Letter of Notification for the Blackbird Temporary 138kV Extension Project

PUCO Case No. 25-0872-EL-BLN

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

Submitted by:
Ohio Power Company

November 3, 2025

LETTER OF NOTIFICATION

Ohio Power Company (AEP Ohio)

Blackbird Temporary 138kV Extension Project

4906-6-05 Accelerated Application Requirements

Ohio Power Company (the Company) provides the following information to the Ohio Power Siting Board (OPSB) in accordance with the accelerated application requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-05(B) General Information

B(1) Project Description

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

The Company is proposing the Blackbird Temporary 138kV Extension Project ("Project"), in Brown Township, Caroll County, Ohio. A customer has requested 138 kV service for a new distribution facility in Malvern, Ohio. To accommodate the customer, the Company will install a temporary hard tap off the existing Windsor-Canton 138 kV transmission line and install less than 0.2 mile of temporary 138 kV single circuit transmission line to the customer's facility. The Project will be built within a new 100-foot right-of way (ROW), with all easements being acquired by the customer. The Project is anticipated to be operated for up to twelve months, until a permanent service is installed, which will be filed under separate cover with the OPSB. The location of the Project is shown on Figure 1 in **Appendix A.**

The Project meets the requirements for a Letter of Notification (LON) as defined by Item 1(d)(ii) of Appendix A to Ohio Administrative Code Section 4906-1-01, *Application Requirement Matrix for Electric Power Transmission Lines*:

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

The Project has been assigned Case No. 25-0872-EL-BLN.

B(2) Statement of Need

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

An existing customer has requested additional service to support an estimated projected load of 20MW. In order to support the customer and to provide continuous service throughout the process, both temporary and permanent work will be necessary. The temporary work involves installing a hard tap along the Windsor-Canton 138 kV line and installing less than 0.2 mile of 138 kV transmission line to the customer's facility, which is the subject of this application. A single structure on the temporary solution will be part of the permanent solution; however, additional permanent work will be necessary and will be filed separately with OPSB.

Failure to move forward with the overall project will result in the inability to serve the customer's new load requirements.

The need and solution for the overall project were presented at PJM and reviewed with stakeholders at meetings on July 18, 2025, and September 19, 2025, respectively. A PJM supplemental number has not been assigned to the Project but will be provided to OPSB once assigned. This Project was not included in the Company's Long Term Forecast Report due to the project solution not being known at the time of submittal. The permanent solution will be included in the Company's 2026 Long Term Forecast Report Submittal.

B(3) Project Location

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

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

B(4) Alternatives Considered

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

The Company conducted a high-level conceptual alternatives analysis, which included reviewing suitable alternative hard tap locations outside of the current Project location. The alternative would require taping into the East Sparta - June Road 69 kV Transmission Line, which is approximately 0.8 miles away from the customer's proposed development and would require significant 69 kV upgrades to accommodate the load. Based on the customer's proposed development and existing facilities in the area, the proposed location of the Blackbird Temporary 138kV Extension Project is the most suitable location for the Project. The Project will not require impacts to any delineated wetland or streams. Tree clearing will be required, with an estimated 1.1 acres of trees to be cleared. However, the location of the Project minimizes impacts to the community and the environment, while considering the engineering

and construction needs of the customer. The Project also represents the most suitable location and most appropriate solution for meeting the Company's and customer's needs.

B(5) Public Information Program

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

The 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 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 (http://aeptransmission.com/ohio/) 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

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

Construction of the Project is planned to begin in January 2026 with an anticipated in-service date of for temporary service in March 2026.

B(7) Area Map

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

Figure 1, in **Appendix A**, identifies the location of the Project area on a United States Geological Survey 1:24,000 Malvern quadrangle map. **Appendix A**, Figure 2 displays the Project components on a 2024 aerial photograph.

B(8) Property Agreements

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

A list of properties required for the Project are provided in Table 1, below.

Table 1 – Property Agreements

Property Parcel Number	Agreement Type	Easement or Option Obtained (Yes/No)
03-0002597.000	Temporary, Permanent, Permanent access, Temporary access, and Exclusive easement	No

All easements are to be acquired by the customer. Should the Company need to acquire easements, the easement form exhibits provided in **Appendix C**, which represents the minimum rights the Company would require in order to construct, operate, and maintain these facilities, would be used.

B(9) Technical Features

Describe the following information regarding the technical features of the project:

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

Transmission Lines

The Project is anticipated to include the following:

Voltage:	138 kV
Conductors:	556.5 KCM 26/7 ACSR "Dove" (jumper) Yukon ACSS TW (permanent)
Shield Wire:	7#8 Alumoweld x 2
Insulators:	Polymer
ROW Width:	100 feet
Structure Type:	One (1) Single Circuit Wood 3-Pole Dead-End Structure (guyed) (temporary) One (1) Single Circuit Steel 3-Pole Dead-End with Anchor Cage Foundation (permanent)

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.

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

B(9)(b)(i) Calculated electric and magnetic field strength levels at one meter above ground under the lowest conductors and at the edge of the right-of-way for:

i) Calculated Electric and Magnetic Field Levels

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

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

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.

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

B(9)(c) Project Cost

The estimated capital cost of the project.

The cost estimate for the Project, which is comprised of applicable tangible and capital costs, is approximately $827,400 using a Class 4 estimate. The Customer is responsible for 95% of the cost of the Project. The remaining Project cost, pursuant to the PJM Open Access Transmission Tariff ("OATT"), will be recovered in the Ohio Power Company's FERC formula rate (Attachment H-14 to the PJM OATT) and allocated to the AEP Zone.

B(10) Social and Ecological Impacts

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

B(10)(a) Land Use

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

The Project area is located east of Krone Rd NW in Brown Township, northwest Carroll County, Ohio. The Project is not located in any incorporated places. The closest incorporated place to the Project is the village of Waynesburg, Ohio, located approximately 2 miles west.

The Project area consists of rural, agricultural, and forested areas. There are no known parks, wildlife management areas, or nature preserve lands within 1,000 feet of the Project. An aerial photograph of the Project vicinity is provided as Figure 2. The Project anticipates the need to clear approximately 1.1 acres of forested land. There is one residential property with an outbuilding in an adjacent parcel to the south greater than 100 feet from the Project area. All other adjacent parcels are rural, agricultural, or forested.

B(10)(b) Agricultural Land

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

The Project area vegetative communities consist primarily of woodlands, old field, and scrub-shrub. Approximately 0.02 acres of agricultural land is located within the south portion of the project area. Based on data received from the Carroll County Auditor's office on September 26 and 30, 2025, there are no agricultural district parcels within the Project area.

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.

Prior to the field investigation, a literature review was conducted for the Project. From this review, it was identified that portions of the Project had been previously surveyed for archaeological resources. In addition, no known cultural resources were recorded within the Project footprint. A Phase I archaeological survey was conducted within the remaining portions of the Project footprint that had not been previously surveyed. Using a combination of visual inspection, photographic documentation, and shovel test excavations, no new archaeological sites were identified. Also, no additional archaeological survey was recommended.

The field survey also identified two architectural resources that were 50 years or older within the architectural Area of Potential Effect (APE). Both of these resources were recommended not eligible for listing in the National Register of Historic Places (NRHP).

The results of the cultural resources survey were submitted to the State Historic Preservation Office ("SHPO") in a report on August 15, 2025. The SHPO responded with two letters on September 13, 2025, addressing archaeological and above ground resources separately. The letter pertaining to archaeological resources stated that the Project, as proposed, will have no effect on historic properties, see **Appendix D**. The letter pertaining to historic above ground resources concurred that the two architectural resources 50 years or older within the APE were not eligible for NRHP listing, and that the Project would have a no effect on historic properties (see **Appendix D**).

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

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

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

Table 2 – Anticipated Permits

Permit/Authorization/Coordination	Agency	Date
Federally Listed Endangered Species Review	U.S. Fish and Wildlife Service (USFWS)	A USFWS technical assistance letter was issued on 8/1/2025 (**Appendix D**).
Environmental Review (State T&E Species Consultation and Clearance)	Ohio Department of Natural Resources (ODNR) Office of Real Estate	An ODNR consultation letter was issued on 8/19/2025 **(Appendix D).**
Cultural Resources Review	Ohio Historic Preservation Office (OHPO)	The OHPO issued two concurrence letters for the Project. One was for archaeology, and the other was for above ground resources. Both letters were issued on 9/13/2025 (**Appendix D).**
Road Use Maintenance Agreement (RUMA)	Carroll County	In progress

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

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

On July 22, 2025, coordination letters were submitted to the United States Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Program (ONHP) and Division of Wildlife (DOW), seeking an environmental review of the Project for potential impacts to state and/or federally protected species. ODNR and USFWS provided responses on August 25, 2025, and August 1, 2025, respectively. Copies of the agencies' responses are presented in **Appendix D.**

Table 5, in **Appendix E** lists the federal and state threatened or endangered species in the Project area.

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

B(10)(f) Areas of Ecological Concern

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

The Company's consultant conducted a wetland and waterbody delineation in the Project area on June 24, 2025, and July 18, 2025, and prepared an Ecological Survey Report, which is provided in **Appendix E.** The delineation study identified one PEM/PSS wetland complex located southeast of the limits of disturbance and one PEM/PSS/PFO wetland complex located northwest on the Project area, totaling 1.2 acres in size within the Project area. Additionally, five streams totaling 622 linear feet were delineated within the Project area. Four of the streams are located northwest of the Project limits of disturbance, and one stream is located southeast of the Project limits of disturbance. The Project is not anticipated to impact any wetlands or streams. Best management practices will be utilized to protect wetland habitat outside of the Project area.

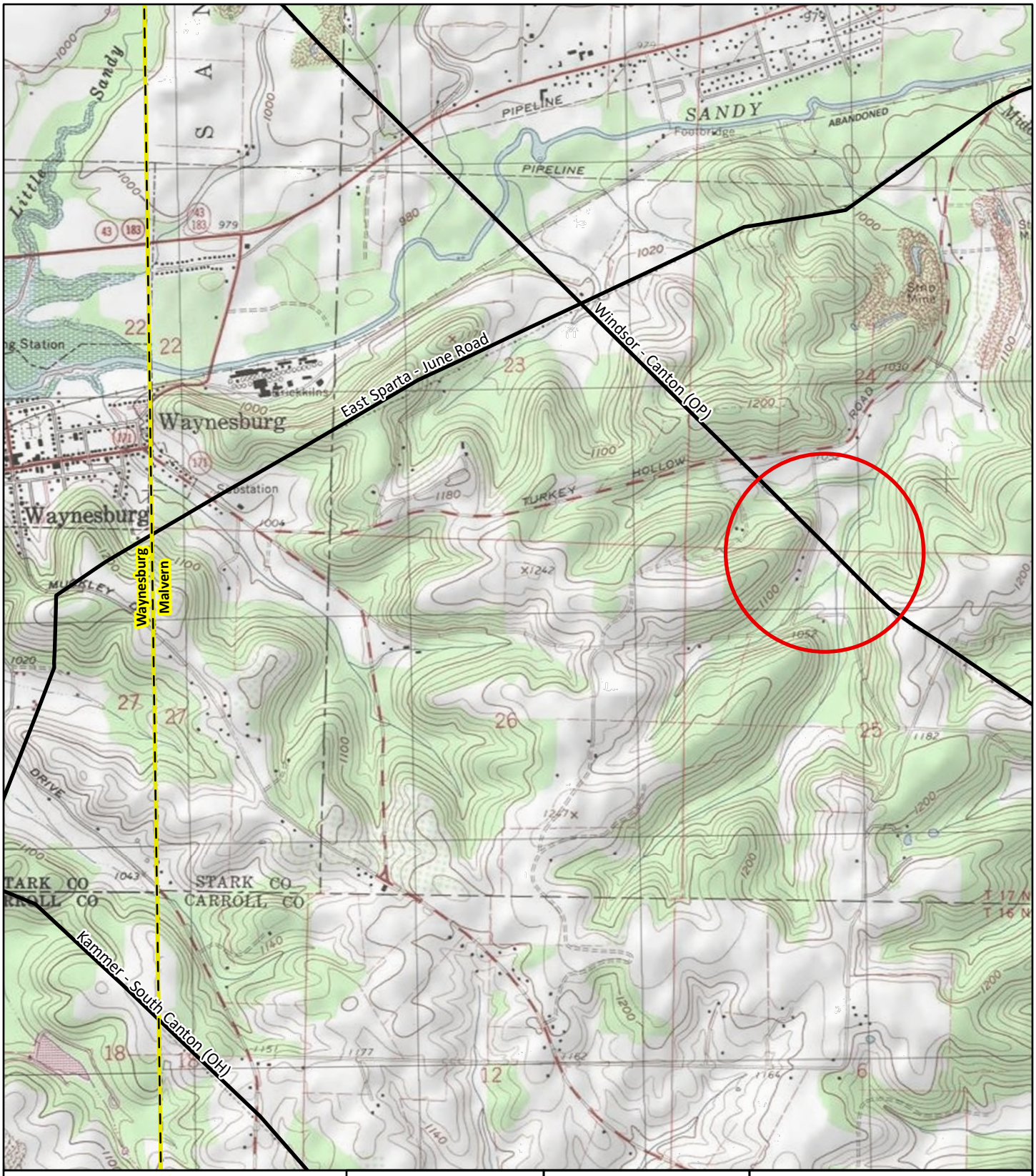
There are no national, state, or local parks or forests, designated or proposed wilderness areas, national or state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries located within the Project area or the potential disturbance area of the Project. There are also no Federal Emergency Management Agency (FEMA)-designated floodplains (FIRM panel 39019C0037C).

