Turbidity?(Y/N): Canopy (% open):	40
ere samples collected for water chemistry? (Y/N):	Lab Sample # or ID (attach results):
	pH (S.U.) 7.5 Conductivity (umhos/cm)
the sampling reach representative of the stream (Y/N)	If not, explain:
dditional comments/description of pollution impacts:	
BIOLOGICAL	OBSERVATIONS
	oservations below)
sh Observed? (Y/N) Species observed (if known):_	
ogs or Tadpoles Observed? (Y/N) Species observed	d (if known):
lamanders Observed? (Y/N) Species observed (if kn	lown):
quatic Macroinvertebrates Observed? (Y/N) Species observed (Historian	observed (if known): Ccgy 1) h
mments Regarding Biology:	
DRAWING AND NARRATIVE DESCRIP	TION OF STREAM REACH (This must be completed)
	erest for site evaluation and a narrative description of the stream's location
Hay field	
1=5D15	001.
	Sittle.
-/	X X
W>	W/ bl
W /	W:
Total for	July July

Field Methods for Evaluating Primary Headwater Streams in Ohio Ohio EPA, Division of Surface Water

Max of 32) Add total number of significant substrate types found (Max of 8). Final metric score is suit of toxes 4 a. b.   PRECENT   TYPE   BLDR SLABS (16 pts)	Primary Head	dwater Habitat Field Evaluation Form HHEI Score (sum of metrics 1+2+3)
STREAM CHANNEL MODIFICATIONS: NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVERING RECOVERY RECOVER	LENGTH OF STREAM REACH (1) 100 LA	T 38.494064 LONG 82.631270 RIVER MILE
(Max of 32). Add total number of significant substrate types found (Max of 3). Final metric score is sum of blooks A. 8. B. HTTPE  BLDR SLABS (16 pts)  BOULDER (<256 mm) [16 pts]  COBBLE (65-256 mm) [12 pts)  COBBLE (65-256 mm) [12 pts)  COBBLE (65-256 mm) [12 pts)  CLAY or HARDPAIN [0 pt]  BEDROCK [16 pts]  CLAY or HARDPAIN [0 pt]  ARTIFICIAL [3 pts]  Total of Percentages of  Bdr Slabs, Boulder (Cobble, Bedrock  SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPEs:  ARTIFICIAL [3 pts]  TOTAL HUMBER OF SUBSTRATE TYPEs:  ARTIFICIAL [3 pts]  TOTAL HUMBER OF SUBSTRATE TYPEs:  ARTIFICIAL [3 pts]  ACCUMENTS  COMMENTS  MAXIMUM POOL DEPTH (centimeters):  A to meters (> 13) [30 pts]  > 10 - 22.5 cm [25 pts]  NO WATER OR MOST CHANNEL [0 pts]  > 1.0 m - 4.0 m (> 9.7 - 1.3) [25 pts]  This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE River Left (L) and Right (R) as looking downstream.  RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE River Left (L) and Right (R) as looking downstream.  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE River Left (L) and Right (R) as looking downstream.  RIPARIAN WIDTH  RIPARIAN FLOODPLAIN QUALITY * NOTE River Left (L) and Right (R) as looking downstream.  RIPARIAN WIDTH  RIPARIAN FLOODPLAIN QUALITY * NOTE River Left (L) and Right (R) as looking downstream.  RIPARIAN WIDTH  RIPARIAN FLOODPLAIN QUALITY * NOTE River Left (L) and Right (R) as looking downstream.  RIPARIAN Flood (R) Time of Evaluation (Check ONLY one box):  Stream Flowing  Mature Forest, Wetland  Moderate S-10m  Mining or Construction  COMMENTS  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):		
time of evaluation. Avoid plunge pools from road culverts or stgrm water pipes.)    30 centimeters [20 pts]   5 cm - 10 cm [15 pts]     > 22.5 - 30 cm [30 pts]   5 cm   5 pts]     > 10 - 22.5 cm [25 pts]   NO WATER OR MOIST CHANNEL [0pts]     > 10 - 22.5 cm [25 pts]   NO WATER OR MOIST CHANNEL [0pts]     > 10 - 22.5 cm [25 pts]   NO WATER OR MOIST CHANNEL [0pts]     > 3. BANK FULL WIDTH (Measured as the average of 3 - 4 measurements) (Check ONLY one box):   > 4.0 meters (> 13) [30 pts]   > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]     > 3.0 m - 4.0 m (> 9' 7" - 13) [25 pts]   > 1.0 m (< 3' 3") [5 pts]     > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]     COMMENTS	Max of 32). Add total number of significant   PERCI	# substrate types found (Max of 8). Final metric score is sum of boxes A 8 B PERCENT  TYPE  SILT [3 pt]  LEAF PACKWOODY DEBRIS [3 pts]  FINE DETRITUS [3 pts]  CLAY or HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3 pts]  (A)  (B)  A + B
3. BANK FULL WIDTH (Measuredas the average of 3 - 4 measurements) (Check ONLY one box):    > 4.0 meters (> 13) [30 pts]	time of evaluation. Avoid plunge pools from > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]	S cm - 10 cm [15 pts]   S cm [5pts]   NO WATER OR MOIST CHANNEL [0pts]
> 4.0 meters (>13) [30 pts]		
This information mustalso be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream*  RPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank)  R Wide >10m	> 4.0 meters (> 13") [30 pts] > 3.0 m - 4.0 m (> 9" 7"-13") [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] Width
RIPARIAN WIDTH   COMMENTS	AVERAGE BANKFULL WIDTH (meters) 2	
RPARIAN WDTH (Per Bank)  R (Pe		
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (interstitial)  COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  1.0 2.0 3.0 0.5 3.0 2.5 3.0	RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None	R L R  Mature Forest, Wetland Conservation Tillage  mmature Forest, Shrub or Old Field Urban or Industrial  Residential Park, New Field Open Pasture, Row Crop
None	Stream Flowing  Subsurface flow with isolated pools (in	Moist Channel, isolated pools, no flow (intermittent)
ETDEAM CDADIENT ECTIMATE	☐ None ☐ 1.0	2.0 🔲 3.0
Flat (0.5 m100 m) Flat to Moderate   Moderate (2 m100 m)   Moderate to Severe   Severe (10 m100 m)		Moderate (2 th not t) Moderate to Severe Severe (10 th not ti

### ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): QHEI PERFORMED? Yes No QHEI Score (If Yes, Attach Completed QHEI form) DOWNSTREAM DESIGNATED USE(S) WWH Name: Little Toe Creek Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: Distance from Evaluated Stream MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION. USGS Quadrangle Name: Ashland NRCS Soil Map Page: \_\_\_\_\_\_NRCS Soil Map Stream Order:\_\_\_\_\_ county: Laurence Townshipter Cool Grove Base Flow Conditions? (Y/N): Date of last precipitation: 10/20/20 Quantity: 0.15" Photo-documentation Notes: Elevated Turbidity?(Y/N): \_\_\_\_/ Canopy (% open): \_\_\_\_\_\_\_ C Were samples collected for water chemistry? (Y/N): \_\_\_\_\_ Lab Sample # or ID (attach results): \_\_\_\_ Field Measures:Temp (°C) 15.7 Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) 7.7 Conductivity (umhos/cm) Is the sampling reach representative of the stream (Y/N) \_\_\_Y \_\_ If not, explain: \_\_\_\_\_ Additional comments/description of pollution impacts: **BIOLOGICAL OBSERVATIONS** (Record all observations below) Fish Observed? (Y/N) \_\_\_\_ Species observed (if known):\_\_\_\_ Frogs or Tadpoles Observed? (Y/N) \_ / Species observed (if known): Salamanders Observed? (Y/N) \_\_\_\_\_ Species observed (if known); Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): Caddis Ply Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location slope FLOW

Field Methods for Evaluating Primary Headwater Streams in Ohio Ohio EPA, Division of Surface Water