B(10)(g) Unusual Conditions

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

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

Appendix A Project Maps


Sandy
Little
PIPELINE
SANDY
Footbridge
ABANDONED
PIPELINE
Windsor - Canton (OP)
East Sparta - June Road
Waynesburg
Waynesburg
Substation
Waynesburg - Malvern
TURKEY
HOLLOW
ROAD
DRIVE
STARK CO
CARROLL CO
STARK CO
CARROLL CO
Kammer - South Canton (OH)
Project Location
US Topographic Lines
Existing Transmission Line
Data Sources: AEP, USGS 7.5' Topographic Quadrangle (Malvern)
Coordinate System and Datum:
NAD 83 State Plane Ohio North, Feet
October 24, 2025
FIGURE 1
TOPOGRAPHIC OVERVIEW
AEP OHIO
An AEP Company
BOUNDLESS ENERGY
Blackbird Temporary 138kV Extension Project
0
1,000
2,000
3,000
Feet

Proposed Centerline
Proposed 100 ft Right of Way
Proposed Route
Existing Transmission Line
Parcel Boundary

Data Sources: AEP, ESRI World Imagery Service (2024)

Coordinate System and Datum:
NAD 83 State Plane Ohio North, Feet

October 22, 2025

FIGURE 2
AERIAL MAP

AEP OHIO
An AEP Company
BOUNDLESS ENERGY™

Blackbird Temporary 138kV Extension Project

0 100 200 300
Feet

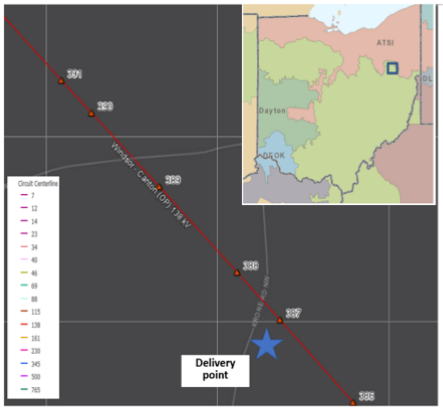
Appendix B PJM Solution

AEP Transmission Zone M-3 Process
Windsor, OH

Need Number: AEP-2025-OH004
Process Stage: Solution Meeting SRRTEP-W - 09/19/2025
Previously Presented: Need Meeting 07/18/2025

Project Driver: Customer Service
Specific Assumption References:
AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12).

Problem Statement:
A customer has requested a new 138 kV delivery point in Malvern, Ohio. The anticipated load is 20 MW and delivery is requested by 02/18/2027.

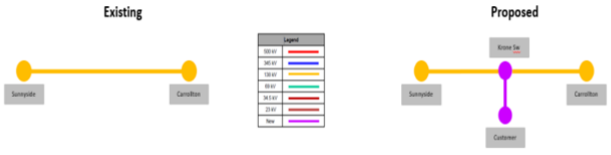


AEP Transmission Zone M-3 Process
Windsor, OH

Need number(s): AEP-2025-OH004
Process Stage: Solution Meeting SRRTEP-W - 09/19/2025
Proposed Solution:
Sunnyside - Carrollton 138 kV cut-in: Cut into the Sunnyside - Carrollton 138 kV circuit to install new phase over phase switch to the customer substation. Estimated Cost: $0.908 M
Customer Extension: Build ~0.1-mile extension from the switch structure to the customer substation. Estimated Cost: $0.446 M
Krone Switch Install: Install phase over phase switch cut into the Sunnyside - Carrollton 138 kV circuit. Estimated Cost: $1.101 M

Transmission Cost Estimate: $2.455 M
Alternatives Considered:
Serve customer from the 69kV line approximately 0.75 miles away. This option would require significant 69 kV upgrades to accommodate load.

Projected In-Service: 02/18/2027
Project Status: Scoping



Appendix C Property Form Easement

Line Name:
Line No.: Easement No.:

EASEMENT AND RIGHT OF WAY

On this ___ day of_____, 2025, in consideration of Ten and NO/100 Dollars ($10.00), and other valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and the covenants hereinafter set forth, _____, whose address is_____, ("Grantor"), whether one or more persons, hereby grants, sells, conveys, and warrants to , a(n) corporation, a unit of American Electric Power, whose principal business address is 1 Riverside Plaza, Columbus, Ohio 43215, ("AEP") and its successors, assigns, lessees and tenants a permanent easement and right of way ("Easement"), for electric transmission, distribution, and communication lines and appurtenant equipment and fixtures, being, in, on, over, under, through and across the following described lands of the Grantor, situated in the State of _____, _____ County, ___ Quarter section, Section ___, Township No. ___, Range No. ___.

Grantor claims title by _____ Deed, recorded in Volume ___, Page ___, recorded on MM/DD/YYYY; in the _____ County Recorder's Office.

Auditor/Key/Tax Number: _____

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

GRANTOR FURTHER GRANTS AEP THE FOLLOWING RIGHTS:

The right, now or in the future, to construct, reconstruct, operate, maintain, alter, improve, extend, inspect and patrol (by ground or air), protect, repair, remove, replace, upgrade and relocate within the Easement Area, poles, towers, and structures, made of wood, metal, concrete or other materials, and crossarms, guys, anchors, grounding systems, and all other appurtenant equipment and fixtures, and to string conductors, wires and cables; together with the right to add to said facilities from time to time, and the right to do anything necessary, useful or convenient for the enjoyment of the Easement herein granted.

The right, in AEP's discretion, now or in the future, to cut down, trim, remove, and otherwise control, using herbicides or tree growth regulators or other means, any and all trees, overhanging branches, vegetation or brush situated within the Easement Area. AEP shall also have the right to cut down, trim or remove trees situated on lands of Grantor which adjoin the Easement Area when in the opinion of AEP those trees may endanger the safety of, or interfere with the construction, operation or maintenance of AEP's facilities or ingress or egress to, from or along the Easement Area.

The right of unobstructed ingress and egress, at any and all times, over, across and along and upon the Easement Area, and across the adjoining lands of Grantor as may be necessary for access to and from the Easement Area for the above referenced purposes.

THIS GRANT IS SUBJECT TO THE FOLLOWING CONDITIONS:

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

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

The failure of AEP to exercise any of the rights granted herein, or the removal of any facilities from the Easement, shall not be deemed to constitute an abandonment or waiver of the rights granted herein.

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

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

Any remaining space on this page left intentionally blank. See next page for signatures.

N WITNESS WHEREOF, the Grantor has executed this Easement effective the day, month and year first above written.

GRANTOR

_____
Print Name: _____

State of _____ §
§
County of _____ §

The foregoing instrument was acknowledged before me this _____ day of _____, 2025, by _____.

_____
Notary Public
Print Name: _____
My Commission Expires: _____

This instrument prepared by Marland L. Turner, Senior Counsel - Real Estate, American Electric Power Service Corporation, 1 Riverside Plaza, Columbus, OH 43215 for and on behalf of **Ohio Power Company**, a unit of American Electric Power.

When recorded return to: American Electric Power - Transmission Right of Way, 8600 Smiths Mill Road, New Albany, OH 43054

Appendix D Agency Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

August 1, 2025

Project Code: 2025-0116319

Dear Zoe Horns:

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

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

Seasonal Restrictions for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. If bridges or culverts will be impacted, we recommend reviewing Appendix K in the most recent "Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines" to determine if the bridge/culvert may be suitable roost habitat. We recommend impacts to suitable bridges and culverts only occur from October 1 and March 31. These seasonal restrictions are recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

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

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

On December 12, 2024 the Service proposed to list the monarch butterfly (*Danaus plexippus plexippus*) as threatened under the ESA. Monarch butterflies are found throughout Ohio and some populations migrate vast distances across multiple generations each year. Many monarchs fly between the U.S., Mexico and Canada – a journey of over 3,000 miles. Monarch populations have declined significantly in recent years. Threats include habitat loss – particularly the loss of milkweed, the monarch caterpillar's sole food source – and mortality resulting from pesticide use. The Service recommends the following actions to maintain habitat and avoid impacts to monarchs in Ohio: revegetate disturbed areas with native plant species including nectar-producing plants and milkweed endemic to the area; limit mowing monarch habitat from March 15 to August 31 when monarchs are breeding and from September 1 to October 31 when large numbers of monarchs are migrating; and avoid the use of pesticides and herbicides in and near monarch habitat.

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

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best

management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

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

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

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

Sincerely,

Erin Knoll
Field Office Supervisor

cc: Matthew.Stooksbury@dnr.ohio.gov
Eileen.Wyza@dnr.ohio.gov

Department of Natural Resources
ohiodnr.gov

Mike DeWine, *Governor*
Jim Tressel, *Lt. Governor*
Mary Mertz, *Director*

Office of Real Estate & Land Management
Tara Paciorek - Chief
2045 Morse Road – E-2
Columbus, Ohio 43229-6693

August 19, 2025

Zoe Horns
AECOM
3101 Wilson Boulevard, Suite 900
Arlington, Virginia 22201

Re: 25-1105_AEP Krone SW Fiber Cable Extension

Project: The proposed project involves adding fiber cable between four existing structures, one new structure to avoid an existing tower and a second new structure that connects underground to a new switch.

Location: The proposed project is located in Brown Township, Carroll 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: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

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.

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 vicinity of records for the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species. Because presence of state endangered bat species has been established in the area, summer tree clearing is not recommended, and additional summer

surveys would not constitute presence/absence in the area. However, limited summer tree clearing inside this buffer may be acceptable after further consultation with DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

In addition, the entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in clusters of dead leaves on tree limbs. However, these species are also dependent on the forest structure surrounding roost trees. The DOW recommends tree and/or tree limb clearing only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with a Diameter Breast Height (DBH) ≥ 20" if possible.

For every project, the DOW also recommends that a winter bat habitat assessment is conducted to determine if potential hibernacula are present within the project area. This is to limit possible disturbances that seasonal tree clearing and/or subsurface work (e.g., trenching, blasting, etc.) may cause to hibernating bats. Potential hibernacula include rocky outcroppings, caves, and underground mines. Direction on how to conduct winter habitat assessments can be found in the joint guidance OHIO DIVISION OF WILDLIFE AND U.S. FISH AND WILDLIFE SERVICE (OH-FIELD OFFICE) JOINT GUIDANCE FOR BAT SURVEYS. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile permanent tree clearing buffer around the hibernaculum entrance. Limited summer or winter tree clearing may be acceptable after consultation with the DOW. If a habitat assessment for projects involving subsurface disturbance finds that a potential hibernaculum is present within 5 miles of the project area, please consult with Eileen Wyza for project recommendations. If no tree clearing or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

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

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

Water Resources: The Division of Water Resources has not conducted a project specific review and/or comments, however, the guidance provided below should be reviewed by the Environmental Review applicant for applicability on this project and subsequent compliance.

If the subject project is in a floodplain regulated by the Federal Emergency Management Agency (FEMA), the local floodplain administrator should be contacted concerning the possible need for any floodplain

permits or approvals. The FEMA National Flood Hazard Layer (NHFL) Viewer website can be utilized to see if the project is in a FEMA regulated floodplain. If the project is not in a FEMA regulated floodplain, then no further action is required.

Ohio Revised Code (ORC) Section 1521.16 mandates that any owner of a property or a facility that has the capacity of withdrawing 100,000 gallons per day (gpd) of water from groundwater, surface water, or both must register with the Division of Water Resources' Water Withdrawal Facilities Registration (WWFR) Program and report their withdrawals annually.

Additional coordination may be required depending on the location of the withdrawal and consumptive use. Restrictions or permitting may be required for:

- New or increased consumptive use of water averaging 2 million gallons per day (mgd) within 30 days within the Ohio River basin.
- New or increased withdrawal and consumptive water use in the Lake Erie watershed averaging 1 million gallons per day (mgd) or more in 90 days.
- New or increased water withdrawal directly from Lake Erie averaging 2.5 million gallons per day (mgd) or more in 90 days.
- Diversion or movement of water across the Ohio River and Lake Erie basin divide.

If the project does not involve activities that are subject to water withdrawal regulatory requirements as described above, then no further action is required. For more information, visit the Water Inventory & Planning website.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew (Environmental Services Administrator) at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Expiration: *ODNR Environmental Reviews are typically valid for 2 years from the issuance date. If the scope of work, project area, construction limits, and/or anticipated impacts to natural resources have changed significantly from the original project submittal, then a new Environmental Review request should be submitted.*

In reply, refer to
2025-CAR-66061

September 13, 2025

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

RE: Krone Switch, Blackbird Extension, Tidd-Sunnyside Cut-in Project, Carroll County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on August 15, 2025, regarding the proposed Krone Switch, Blackbird Extension, Tidd-Sunnyside Cut-in Project located in Brown Township, Carroll County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board (OPSB) rules for siting this project (OAC 4906-4 & 4906-5). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Cultural Resource Management Investigations for the Approximately 7.0 ha (17.2 ac) Krone Switch Blackbird Extension, Tidd-Sunnyside Cut-in Project in Brown Township, Carroll County, Ohio* by Ryan J. Weller and Scott McIntosh (Weller & Associates, Inc. 2025). A literature review, visual inspection, photographic documentation, and shovel test unit excavations were completed as part of these investigations. Areas of obvious disturbance and steep slope were noted within the project area. Portions of the project had been previously surveyed; however, there were no documented archaeological sites within the project area. No new archaeological sites were identified during the current investigations. No additional archaeological survey is recommended. Aboveground resources identified during these investigations are being coordinated separately.

The following comments pertain to the *Cultural Resource Management Investigations for the Krone Fiber/Blackbird Temporary Work Project in Brown Township, Carroll County, Ohio* by Ryan J. Weller (Weller & Associates, Inc. 2025). A literature review was completed as part of these investigations. The entirety of the project has been investigated by previous surveys (Weller 2017; Weller and McIntosh 2025). There are no known archaeological sites within the project area. No additional archaeological survey is recommended.

Based on the information provided, it is our office's opinion that the project, as proposed, will have no effect on historic properties. No further coordination with this office is necessary, unless the project

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

Sincerely,

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

RPR Serial Nos. 1110406 and 1110408

"Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs."

In reply, please refer to:
2025-CAR-66061

September 13, 2025

Ryan Weller
Weller & Associates, Inc.
1395 W. Fifth Ave.
Columbus, OH 43212
rweller@wellercrm.com

RE: Section 106 Review: Krone Switch, Blackbird Extension, Tidd-Sunnyside Cut-in Project in Brown Township, Carroll County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on August 15, 2025, regarding the proposed Krone Switch, Blackbird Extension, Tidd-Sunnyside Cut-in Project in Brown Township, Carroll County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the *Phase I Cultural Resource Management Investigations for the Approximately 7.0 ha (17.2 ac) Krone Switch, Blackbird Extension, Tidd-Sunnyside Cut-in Project in Brown Township, Carroll County, Ohio* (Weller & Associates, Inc. 2020). The literature review did not identify any OHIs, National Register of Historic Places (NRHP)-listed properties, DOEs, or OGS cemeteries in the study area. The field survey identified a total of two (2) architectural resources 50 years of age or older in the architectural Area of Potential Effect (APE). It is Weller's recommendation that none of the resources in the APE are eligible for listing in the National Register of Historic Places. Our office agrees with Weller's recommendations of eligibility. Therefore, we agree that there will be no effect to historic resources as a result of the project. Please note that this determination of effects is for above-ground resources only. The archaeological component of the project is being coordinated separately.

If you have any questions, please contact me at arosenow@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Abigail Rosenow

Abigail Rosenow
Project Reviews Manager Architecture
Resource Protection and Review
State Historic Preservation Office

"Please be advised that this is a Section 106 decision. This review decision may not extend to other SHPO programs."

RPR Serial No: 1110407

Appendix E Ecological Survey Report

KRONE SWITCH INSTALL, KRONE BLACKBIRD EXTENSION, AND KRONE TIDD SUNNYSIDE

CARROLL COUNTY, OHIO

ECOLOGICAL REPORT

Prepared for:
American Electric Power Ohio Transmission Company
8500 Smiths Mill Road
New Albany, Ohio 43054

Prepared by:

525 Vine Street, Suite 1900
Cincinnati, Ohio 45202

Project #s: 60757664, 60757802, 60757803

August 2025

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1.0 INTRODUCTION

American Electric Power, Ohio Transmission Company (AEP Ohio Transco) is proposing the Krone Projects (Project), which is composed of the Krone Switch Install, Krone Tiddy Sunnyside, and Krone Blackbird Extension in Carroll County, Ohio (OH). The purpose of the Krone Switch Install is to install a phase over phase switch with auto sectionalizing on the Sunnyside-Carrolton 138kV circuit located on the existing Windsor - Canton 138kV Transmission Line, in Carroll County, OH. The purpose of the Krone Tidd Sunnyside component is to install a tie-in the Sunnyside-Carrolton 138kV circuit into the existing Windsor - Canton 138kV Transmission Line between Structures 387 and 398. The purpose of the Krone Blackbird Extension component is to install 0.01-mile 138kV transmission line between the proposed switch and the customer delivery point. These projects are located on the Malvern, OH, United States Geological Survey (USGS) 7.5-minute topographical quadrangle as displayed on the Project Overview (**Figure 1**).

The purpose of the field survey was to assess the presence of wetlands and possible “waters of the United States” (WOTUS) that occur within the proposed Project Survey Area. Secondarily, land uses were also recorded to classify and characterize potential habitat for threatened and endangered species. This report will be used to assist AEP Ohio Transco’s efforts to identify potential WOTUS as well as threatened and endangered species habitat present within the proposed Project Survey Area to avoid or minimize impacts during construction activities.

2.0 METHODOLOGY

The field survey was completed within the Project Survey Area totaling approximately 17.14 acres, which encompasses the proposed work areas. Prior to conducting field surveys, digital United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data, United States Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) data, USGS National Hydrography Dataset (NHD), Federal Emergency Management Agency (FEMA) 100-year floodplain data, and USGS 7.5-minute topographic maps were reviewed to identify the occurrence and location of potential wetland areas and/or streams.

Field survey activities included recording the physical boundaries of observed water features using sub-meter capable EOS Arrow Global Positioning System (GPS) units in conjunction with the ArcGIS Field Maps application on iPad tablets. The GPS data was imported into ArcMap Geographic Information System (GIS) software, where the data was reviewed, edited for accuracy, and compiled in a format suitable for transfer and use by AEP Ohio Transco. Water features were delineated and assessed based upon the appropriate procedures detailed below. Land uses observed within the Project Survey Area were assigned a general classification based upon the principal land characteristics and vegetative cover of the location.

2.1 WETLAND DELINEATION

The Project Survey Area was evaluated according to the procedures outlined in the United States Army Corps of Engineers (USACE) *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE, 2012).

During field survey activities, AECOM utilized the routine on-site delineation method described in the 1987 manual and supplement that consisted of a pedestrian site reconnaissance, including identifying the vegetative communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. If a wetland was identified, AECOM completed a USACE Wetland Determination Data Form (USACE Data Form) within each unique wetland habitat to serve as a representative of the wetland hydrology, vegetative community, and soil characteristics. Adjacent to each wetland complex, AECOM completed an additional USACE Data Form as a representative of the upland community.

2.1.1 WETLAND CLASSIFICATION

Wetlands identified in the field were classified based on the naming convention found in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin *et al.*, 1979). The unique wetland habitats were classified as palustrine emergent (PEM), palustrine forested (PFO), palustrine unconsolidated bottom (PUB), palustrine scrub-shrub (PSS), or other classifications for some wetlands. Multiple Cowardin classifications may be present where more than one classification's vegetation is dominant (vegetation type covers 30 percent or more of the substrate). Where multiple Cowardin classifications are present, the Cowardin classification of the plants that constitute the uppermost layer of vegetation having 30% or greater coverage is used for the classification.

2.1.2 WETLAND ASSESSMENT

Each delineated wetland was assessed following the Ohio Environmental Protection Agency (OEPA) *Ohio Rapid Assessment Method for Wetlands v. 5.0* (ORAM) (Mack, 2001). Wetland assessments utilized the 10-page ORAM form, providing a final Category rating for each wetland.

2.2 STREAM ASSESSMENT

Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high-water mark (OHWM). The USACE defines the OHWM as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE, 2005).

2.2.1 OEPA PRIMARY HEADWATER HABITAT ASSESSMENT

Stream assessments were conducted using the methods described in the OEPA's *Methods for Assessing Habitat in Flowing Waters*: *Using OEPA's Qualitative Habitat Evaluation Index (QHEI)* (Rankin, 2006) and in the OEPA's *Field Methods for Evaluating Primary Headwater Streams in Ohio* (OEPA, 2020). Streams associated with watershed area less than or equal to 1.0 square mile (259 hectares), and a maximum depth of water pools equal to or less than 15.75 inches were evaluated utilizing the Headwater Habitat Evaluation Index (HHEI) methodology and all other streams assessed using the QHEI methodology. Flow regime (ephemeral, intermittent, perennial) was determined by the appropriate stream assessment score per OEPA manuals (OEPA, 2020) and by AECOM's professional opinion.

Streams assessed in the Project Survey Area were reviewed for existing OEPA Aquatic Life Use Designations per OEPA's Water Quality Standards (OAC Chapter 3745-1). Those without an existing use designation were assigned a provisional aquatic life use designation based upon habitat assessment results (Rankin, 1989; OEPA, 2020).

2.2.2 OEPA 401 WATER QUALITY CERTIFICATION FOR NATIONWIDE PERMIT ELIGIBILITY

The OEPA has designated each watershed in the state on based on whether it may be ineligible for coverage under the OEPA's 401 Water Quality Certification (WQC) for Nationwide Permits (OEPA, 2017). Mapping provided by the OEPA illustrates the eligibility of streams in the area to fall under a Nationwide Permit for 401 certification or if an individual state WQC needs to be applied for. Impacts to streams within each watershed would then have eligibility for 401 WQC determined by the watershed category. The three categories are defined as:

Eligible: Streams within the watershed are eligible for coverage under the OEPA's water quality certification for the Nationwide Permits if all other general and regional special terms and conditions are met.

Ineligible: Activities affecting high quality streams and undesignated streams draining directly to high quality streams, as represented in the map, must undergo an individual 401 Water Quality Certification review process.

Possibly Eligible: Additional field screening procedures are required for streams in the watershed to determine appropriate eligibility. Activities affecting undesignated streams within those HUC12 watersheds that do not directly but eventually drain into high quality waters, might be eligible for coverage under the OEPA's 401 Water Quality Certification for Nationwide Permits depending on the results of a field screening assessment. The procedures for determining individual stream eligibility in this scenario are specified in Appendix D "Stream Eligibility Determination Process" of the OEPA Ohio State Water Quality Certification of the 2017 Nationwide Permit Reauthorization.

2.2.3 UPLAND DRAINAGE FEATURES

An upland drainage feature (UDF) is a non-jurisdictional drainage that does not meet the criteria of either a jurisdictional stream or a wetland. A UDF generally lacks an OHWM (USACE, 2005) and are equivalent to a swale or an erosional feature as described by the USACE: “generally shallow features in the landscape that may convey water across upland areas during and following storm events. Swales usually occur on nearly flat slopes and typically have grass or other low-lying vegetation throughout the swale” (USACE, 2005).

A roadside ditch may also be documented as a UDF if it meets the “not potentially jurisdictional” characterization as described in the Office of Environmental Services *Roadway Ditch Characterization Flowchart* (Ohio Department of Transportation, 2014). This would include a ditch that originates entirely within the roadway right-of-way, has a seasonal flow regime, was not constructed to drain a wetland, and does not have hydrophytic vegetation extending more than an insignificant amount beyond its original configuration.

In addition, UDF’s (including swales, ditches, and other erosional features) are generally not WOTUS except in certain circumstances, such as relocated streams.

2.3 RARE, THREATENED, AND ENDANGERED SPECIES

AECOM conducted a threatened and endangered species review and general field habitat surveys within the Project Survey Area. AECOM submitted requests to the Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section and the USFWS Ohio Ecological Services Field Office soliciting comments on the proposed Project. Agency-identified species of concern and available species-specific information was reviewed to identify the various habitat types that listed species are known to inhabit.

AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys as part of assessing potential impacts to threatened and endangered species. Land uses within the Project Survey Area were assigned a general classification based upon the principal land characteristics and vegetative cover as observed during the field surveys.