TYPE    BLDR SLABS [16 pts]	Ohis Increasured Frustrian Agency	dwater Habitat Field Evaluation Form HHEI Score (sum of metrics 1+2+3)	29
OTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction (TREAM CHANNEL MODIFICATIONS:   NONE NATURAL CHANNEL   RECOVERED   RECOVERING   RECENT OR NO RECOVERED   RECENT OR NO RECOVERED   RECOVERING   RECENT OR NO RECOVERED   RECENT OR NO RECOVERED   RECOVERING   RECENT OR NO RECOVER OF THE OWN OF THE DOCUMENT   RECENT OR NO RECOVER OF THE OWN OF THE DOCUMENT   RECENT OR NO RECOVER OF THE OWN OF THE DOCUMENT   RECENT OR NO RECOVER OF THE OWN OF THE DOCUMENT   RECENT OR NO RECOVER OF THE OWN OF THE DOCUMENT   RECENT OR NO RECENT OR N	SITE NUMBERS LEGION / RIVER BASIN OLLENGTH OF STREAM REACH (#) 90 LA	T 38, 194845 LONG 82.633745 RIVER MILE	lmi
Max of 32) Add total number of significant substrate types found (Max of 8) Final metric score is sum of boxes A & B FINITYPE   BLDR SLABS [46 pts]   PERCENT   YPE   SLT [3 pt]   RED (SLDER)   RED	OTE: Complete All Items On This Form - R	efer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instr	
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water ppes) (Check ONL Yone box)    30 centimeters [20 pts]	Max of 32). Add total number of significan   PERC!	# substrate types found (Max of 8) Final metric score is sum of boxes A & B  ENT TYPE  SILT [3 pt]  LEAF PACKWOODY DEBRIS [3 pts]  FINE DETRITUS [3 pts]  CLAY or HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3 pts]  (B)	HHE Metr Point Substr Max =
3. BANK FULL WIDTH (Measuredas the average of 3 - 4 measurements) (Check ONLY one box):    3.0 m - 4.0 m (> 9 7' - 13') [25 pts]	2. Maximum Pool Depth (Measure the matime of evaluation. Avoid plunge pools from > 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]	mroad culverts or storm water pipes) (Check ONLY one box):  5 cm - 10 cm [15 pts]  < 5 cm [5pts]	
> 4.0 meters (> 13') [30 pts]	COMMENTS	MAXIMUM POOL DEPTH (centimeters): 1.5	
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY * NOTE: River Left (L) and Right (R) as looking downstream*  RIPARIAN WIDTH FLOODPLAIN QUALITY (Most Predominant per Bank)  L R L R  Wide >10m   Mature Forest, Wetland   Conservation Tillage   Immature, Editest, Shrub or Old Field   Urban or Industrial   Open Pasture, Row Crop   None   Residential, Park, New Field   Open Pasture, Row Crop   Mining or Construction  COMMENTS   Moist Channel, isolated pools, no flow (intermittent)   Stream Flowing   Moist Channel, isolated pools, no flow (intermittent)   COMMENTS   Dry channel, no water (ephemeral)   COMMENTS   SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):    None	> 4.0 meters (> 13") [30 pts] > 3.0 m - 4.0 m (> 9"7"-13") [25 pts]	>1.0 m -1.5 m (> 3'3' -4'8')[15 pts]	Width
RIPARIAN WIDTH   COMMENTS	AVERAGE BANKFULL WIDTH (meters)	_	
RIPARIAN WIDTH  (Per Bank)  L R  Wide >10m  Mature Forest, Wetland  Conservation Tilage  Moderate 5-10m  Narrow <5m  None  Fenced Pasture  COMMENTS  FLOW REGIME (At Time of Evaluation)  Subsurface flow with isolated pools (interstitial)  COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel)  None  Plood Plant (Most Predominant per Bank)  L R  L R  L R  L R  Conservation Tilage  Urban or Industrial  Open Pasture, Row Crop  Mining or Construction  Comments  Moist Channel, isolated pools, no flow (intermittent)  Dry channel, no water (ephemeral)  COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):  None  10 2.0 3.0 3.0 5.5 3.0 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5.5 5	RIPARIAN ZONE AND FLOODPLA		
Stream Flowing	RIPARIAN WIDTH L B (Per Bank) Wide >10m Moderate 5-10m Narrow <5m None	FLOODPLAIN QUALITY (Most Predominant per Bank)  R  L  R  Mature Forest, Wetland  Immiture_Expest, Shrub or Old Field  Wetsidential, Park, New Field  Open Pasture, Row Crop	
None	Stream Flowing Subsurface flow with isolated pools (	Moist Channel, isolated pools, no flow (intermittent)	
	□ None □ ⊥	0 2.0 3.0	