AECOM conducted a desktop assessment of the Project Survey Area and a quarter-mile buffer around it to identify potentially occurring winter bat hibernaculum that may be present near the Project which is in **Appendix A**. This assessment was conducted by reviewing data on mining activity and karst geology from the ODNR Division of Mineral Resources and USGS websites.

3.0 RESULTS

AECOM ecologists walked the Project Survey Area to conduct the wetland delineation, stream assessment and habitat survey on June 24, 2025, and July 18, 2025. During the delineation within the Project Survey Area, AECOM identified two wetlands (one PEM/PSS/PFO complex and one PEM/PSS complex), five streams (two perennial, two intermittent, and one ephemeral), and one upland drainage feature. The representative wetland data forms as well as photo documentation are provided as **Appendix B.**

3.1 WETLAND DELINEATION

3.1.1 PRELIMINARY SOILS EVALUATION

According to the USDA/NRCS Web Soil Survey, a total of seven soil map units were identified within the Project Survey Area. Of those, one soil map unit was hydric and three contained hydric inclusions. Soils indicated as having hydric inclusions are not predominately hydric soils and hydric soils are more likely to be found in topographic settings. **Table 1** below provides a detailed overview of all soil series and soil map units present within the Project Survey Area. Soil map units located in the Project Survey Area and vicinity are shown on **Figure 2**.

TABLE 1: SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE PROJECT SURVEY AREA

Soil Series	Map Unit Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Fitchville	FcB	Fitchville silt loam, 3 to 8 percent slopes	Terraces	Yes*	Sebring (5%)
Glenford	GfB	Glenford silt loam, 3 to 8 percent slopes	Terraces	Yes*	Sebring (5%)
	GnC	Glenford silt loam, 8 to 15 percent slopes	Terraces	No	NA
Holly	Ho	Holly silt loam, ponded	Floodplains	Yes	Holly (90%) Flood pool areas (3%)
Orrville	Or	Orrville silt loam, 0 to 3 percent slopes, occasionally flooded	Floodplains	Yes*	Melvin (5%)
Westmoreland	WkC	Westmoreland silt loam, 8 to 15 percent slopes	Hills	No	NA
	WkE	Westmoreland silt loam, 25 to 35 percent slopes	Hills	No	NA

Yes* = Hydric inclusion present

3.1.2 NATIONAL WETLANDS INVENTORY MAP REVIEW

According to NWI data covering the Project location, the Project Survey Area contains three NWI mapped wetlands. The location of NWI mapped features identified within the vicinity of the Project are provided on **Figure 2**. A summary of NWI-mapped wetlands occurring in the Project Survey Area and the associated field identified resources is presented in **Table 2**.

TABLE 2: NWI DISPOSTION SUMMARY TABLE WITHIN THE PROJECT SURVEY AREA

NWI Code	NWI Description	Related Field Inventoried Resource (Wetland ID/Stream ID)	Comments
R2UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	S-AGS-001	Field verified as a perennial stream
R2UBF	Riverine, Lower Perennial, Unconsolidated Bottom, Semipermanently Flooded	S-AGS-004	Field verified as a perennial stream
PEM1C	Palustrine, Emergent, Persistent, Seasonally Flooded	W-AGS-002-PEM-PSS	Field verified as a PEM/PSS wetland complex

3.1.3 DELINEATED WETLANDS

AECOM identified two wetlands (one PEM/PSS complex, and one PEM/PSS/PFO complex) within the Project Survey Area. Both wetlands were assigned ORAM Category 2 within the Project Survey Area. No Category 3 wetlands were identified within the Project Survey Area. A summary of the delineated features is provided in **Table 3**. The AECOM delineation boundaries are provided on **Figure 3**.

Final jurisdictional status can only be determined by the USACE, and AECOM assessments are provisional. The locations and approximate extent of the wetlands identified within the Project Survey Area are shown on **Figure 3**. The completed USACE data forms and photographs of each wetland are provided in **Appendix B**.

TABLE 3: SUMMARY OF DELINEATED WETLANDS WITHIN THE PROJECT SURVEY AREA

Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Proposed Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude				Score	Category					Temporary Matting Area (acre)	Permanent Impact Area (acre)
W-AGS-001	40.66634	-81.21762	No	PEM	0.051	53	2	TBD	None	None	N/A	TBD	TBD
	40.66489	-81.21742	No	PSS	0.546	53	2	TBD	None	None	N/A	TBD	TBD
	40.66622	-81.21647	No	PFO	0.225	53	2	TBD	None	None	N/A	TBD	TBD
W-AGS-002	40.66474	-81.21376	No	PEM	0.805	54	2	TBD	None	None	N/A	TBD	TBD
	40.66373	-81.21409	No	PSS	0.210	54	2	TBD	None	None	N/A	TBD	TBD
Total:					**1.837**							**0.000**	**0.000**

3.2 STREAM DELINEATION

During the field survey, AECOM delineated five streams (two perennial, two intermittent, and one ephemeral). All delineated streams were classified using HHEI evaluations that identified them as Class I PHW (S-AGS-003), Class II PHW (S-AGS-002, S-AGS-004, and S-AGS-005), and Class III PHW (S-AGS-001) streams.

AECOM has provided a provisional determination that all delineated streams within the Project Survey Area appear to be jurisdictional (i.e., WOTUS), based on their observed or presumed confluence with downstream waters. Final jurisdictional status can only be determined by the USACE, and AECOM assessments are provisional. A summary of the delineated features is provided in **Table 4**. Stream data forms and photographs of each delineated stream resource are provided in **Appendix C**.

TABLE 4: SUMMARY OF DELINEATED STREAMS WTIHIN THE PROJECT SURVEY AREA

Stream ID	Location		Stream Type	Stream Name	Delineated Length (feet)	Bankfull Width (feet)	OHWM Width (feet)	Field Evaluation			Ohio EPA 401 Eligibility	Stream Crossing ?	Proposed Impacts	
	Latitude	Longitude						Method	Score	Classification / Rating / OAC Designation			Fill Type	Area (acre)
S-AGS-001	40.666166	-81.217103	Perennial	UNT to Sandy Creek	1104	5	3.5	HHEI	52	Class III PHW	Eligible	TBD	TBD	TBD
S-AGS-002	40.666330	-81.217692	Intermittent	UNT to Sandy Creek	118	4	3	HHEI	43	Class II PHW	Eligible	TBD	TBD	TBD
S-AGS-003	40.66605	-81.217547	Ephemeral	UNT to Sandy Creek	14	5	3	HHEI	13	Class I PHW	Eligible	TBD	TBD	TBD
S-AGS-004	40.663326	-81.213786	Perennial	UNT to Sandy Creek	142	4	3	HHEI	46	Class II PHW	Eligible	TBD	TBD	TBD
S-AGS-005	40.666049	-81.216209	Intermittent	UNT to Sandy Creek	158	8	7	HHEI	40	Class II PHW	Eligible	TBD	TBD	TBD
				Total:	**1,536**									**TBD**

3.2.1 OEPA STREAM ELIGIBILITY

OEPA stream eligibility for 401 WQC mapping was reviewed for the Project Survey Area. The Project occurs within one watershed, Armstrong Run-Sandy Creek (050400010605), that is designated by 401 WQC as "Possibly Eligible". The OEPA stream eligibility mapping for the Project Survey Area is provided on **Figure 4**.

3.3 FEMA 100 YEAR FLOODPLAINS

No FEMA regulated floodways, or 100-year floodplains are located within the Project Survey Area (FEMA, 2011).

3.4 PONDS

During the field surveys, AECOM did not identify any ponds within the Project Survey Area.

3.5 UPLAND DRAINAGE FEATURES

During the field surveys, AECOM identified one upland drainage feature within the Project Survey Area. The extent of the upland drainage feature is displayed on **Figures 2 and 3**. Photographs of the upland drainage feature are provided in **Appendix C.**

3.6 VEGETATIVE COMMUNITIES

AECOM ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys. As described in **Table 4** below, the Project Survey Area contained Agriculture Row-Crop, Old Field, Scrub-Shrub, Landscaped, Stream/Wetlands, and Woodland areas. Vegetative communities are depicted visually on aerial photography in **Figure 5**. Representative photographs of the vegetative communities in the Project Survey Area are provided as **Appendix D**.

TABLE 4 - VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY AREA

Vegetative Community	Description	Approximate Acreage Within the Project Survey Area	Approximate Percentage Within the Project Survey Area
Woodlands (Deciduous)	Woodlands (floodplain, upland, successional-mixed, etc.) are present along the Project Survey Area	5.27	30.75%
Old Field	Old fields were observed within the ROW with the Project Survey Area. These were maintained to not allow for woody vegetation to establish.	5.15	30.05%
Scrub-Shrub	Scrub-Shrub areas were observed within the ROW with the Project Survey Area. These areas were maintained less frequently than the old field vegetative community which allowed shrubs and small trees to grow, however large trees were not present.	4.81	28.06%
Streams/Wetlands	Streams and wetlands were observed both within and beyond the survey area for the Project.	1.26	7.35%
Urban	Urban areas included paved roads that ran through the Project Survey Area.	0.51	2.98%
Landscaped Areas	Landscaped areas, including residential properties and commercial properties, were observed within the Project vicinity. These landscaped areas within the Project Survey Area and adjacent areas are frequently mowed grasses and forbs.	0.12	0.70%
Agricultural Row-Crop	Agricultural lands being utilized for row-crop production and associated activities, typically devoid of vegetation outside of the target crop and opportunistic/invasive species.	0.02	0.12%
	Totals:	**17.14**	**100%**

3.7 RARE, THREATENED, AND ENDANGERED SPECIES AGENCY COORDINATION

Protected Species Agency Consultation –

On July 22, 2025, coordination letters were sent to USFWS and the ODNR Ohio Natural Heritage Program (ONHP) and Division of Wildlife (DOW), seeking an environmental review for the Project for potential impacts to threatened and endangered species.

Responses were received from the USFWS on August 1, 2025, and from ODNR on August 19, 2025. According to a response letter received from the USFWS, due to the project type, size, and location, adverse effects to federally endangered, threatened, or proposed species or their critical habitat are not anticipated. Regarding state threatened and endangered species that may occur within the Project vicinity,

five species were listed by ODNR. The response letter from the USFWS and the ODNR are included as **Appendix E.**

Table 5 provides a list of species of concern identified by the agencies as potentially occurring within the vicinity of the Project. Photographs of the habitat within the Project Survey Area are provided as **Appendix D**.

TABLE 5
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY AREA

Common Name (Scientific Name)	State Status	Federal Status	Typical Habitat	Habitat Observed	Avoidance Dates	Agency Comments	Potential Impacts
Mammals							
Indiana bat (*Myotis sodalis*)	Endangered	Endangered	Summer habitat During spring/summer, bat species roost in trees behind loose, exfoliating bark, in crevices and cavities, or in leaves. Hibernaculum(a) During winter, these species hibernate in humid mines, caves, and occasionally man-made structures.	Summer habitat Yes - Within the Project survey area, the woodlands within the northern portion of the survey area may provide suitable habitat for the species. Hibernaculum(a) No mine openings and/or known caves are located within 0.25 miles of Project survey area and the USFWS did not identify known hibernacula within 5-miles of the Project. Furthermore, field evaluations did not identify any potential hibernaculum(a) within the Project survey area. .	Summer Tree Clearing April 1 – September 30	Summer habitat If suitable habitat occurs within the Project survey area, the USFWS and ODNR DOW recommend seasonal tree cutting (October 1 to March 31). If summer tree clearing is required, additional coordination with the ODNR and the USFWS is warranted. Additionally, the USFWS and ODNR indicated that there is a known presence of this species within the Project area and summer surveys would not constitute a presence or absence of this species. Hibernaculum(a) In accordance with 2025 Ohio ODNR DOW and the USFWS Joint Guidance for Bat Surveys and Tree Clearing (2025 Joint Guidance), a 0.25-mile tree cutting and subsurface disturbance buffer around a hibernaculum entrance is recommended.	Summer habitat Potential summer roosting habitat is present within the Project area and seasonal tree clearing, between October 1 and March 31, is recommended
Little brown bat (*Myotis lucifugus*)	Endangered	N/A	Summer habitat During spring/summer, bat species roost in trees behind loose, exfoliating bark, in crevices and cavities, or in leaves. Hibernaculum(a) During winter, these species hibernate in humid mines, caves, and occasionally man-made structures.	Summer habitat Within the Project survey area, the existing land use is composed of old field areas that lacks the presence of forested areas or suitable bat roosting trees. Hibernaculum(a) No mine openings and/or known caves are located within 0.25 miles of Project survey area and the USFWS did not identify known hibernacula within 5-miles of the Project. Furthermore, field evaluations did not identify any potential hibernaculum(a) within the Project survey area. .	Summer Tree Clearing April 1 – September 30	Summer habitat If suitable habitat occurs within the Project survey area, the USFWS and ODNR DOW recommend seasonal tree cutting (October 1 to March 31). If summer tree clearing is required, additional coordination with the ODNR and the USFWS is warranted. Hibernaculum(a) In accordance with 2025 Ohio ODNR DOW and the USFWS Joint Guidance for Bat Surveys and Tree Clearing (2025 Joint Guidance) (copy of guidance provided within Appendix E), a 0.25-mile tree cutting and subsurface disturbance buffer around a hibernaculum entrance is recommended.	Summer habitat No impact to listed bat species or their habitat is anticipated due to absence of tree clearing activities. If tree clearing is required, it should be completed between October 1 and March 31.
Tricolored bat (*Perimyotis subflavus*)	Endangered	Proposed Endangered	Summer habitat During spring/summer, bat species roost in trees behind loose, exfoliating bark, in crevices and cavities, or in leaves. Hibernaculum(a) During winter, these species hibernate in humid mines, caves, and occasionally man-made structures.	Summer habitat Within the Project survey area, the existing land use is composed of old field areas that lacks the presence of forested areas or suitable bat roosting trees. Hibernaculum(a) No mine openings and/or known caves are located within 0.25 miles of Project survey area and the USFWS did not identify known hibernacula within 5-miles of the Project. Furthermore, field evaluations did not identify any potential hibernaculum(a) within the Project survey area. .	Summer Tree Clearing April 1 – September 30	Summer habitat If suitable habitat occurs within the Project survey area, the USFWS and ODNR DOW recommends seasonal tree cutting (October 1 to March 31). If summer tree clearing is required, additional coordination with the ODNR and the USFWS is warranted. Hibernaculum(a) In accordance with 2025 Ohio ODNR DOW and the USFWS Joint Guidance for Bat Surveys and Tree Clearing (2025 Joint Guidance), a 0.25-mile tree cutting and subsurface disturbance buffer around a hibernaculum entrance is recommended.	Summer habitat No impact to listed bat species or their habitat is anticipated due to absence of tree clearing activities. If tree clearing is required, it should be completed between October 1 and March 31.

TABLE 5
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY AREA

Common Name (Scientific Name)	State Status	Federal Status	Typical Habitat	Habitat Observed	Avoidance Dates	Agency Comments	Potential Impacts
Northern long-eared bat (*Myotis septentrionalis*)	Endangered	Endangered	<u>Summer habitat</u> During spring/summer, bat species roost in trees behind loose, exfoliating bark, in crevices and cavities, or in leaves. <u>Hibernaculum(a)</u> During winter, these species hibernate in humid mines, caves, and occasionally man-made structures.	<u>Summer habitat</u> Yes - Within the Project survey area, the woodlands within the northern portion of the survey area may provide suitable habitat for the species. <u>Hibernaculum(a)</u> No mine openings and/or known caves are located within 0.25 miles of Project survey area and the USFWS did not identify known hibernacula within 5-miles of the Project. Furthermore, field evaluations did not identify any potential hibernaculum(a) within the Project survey area. .	<u>Summer Tree Clearing</u> April 1 – September 30	<u>Summer habitat</u> If suitable habitat occurs within the Project survey area, the USFWS and ODNR DOW recommend seasonal tree cutting (October 1 to March 31). Additionally, the USFWS and ODNR indicated that there is a known presence of this species within the Project area and summer surveys would not constitute a presence or absence of this species. <u>Hibernaculum(a)</u> In accordance with 2025 Ohio ODNR DOW and the USFWS Joint Guidance for Bat Surveys and Tree Clearing (2025 Joint Guidance), a 0.25-mile tree cutting and subsurface disturbance buffer around a hibernaculum entrance is recommended.	<u>Summer habitat</u> Potential summer roosting habitat is present within the Project area and seasonal tree clearing, between October 1 and March 31, is recommended
Birds							
Northern harrier (*Circus hudsonis*)	Endangered	None	This species hunts over grasslands and nests can be found in large marshes and grasslands.	One area of old field measuring >2 acres was observed within the Project Survey Area.	April 15 to July 31	Habitat should be avoided during the bird's nesting period between April 15 through July 31. If habitat will not be impacted, this Project will not likely impact the species.	**No** – Based on desktop and field reviews, the Project area intersects habitat that would meet ODNR size requirement, but is excluded due to limiting factors.

2025 Joint Guidance – Refers to the 2025 ODNR DOW and USFWS Joint Guidance for Bat Surveys and Tree Clearing, a copy of the guidance is provided within **Appendix F of this memo.*

Protected Species Agency Summary

Based on general observations during the ecological field survey, forested areas were identified within the Project Survey Area and tree clearing may be included as part of the Project. The ODNR and the USFWS recommend implementations of seasonal tree clearing between October 1 and March 31 to avoid adverse effects to Indiana bat, tricolored bat, little brown bat, and northern long-eared bat. If trees must be cut during the summer months, the ODNR recommends that a mist net survey could be completed for the Indiana bat, little brown bat, and the tricolored bat between June 1 and August 15. However, additional summer surveys would not constitute presence/absence within the Project Survey Area for the northern long-eared bat. If summer tree clearing is needed, additional coordination would be completed with ODNR and the USFWS.

Regarding potential hibernaculum(a) within the Project area, a desktop hibernaculum(a) review was completed in accordance with the 2025 Ohio ODNR DOW and USFWS Joint Guidance for Bat Surveys and Tree Clearing within 0.25 miles of the Project survey (**Appendix F**). No karst features, underground mine openings, surface industrial minerals and historic coal mines were identified are within a 0.25-miles radius of the Project Area that are anticipated to provide suitable hibernacula for cave-dwelling bats as shown in **Appendix B**. Further evaluation and coordination with the ODNR and USFWS are not warranted.

The ODNR noted that the Project is within the range of the northern harrier; however, AECOM ecologist and approved avian specialist concluded an absence of this species nesting habitat within the Project survey area. According to ODNR, open grasslands and wet meadow marshes, of at least 2-acres, is considered nesting habitat for the northern harrier. Based on field and desktop review, the Project survey area traverses an approximate 8-acre field, comprised of old field habitat, on the east side of Krone Rd NW. The field is bordered by a forested riparian corridor to the north, expansive forested habitat to the east and south, and Krone Rd NW to the west. Based on present day and historical aerial imagery, the field appears to be regularly maintained via mowing and/or grazing. Although this field meets the ODNR requirement for size, it possesses characteristics that would discourage nesting such as regular habitat disturbances (mowing and/or grazing) and proximity to forested habitat and a public roadway. Therefore, due to these characteristics, the field is not considered to provide favorable nesting conditions for the species. Suitable nesting habitat within the Project survey area is not present and no further coordination regarding this listed species is necessary concerning this Project.

4.0 SUMMARY

The ecological field survey of the Project Survey Area identified a total of two wetlands (one PEM/PSS complex and one PEM/PSS/PFO complex) and five streams (two perennial, two intermittent and one ephemeral). The boundaries of which are provided on **Figure 3**.

Of the five state and/or federally listed threatened and endangered species within range of the Project Survey Area, none of the species or their critical habitat were identified for the mammal or bird species. Therefore, no further coordination is anticipated to be required to the USFWS and/or ODNR.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the Project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

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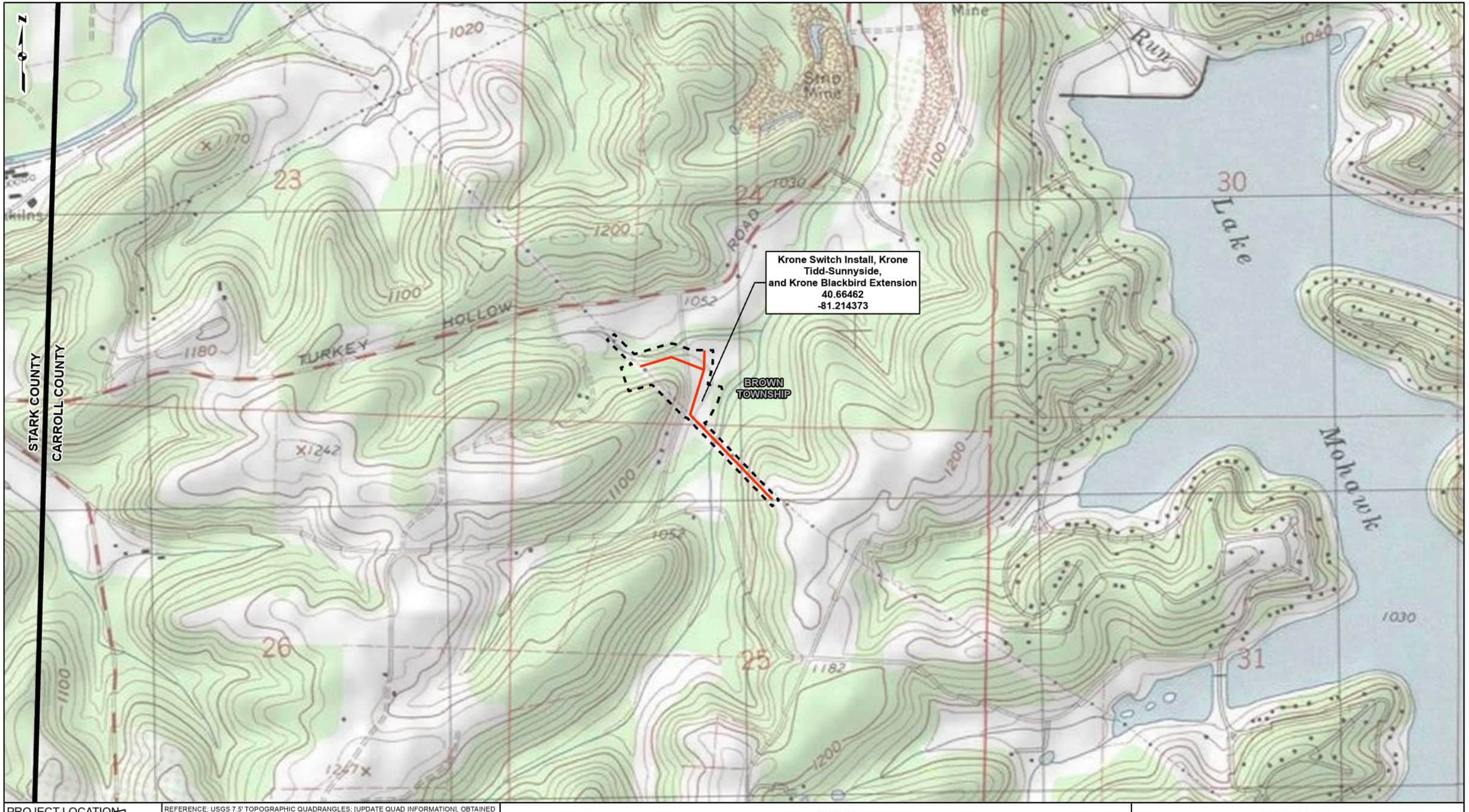
FIGURES



PROJECT LOCATION

CARROLL COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: [UPDATE QUAD INFORMATION], OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 08/2025.