	No QHEI Score (If Yes, Attach Completed QHEI form)	
DOWNSTREAM DESIGNATED U		
DWWH Name: Ice Creek	Distance from Evaluated Stream	
CWH Name:	Distance from Evaluated Stream	
EWH Name:	Distance from Evaluated Stream	
11.	MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.	
USGS Quadrangle Name: AS 16 h	NRCS Soil Map Page:NRCS Soil Map Stream Order:	
county: Law cence	Township/cay Coal Grave	
MISCELLANEOUS		
Base Flow Conditions? (Y/N):Y Da	ate of last precipitation: 10/20/20 Quantity: 0.15	
Photo-documentation Notes:		
levated Turbidity?(Y/N):/ Ca	anopy (% open):	
Nere samples collected for waterchemistr	try? (Y/N): Lab Sample # or ID (attach results):	
field Measures:Temp (°C) 14,5 Disso	solved Oxygen (mg/l) pH (S.U.) 8 , Z_ Conductivity (umhos/cm) /	
	e stream (Y/N) \(\frac{1}{2}\) If not, explain:	
s the sampling reach representative of the	e stream (Y/N) If not, explain:	
Additional comments/description of pollution	on impacts:	-
	BIOLOGICAL OBSERVATIONS	
	(Record all observations below)	
1	observed (if known);	
	_ Species observed (if known):	
	pecies observed (if known): Dusky	
equatic Macroinvertebrates Observed? (Y/	(N) Species observed (if known):	
omments Regarding Biology:		
DRAWING AND NARRAT	ATIVE DESCRIPTION OF STREAM REACH (This must be completed)	
	to the first over a first court for with a confunction and a parameters describing a fifty attenuable for a first	
Include important landmarks and	d other features of interest for site evaluation and a narrative description of the stream's location	
Include important landmarks and		
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	& Slope ESDF &	hle
	Slope ESDF DO RS	obble
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	Slope ESDE DORS	obble
Include important landmarks and	Slope ESDF DO RS	obble

	Extension 138 KV Line Rebuild Projec	
TE NUMBER 17 RIVER BASN - ENGTH OF STREAM REACH (#) 200 NATE 12/17/20 SCORER ATK		) = [ m ]
	- Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for	or Instruction
		-
REAM CHANNEL MODIFICATIONS:	NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT	OR NO RECOVE
. SUBSTRATE (Estimate percent of e	every type present). Check ONLYtwo predominant substrate TYPE boxes.	
(Max of 32). Add total number of signif	ficant substrate types found (Max of 8). Final metric score is sum of boxes A &  ERCENT TYPE PERCENT	Metric
BLDR SLABS [16 pts]	SET [3pt] 20	Points
BOULDER (>256 mm) [16 pts] _ BEDROCK [16 pts]	LEAF PACKWOODY DEBRIS [3 pts]	Substra
COBBLE (65-256 mm) [12 pts]	CLAY or HARDPAN [0 pt]	Max = 4
GRAVEL (2-64 mm) [9 pts]	MUCK [0 pts]	100
SAND (<2 mm) [6 pts]	ARTIFICIAL [3 pts]	12
Total of Percentages of Bidr Slabs, Boulder, Cobble, Bedrock _	O (A) (B) (	A+B
CORE OF TWO MOST PREDOMINATE SUB	STRATE TYPES: 6 TOTAL NUMBER OF SUBSTRATE TYPES:	
	e maximum pool depth within the 61 meter (200 feet) evaluation reach at the	Pool Dep
time of evaluation. Avoid plunge pools > 30 centimeters [20 pts]	s from road culverts or storm water pipes) (Check ONLY one box):	Max = 3
> 22.5 - 30 cm [30 pts]	< 5 cm [5pts]	115
> 10 - 22.5 cm [25 pts]	NO WATER OR MOIST CHANNEL [0pts]	त
COMMENTS	MAXIMUM POOL DEPTH (centimeters):	
BANK FULL WIDTH (Measuredas to	he average of 3 - 4 measurements) (Check ONLY one box):	Bankfu
> 4.0 meters (> 13") [30 pts] > 3.0 m - 4.0 m (> 9" 7"-13") [25 pts]	> 1.0 m - 1.5 m (> 3' 3" - 4' 8")[15 pts] ≤ 1.0 m (≤ 3' 3")[5 pts]	Width Max=3
> 1.5 m - 3.0 m (> 4'8" - 9' 7")[20 pts]		
	AVERAGE BANKFULL WIDTH (meters)	3 15
COMMENTS	AVERAGE BANKFULL WIDTH (meters)	
DIDADIAN ZONE AND EL COD	This information <u>must</u> also be completed  PLAIN QUALITY + NOTE: River Left (L) and Right (R) as looking downstre.	
		am.
L R (Per Bank)	FLOODPLAIN QUALITY (Most Predominant, per Bank)  L R  L R	
□□ Wide >10m	Mature Forest, Wetland Conservation Tillag	je .
Moderate 5-10m	Immature Forest, Shrub or Old Field Urban or Industrial	
Narrow <5m	Residential, Park, New Field Open Pasture, Ro	
None None	Fenced Pasture Mining or Constru	ction
COMMENTS		
FLOW REGIME (At Time of Eve Stream Flowing	aluation) (Check ONLY one box):  Moist Channel, isolated pools, no flow (inter-	mittant\
Subsurface flow with isolated po		macing
The state of the s	per 61 m (200 ft) of channel) (Check ONLY one box):	
□ None □	1.0 2.0 3.0	
0.5 STREAM GRADIENT, ESTIMATE	1.5 2.5 >3	

### ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): QHEI PERFORMED? Yes No QHEI Score (If Yes, Attach Completed QHEI form) DOWNSTREAM DESIGNATED USE(S) WWH Name: Ohio RIVE Distance from Evaluated Stream Distance from Evaluated Stream CWH Name: Distance from Evaluated Stream EWH Name: MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION. USGS Quadrangle Name: Cat letts burg NRCS Soil Map Page: \_\_\_\_\_ NRCS Soil Map Stream Order:\_\_\_\_\_ county: Lawrence Township/city: Log | Grove MISCELLANEOUS Elevated Turbidity?(Y/N): \_\_\_\_ Canopy (% open): \_\_ Were samples collected for water chemistry? (Y/N): \_\_\_\_\_ Lab Sample # or ID (attach results): \_\_\_\_\_ Field Measures:Temp (\*C) 3.5° Dissolved Oxygen (mg/l) \_\_\_\_\_ pH (S.U.) 6,8 Conductivity (umhos/cm) \_\_\_\_\_ is the sampling reach representative of the stream (Y/N) \_\_\_\_\_ If not, explain: \_\_\_\_\_ Additional comments/description of pollution impacts: Trash and parking lot/road runoff **BIOLOGICAL OBSERVATIONS** (Record all observations below) Fish Observed? (Y/N) M Species observed (if known):\_\_\_\_\_ Frogs or Tadpoles Observed? (Y/N) \_\_\_\_\_\_ Species observed (if known):\_\_\_\_\_ Salamanders Observed? (Y/N) \_\_\_\_\_ Species observed (if known);\_\_\_\_\_ Aquatic Macroinvertebrates Observed? (Y/N) Species observed (if known): Comments Regarding Biology: DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

hio	Primary Head	water Hab	itat Field Ev HHEI Score (			12
SITE NUMBER STORAW	Bellefonte Ex- LIBRIVER BASIN OF EACH (M) ZOO LAT, SCORER AJK	1:0	RIVER CODE	DRAMAGE	Project AREA (MIF)	(0,1n)
	ODIFICATIONS: NON			/		
(Max of 32) Add TYPE BLDR SLAB BOULDER ( BEDROCK I COBBLE (6) GRAVEL (2- SAND (<2 m	>256 mm) [16 pts] 16 pts] -256 mm) [12 pts] -64 mm) [9 pts] m) [6 pts]	ubstrate types for	CK ONLY two predominal (Max of 8). Final me SLT [3 pt] LEAF PACKWOODY FRE DETRITUS [3 pt CLAY or HARDPAN [ MUCK [0 pts] ARTIFICIAL [3 pts]	DEBRIS [3 pts]	Eboxes. fboxes A & B PERCENT  50  50  50  60  60  60  60  60  60  60	HHEI Metric Points Substra Max - 4
2. Maximum Poo	30 pts]	mum pool depth	gpm water pipes) (C 5 cm - 10 cm [16 pi < 5 cm [5pts] NO WATER OR MO	00 feet) evaluation heck ONLY one bots] IST CHANNEL [0]	reach at the ox)	Pool Dep Max = 3
> 4.0 meters (> 1 > 3.0 m - 4.0 m (	IDTH (Measuredas the ave [37] [30 pts] > 9 7"-13") [25 pts] > 4" 8" - 9" 7") [20 pts]	erage of 3 - 4 mee	> 1.0 m -1.5 m (> 3 ≤1.0 m (≤ 3 3")[5;	3" -4' 8")[15 pts		Bankfu Width Max=3
		This information	mustalso be comple		meteraj	
L R (Per Model Narro	AN ZONE AND FLOODPLAN  (AN WIDTH (Bank)  >10m  rate 5-10m  w <5m	FLOODPLA  R  Mature For	IOTE: River Left (L) and IN QUALITY (Most Prest, Wetland Forest, Shrub or Old Fix (Park, New Field)	d Right (R) as look dominant per Ban L R Con ald Urbs		rop
Stream Fit Subsurfac COMMEN	EGIME (At Time of Evaluation owing the flow with isolated pools (in TS I V)  TY (Number of bendarper 6	nterstitial) 1 m (200 ft) of ch	Moist Change	(, no water (epherone box).	, no flow (intermit meral)	eent)
	IENT ESTIMATE	Moderate (2 %100	2.5	to Severe	Severe (10	

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):	100
QHEI PERFORMED? Yes No QHEI Score (If Yes, Attach Completed QHEI form)	-
DOWNSTREAM DESIGNATED USE(S)  WWW Name: Little Toe Creek  Distance from Evaluated Stream	
CWH Name: Distance from Evaluated Stream	-
Distance from Evaluated Stream	
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.	
USGS Quadrangle Name: C4t   etts   b459 NRCS Soil Map Page:NRCS Soil Map Stream Order:	
county: Lawrence Townshipicity: Coal Grove	
MISCELLANEOUS	
Base Flow Conditions? (Y/N): \(\frac{1}{2}\) Date of last precipitation: \(\frac{17/70}{20}\) Quantity: \(\frac{0.29}{29}\)	
Photo-documentation Notes:	-
Elevated Turbidity?(Y/N): N Canopy (% open): 60%	
Were samples collected for water chemistry?(YIN): Lab Sample # or ID (attach results):	
Field Measures:Temp (*C) 3 Dissolved Oxygen (mg/l) pH (S.U.) 8,3 Conductivity (umhos/cm)	_
Is the sampling reach representative of the stream (Y/N) If not, explain;	
	_
Additional comments/description of pollution impacts:	-
	-
BIOLOGICAL OBSERVATIONS	
(Record all observations below)	
Fish Observed? (Y/N)/_ Species observed (if known):	-
Frogs or Tadpoles Observed? (Y/N) _ / Species observed (if known):	-
Salamanders Observed? (Y/N) Species observed (if known);	_
Aquatic Macroinvertebrates Observed? (Y/N) Species observed (if known):	
Comments Regarding Biology:	
DRAWING AND MADDATIVE DESCRIPTION OF STREAM DEACH (This must be completed)	-
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed) Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location	
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This foregoing document was electronically filed with the Public Utilities

**Commission of Ohio Docketing Information System on** 

5/27/2021 1:38:33 PM

in

Case No(s). 21-0111-EL-BLN

Summary: Notice Letter of Notification Application for the Bellefonte Extension 138 kV Line Rebuild Project electronically filed by Tanner Wolffram on behalf of AEP Ohio Transmission Company, Inc.