8/25/2025

LEGEND

- BLACKBIRD EXTENSION TRANSMISSION LINE
- PROJECT SURVEY AREA
- COUNTY BOUNDARIES
- TOWNSHIP BOUNDARIES

0 500 1,000 2,000 Feet

FIGURE 1
PROJECT LOCATION MAP

KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

AECOM

DRAWN BY: GIB DATE: 8/25/2025
CHECKED: CJT APPROVED:

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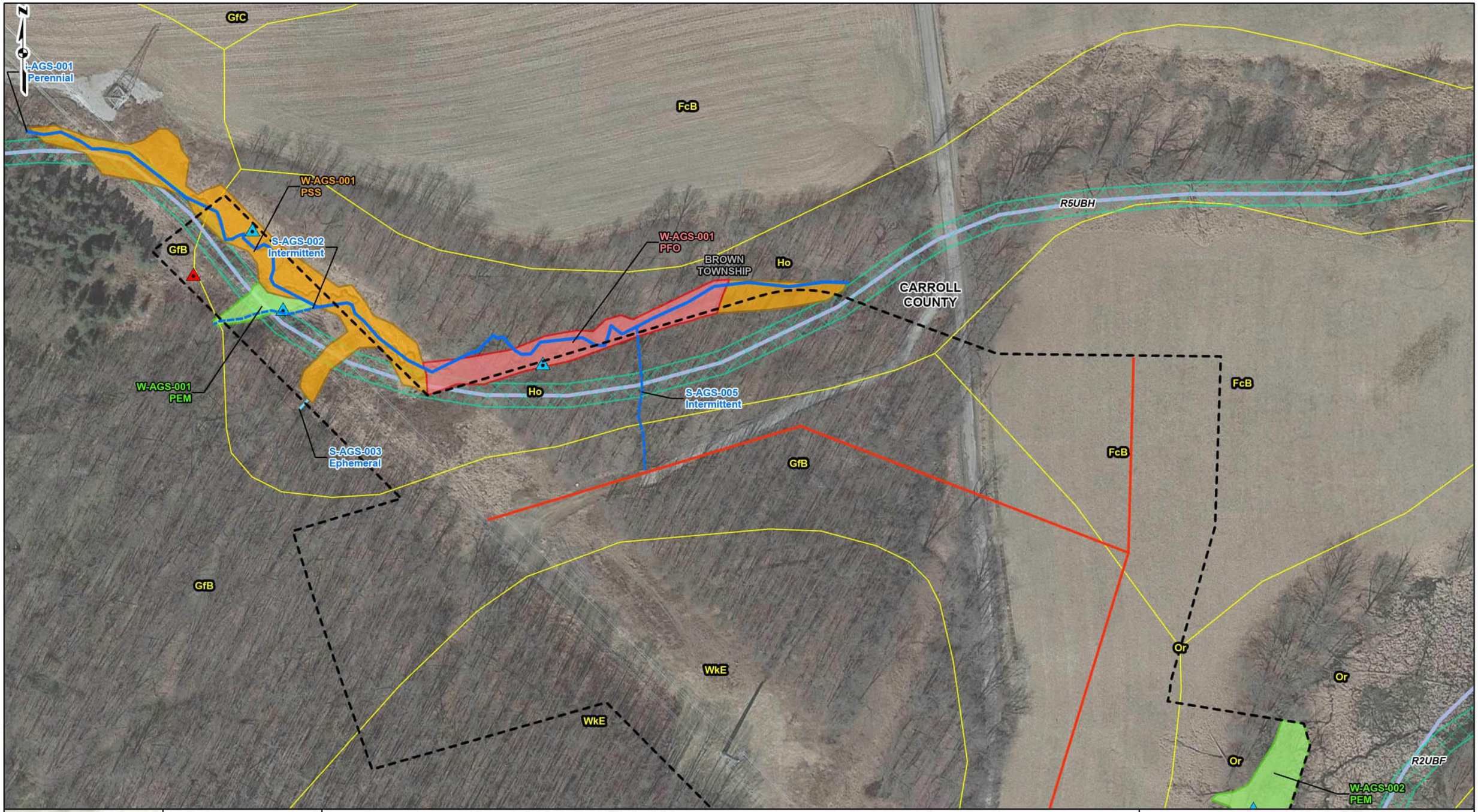

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8/25/2025

LEGEND

- PROJECT STUDY AREA
- BLACKBIRD EXTENSION TRANSMISSION LINE
- DELINEATED EPHEMERAL STREAM
- DELINEATED INTERMITTENT STREAM
- DELINEATED PERENNIAL STREAM
- UPLAND DATA POINT
- WETLAND DATA POINT
- DELINEATED PEM WETLAND
- DELINEATED PSS WETLAND
- DELINEATED PFO WETLAND
- NWI WETLAND (USFWS)
- NHD STREAM (USGS)
- HUC 12 WATERSHED BOUNDARY
- COUNTY BOUNDARIES
- TOWNSHIP BOUNDARIES
- SOIL MAP UNIT

SOIL MAP UNIT DESCRIPTION:

FcB: Fitchville silt loam, 3 to 8 percent slopes

GfB: Glenford silt loam, 3 to 8 percent slopes

GfC: Glenford silt loam, 8 to 15 percent slopes

Ho: Holly silt loam, ponded

Or: Orrville silt loam, 0 to 3 percent slopes, occasionally flooded

WkC: Westmoreland silt loam, 8 to 15 percent slopes

WkE: Westmoreland silt loam, 25 to 35 percent slopes

0 50 100 200 Feet

FIGURE 2
SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP

AECOM

KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

DRAWN BY: GIB
CHECKED: CJT
DATE: 8/25/2025
APPROVED:

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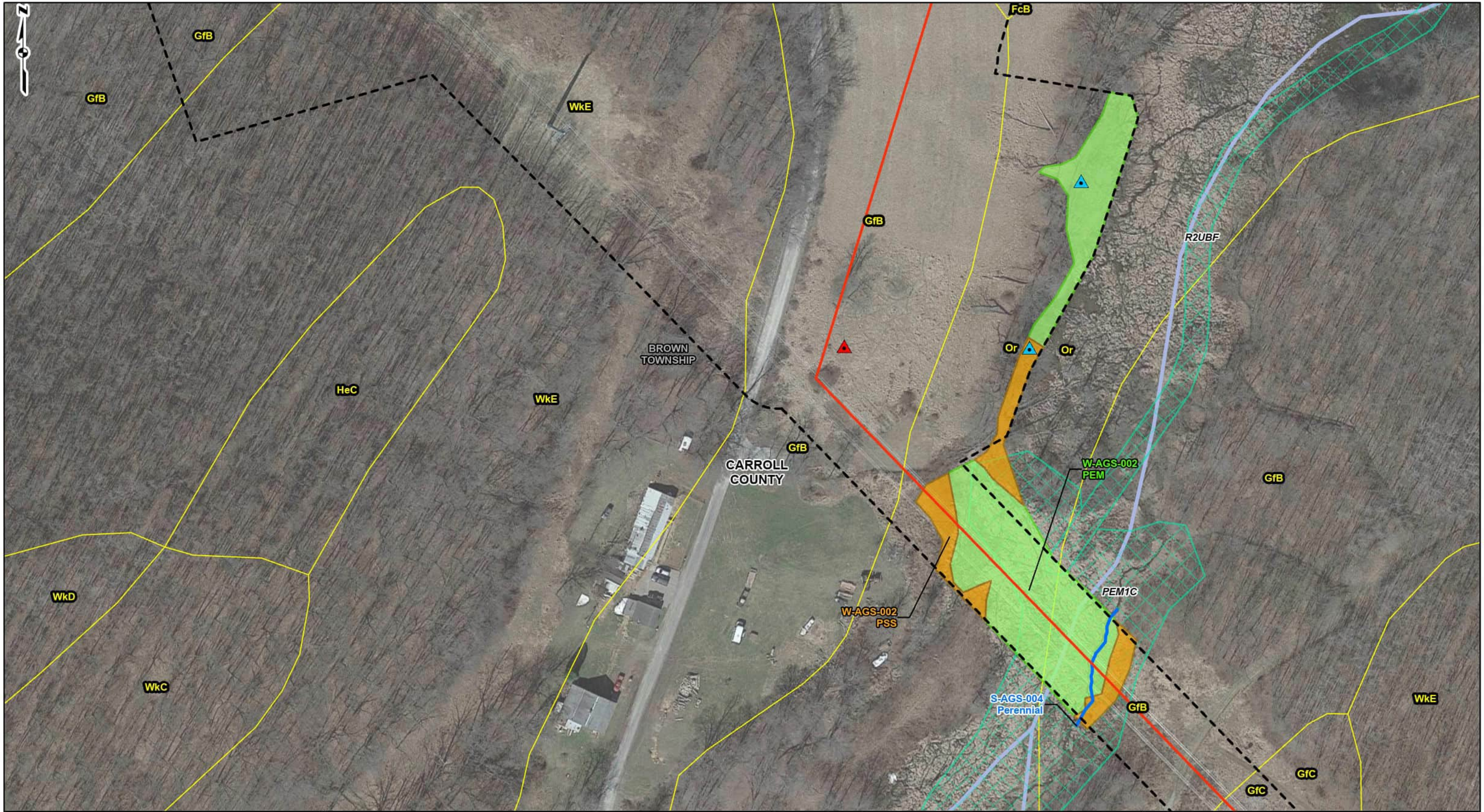

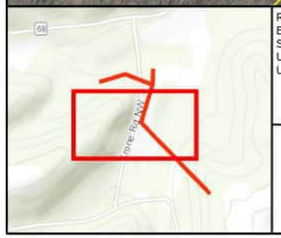

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8/25/2025

LEGEND

- PROJECT STUDY AREA
- BLACKBIRD EXTENSION TRANSMISSION LINE
- DELINEATED PERENNIAL STREAM
- UPLAND DATA POINT
- WETLAND DATA POINT
- DELINEATED PEM WETLAND
- DELINEATED PSS WETLAND
- NWI WETLAND (USFWS)
- NHD STREAM (USGS)
- HUC 12 WATERSHED BOUNDARY
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0 50 100 200 Feet

FIGURE 2
SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP

AECOM

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AMERICAN ELECTRIC POWER

DRAWN BY: GIB DATE: 8/25/2025
CHECKED: CJT APPROVED:

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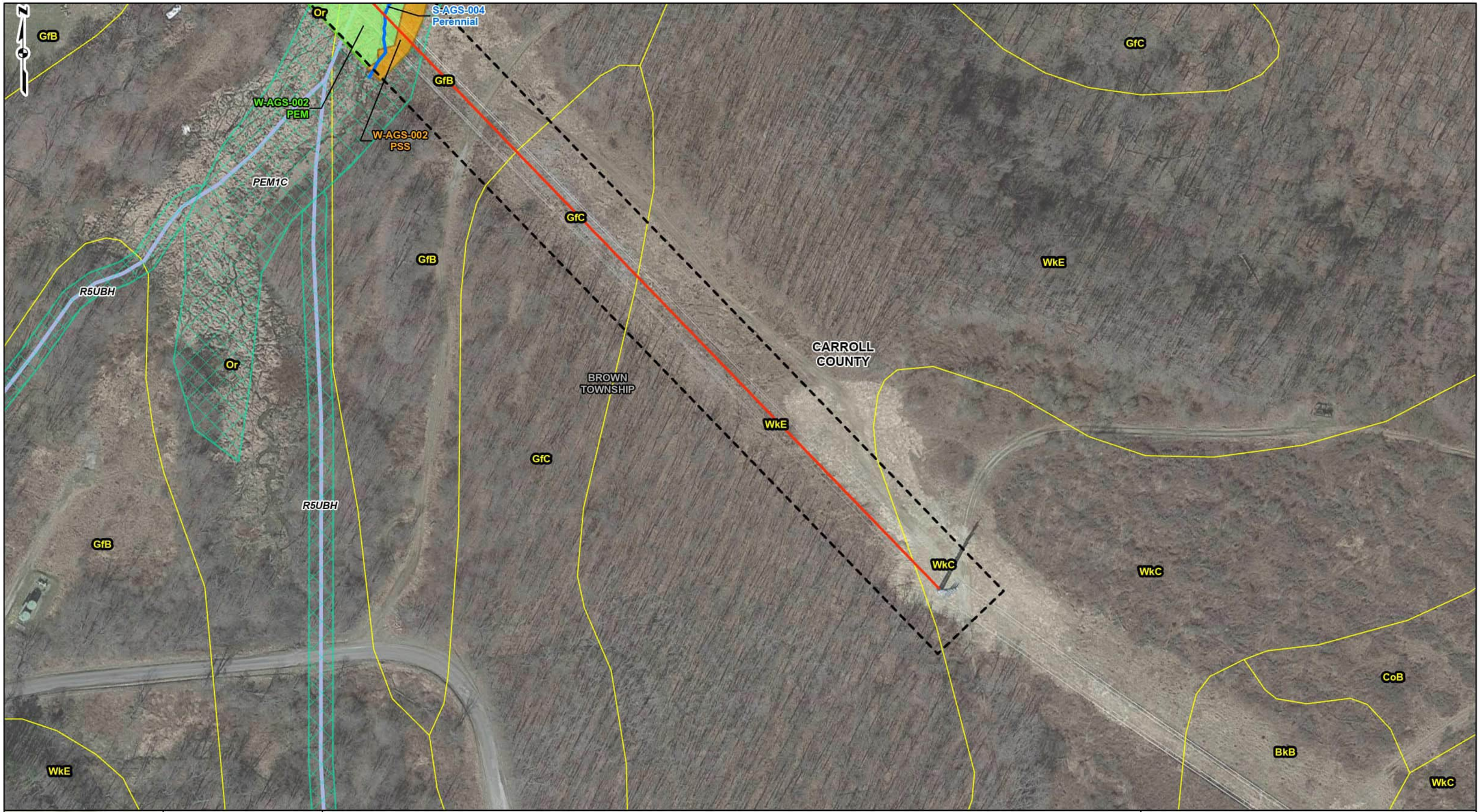

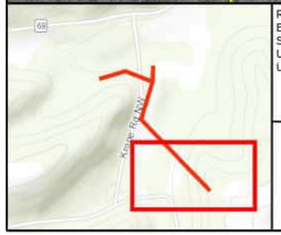

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8/25/2025

LEGEND

- PROJECT STUDY AREA
- BLACKBIRD EXTENSION TRANSMISSION LINE
- DELINEATED PERENNIAL STREAM
- DELINEATED PEM WETLAND
- DELINEATED PSS WETLAND
- NWI WETLAND (USFWS)
- NHD STREAM (USGS)
- HUC 12 WATERSHED BOUNDARY
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0 50 100 200 Feet

FIGURE 2
SOIL MAP AND NATIONAL WETLANDS INVENTORY MAP

AECOM

KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

DRAWN BY: GIB DATE: 8/25/2025
CHECKED: CJT APPROVED:

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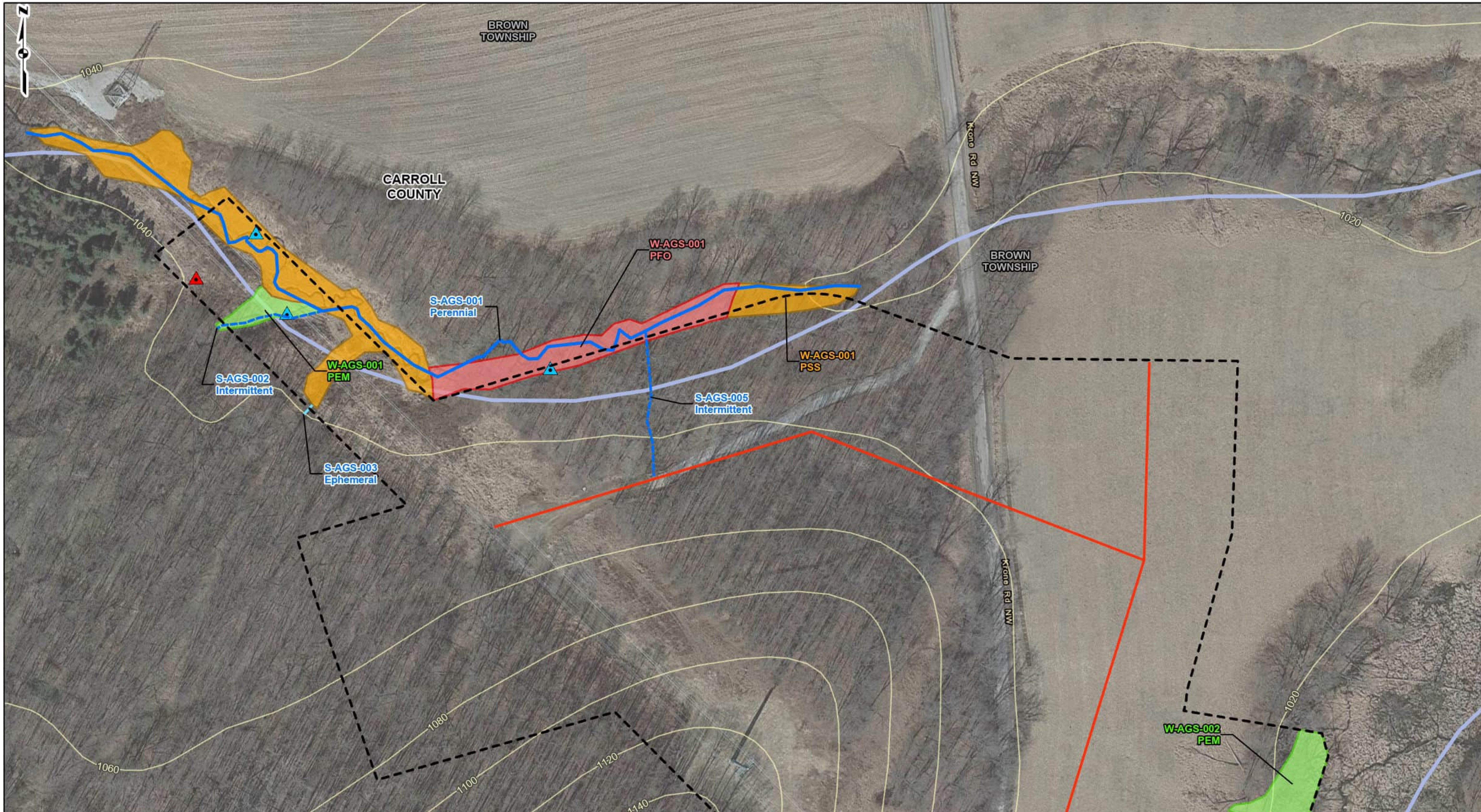


REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 08/2025. SOIL SURVEY GEOGRAPHIC (SSURGO), USDA/NRCS, 2024. NHD, USGS 2024. NWI, USFWS 2024. HUC 12, USGS 2024.

8/25/2025

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
- DELINEATED EPHEMERAL STREAM
- DELINEATED INTERMITTENT STREAM
- DELINEATED PERENNIAL STREAM
- BLACKBIRD EXTENSION TRANSMISSION LINE
- CONTOUR (10FT)
- DELINEATED PEM WETLAND
- DELINEATED PSS WETLAND
- DELINEATED PFO WETLAND
- PROJECT STUDY AREA
- NHD STREAM (USGS)
- COUNTY BOUNDARIES
- TOWNSHIP BOUNDARIES

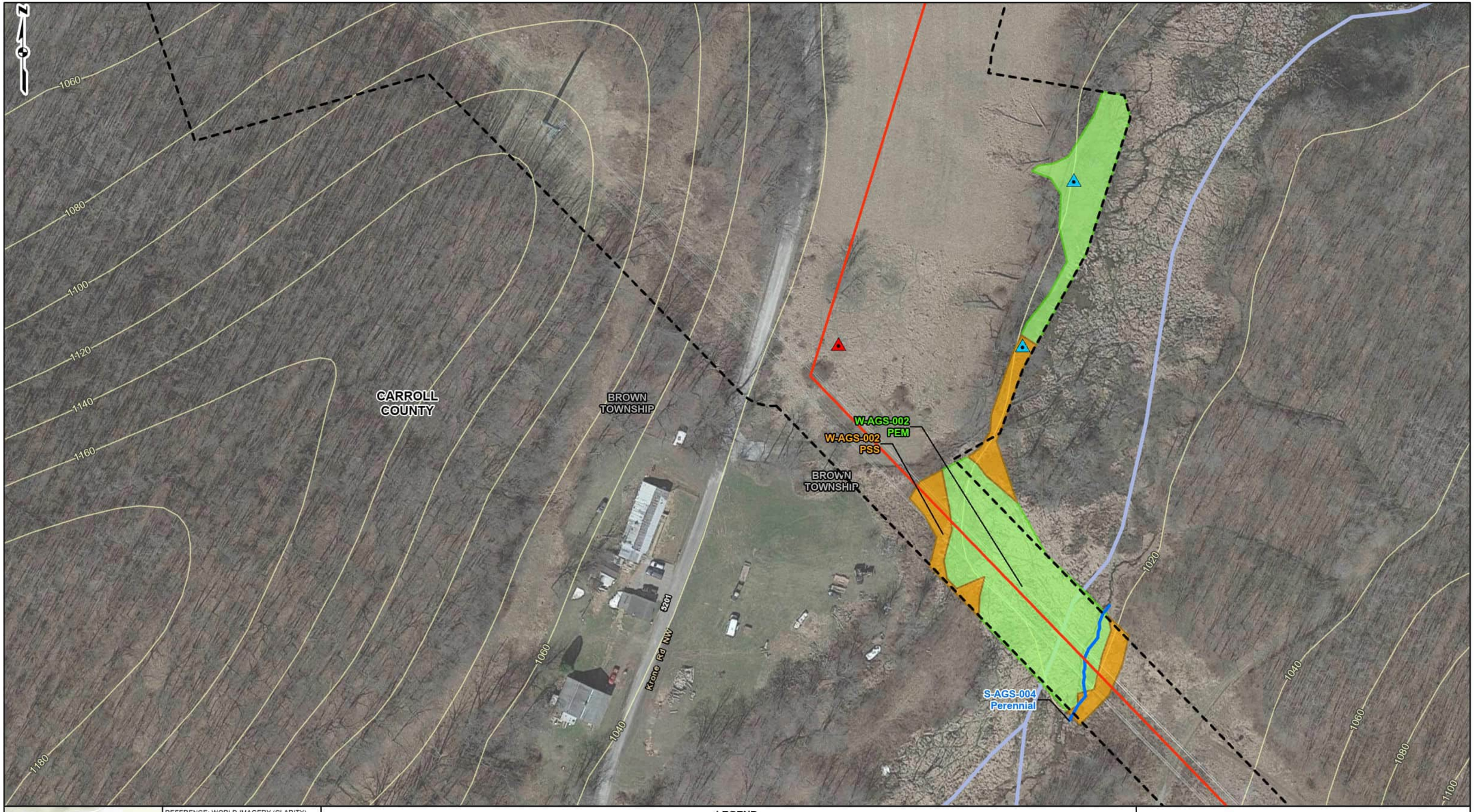
0 50 100 200 Feet

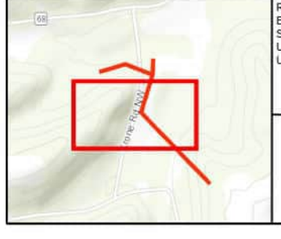
FIGURE 3
WETLAND DELINEATION
AND STREAM ASSESSMENT MAP

AECOM

KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

DRAWN BY: GIB
DATE: 8/25/2025
CHECKED: CJT
APPROVED:





REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 08/2025. SOIL SURVEY GEOGRAPHIC (SSURGO), USDA/NRCS, 2024. NHD, USGS 2024. NWI, USFWS 2024. HUC 12, USGS 2024.

8/25/2025

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
- DELINEATED EPHEMERAL STREAM
- DELINEATED INTERMITTENT STREAM
- DELINEATED PERENNIAL STREAM
- BLACKBIRD EXTENSION TRANSMISSION LINE
- CONTOUR (10FT)
- DELINEATED PEM WETLAND
- DELINEATED PSS WETLAND
- DELINEATED PFO WETLAND
- PROJECT STUDY AREA
- NHD STREAM (USGS)
- COUNTY BOUNDARIES
- TOWNSHIP BOUNDARIES

0 50 100 200 Feet

FIGURE 3
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

AECOM

KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

DRAWN BY: GIB
CHECKED: CJT
DATE: 8/25/2025
APPROVED:

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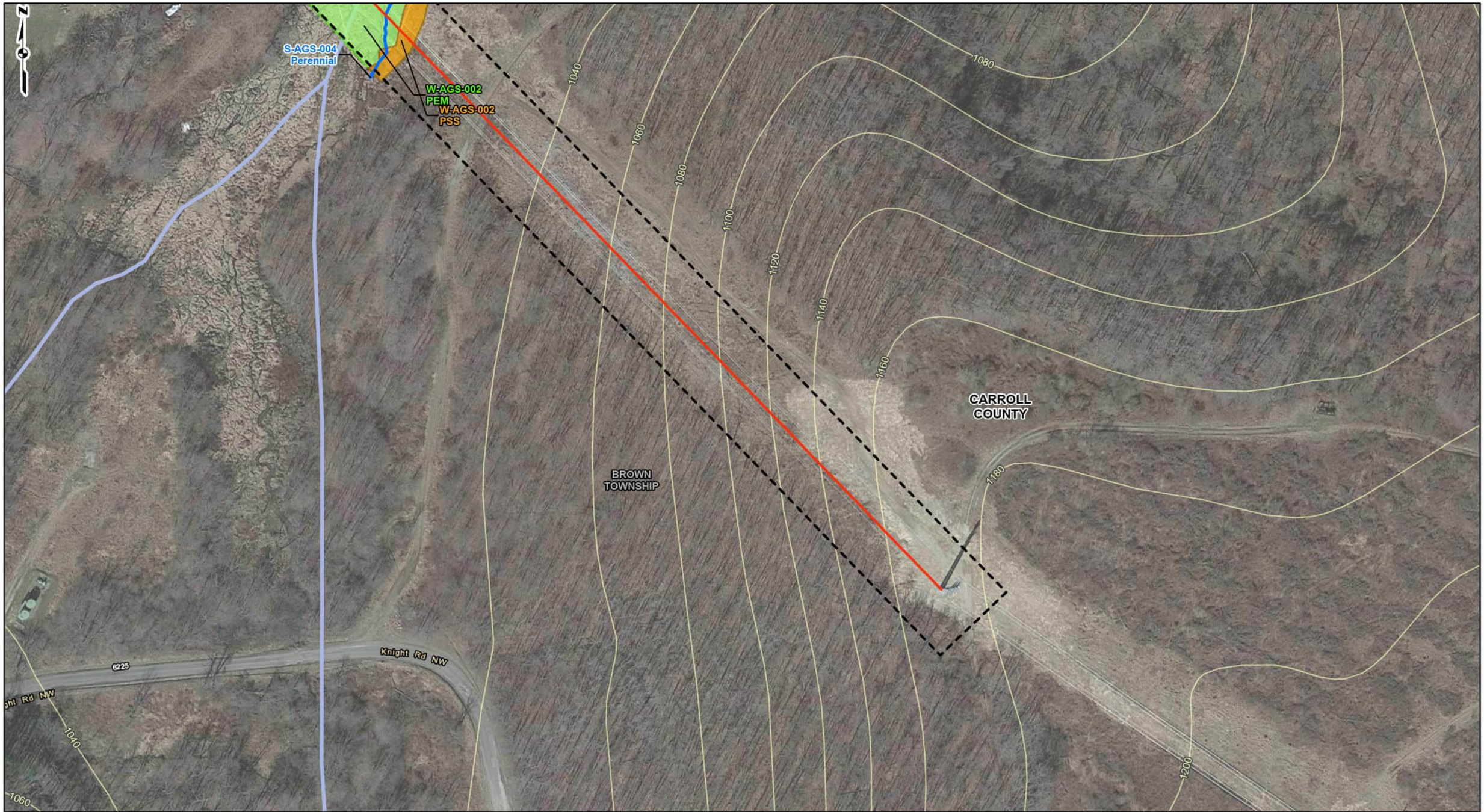

REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 08/2025. SOIL SURVEY GEOGRAPHIC (SSURGO), USDA/NRCS, 2024. NHD, USGS 2024. NWI, USFWS 2024. HUC 12, USGS 2024.

8/25/2025

LEGEND

- UPLAND DATA POINT
- WETLAND DATA POINT
- DELINEATED EPHEMERAL STREAM
- DELINEATED INTERMITTENT STREAM
- DELINEATED PERENNIAL STREAM
- BLACKBIRD EXTENSION TRANSMISSION LINE
- CONTOUR (10FT)
- DELINEATED PEM WETLAND
- DELINEATED PSS WETLAND
- DELINEATED PFO WETLAND
- PROJECT STUDY AREA
- NHD STREAM (USGS)
- COUNTY BOUNDARIES
- TOWNSHIP BOUNDARIES

0 50 100 200 Feet

FIGURE 3
WETLAND DELINEATION AND STREAM ASSESSMENT MAP

AECOM

KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

DRAWN BY: GIB
CHECKED: CJT

DATE: 8/25/2025
APPROVED:

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Sandy Creek

Middle Run

Krone Switch Install, Krone
Tidd-Sunnyside,
and Krone Blackbird Extension
40.66462
-81.214373

OEPA EPA 401
Eligible
Armstrong Run-Sandy Creek
050400010605

OEPA EPA 401
Eligible
un-Sandy Creek
050400010606

PROJECT LOCATION

CARROLL COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: SUNBURY, OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 08/2025. OEPA ELIGIBLE WATERSHEDS, OHIO ENVIRONMENTAL PROTECTION AGENCY, 2024.

8/28/2025

LEGEND

- BLACKBIRD EXTENSION TRANSMISSION LINE
- PROJECT SURVEY AREA
- NHD STREAM (USGS)

OEPA ELIGIBILITY:

- ELIGIBLE

0 500 1,000 2,000 Feet

FIGURE 4
STREAM ELIGIBILTY MAP

AECOM

KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

AMERICAN ELECTRIC POWER

DRAWN BY: GIB DATE: 8/28/2025
CHECKED: CJT APPROVED:

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N

PH - 1

PH - 9

PH - 13

PH - 12

PH - 2

PH - 11

PH - 10

PH - 3

PH - 4

REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 08/2025.

8/28/2025

LEGEND

PHOTO LOCATION POINT

PROJECT SURVEY AREA

VEGETATIVE COMMUNITY TYPE

- LANDSCAPED
- OLD FIELD
- SCRUB/SHRUB
- STREAMS/WETLANDS
- URBAN
- WOODLANDS

0 50 100 200 Feet

FIGURE 5
VEGETATIVE COMMUNITIES
ASSESSMENT MAP

AECOM

KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

DRAWN BY: GIB DATE: 8/28/2025

CHECKED: CJT APPROVED:

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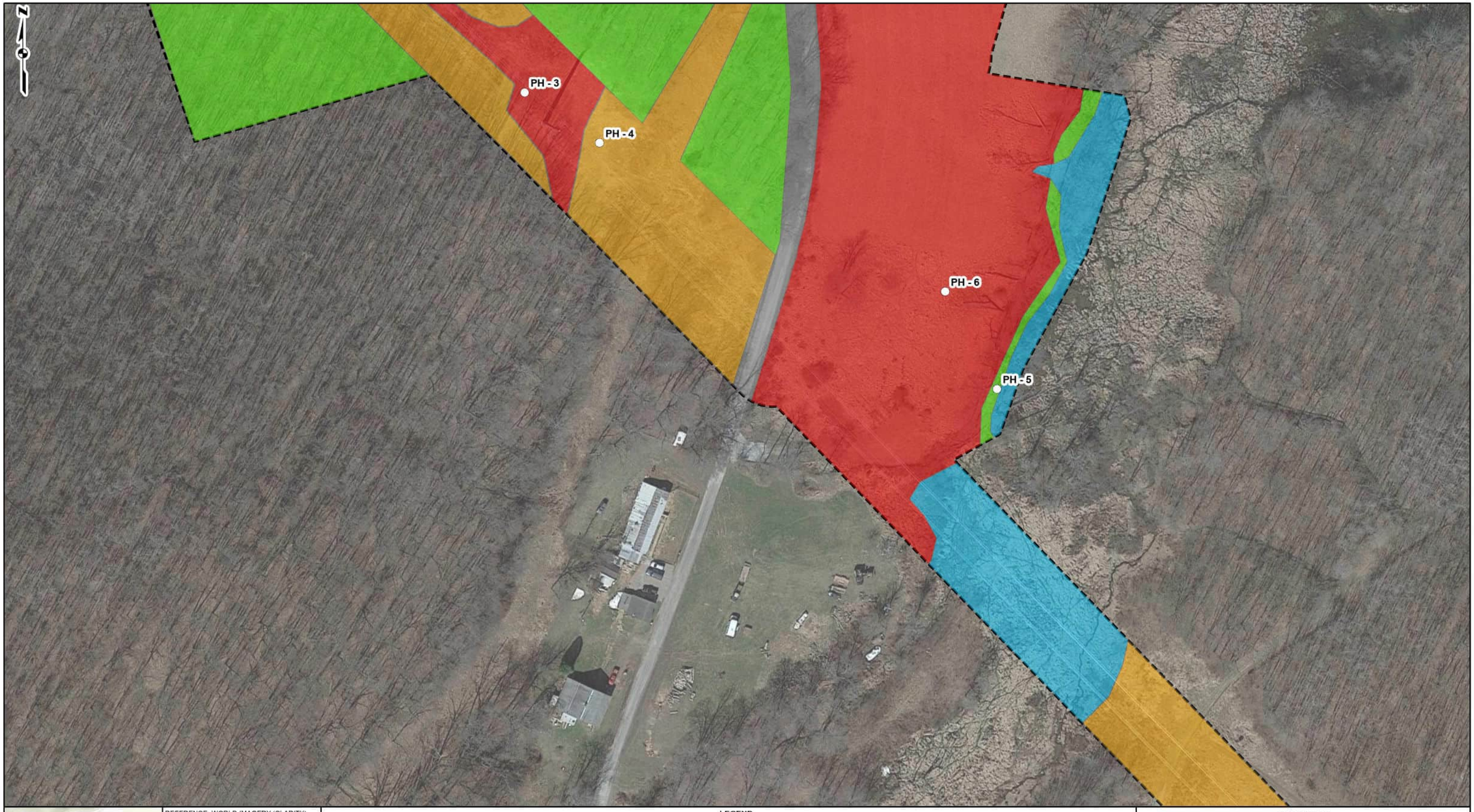

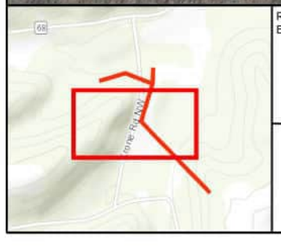

REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 08/2025.

8/28/2025

LEGEND

PHOTO LOCATION POINT

PROJECT SURVEY AREA

VEGETATIVE COMMUNITY TYPE

- OLD FIELD
- SCRUB/SHRUB
- STREAMS/WETLANDS
- URBAN
- WOODLANDS

0 50 100 200 Feet

FIGURE 5
VEGETATIVE COMMUNITIES ASSESSMENT MAP

AECOM

KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

DRAWN BY: GIB
CHECKED: CJT

DATE: 8/28/2025
APPROVED:

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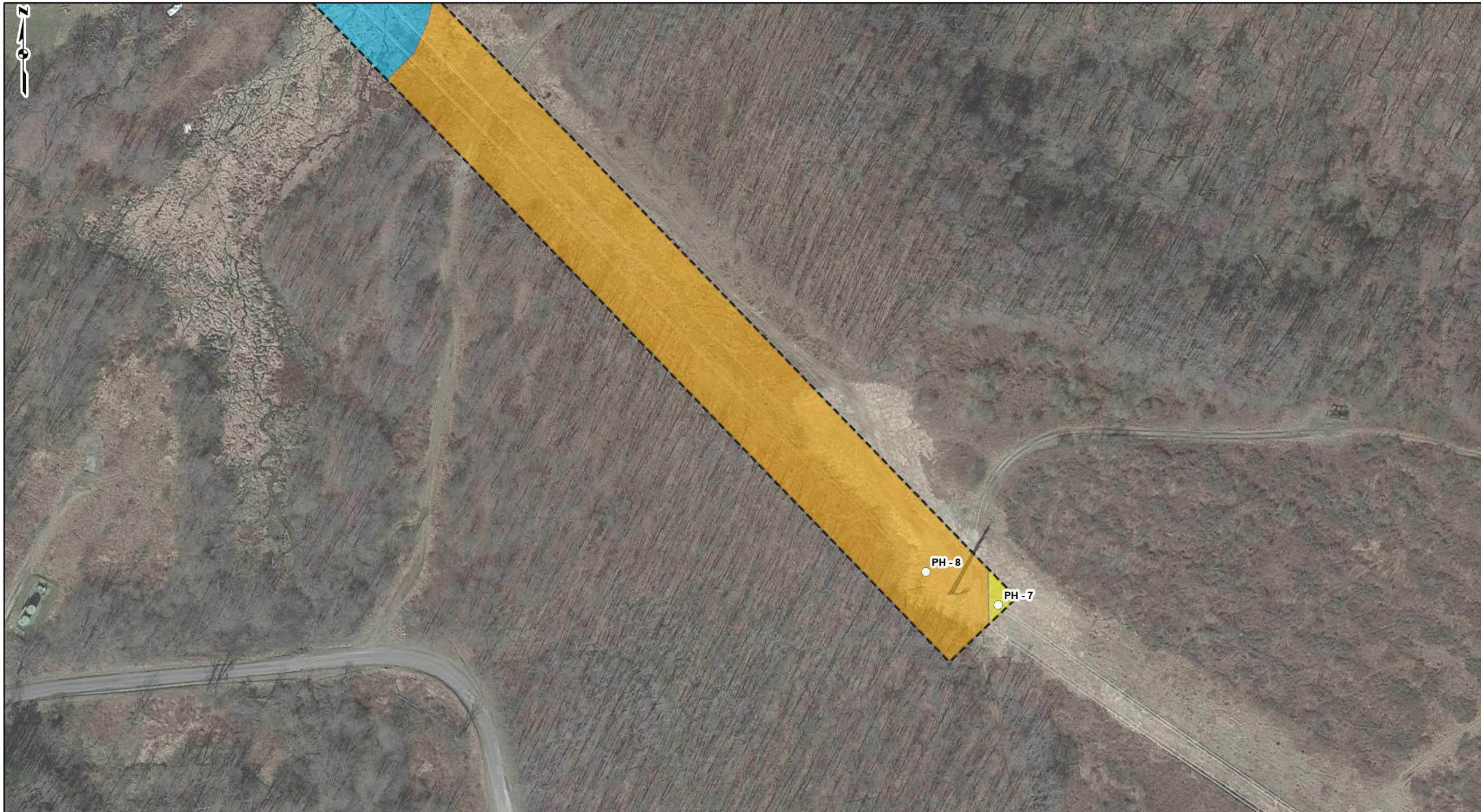


REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 08/2025.

8/28/2025

LEGEND

○ PHOTO LOCATION POINT

PROJECT SURVEY AREA

VEGETATIVE COMMUNITY TYPE

- AGRICULTURE ROW-CROP
- SCRUB/SHRUB
- STREAMS/WETLANDS

0 50 100 200 Feet

FIGURE 5
VEGETATIVE COMMUNITIES
ASSESSMENT MAP

AECOM

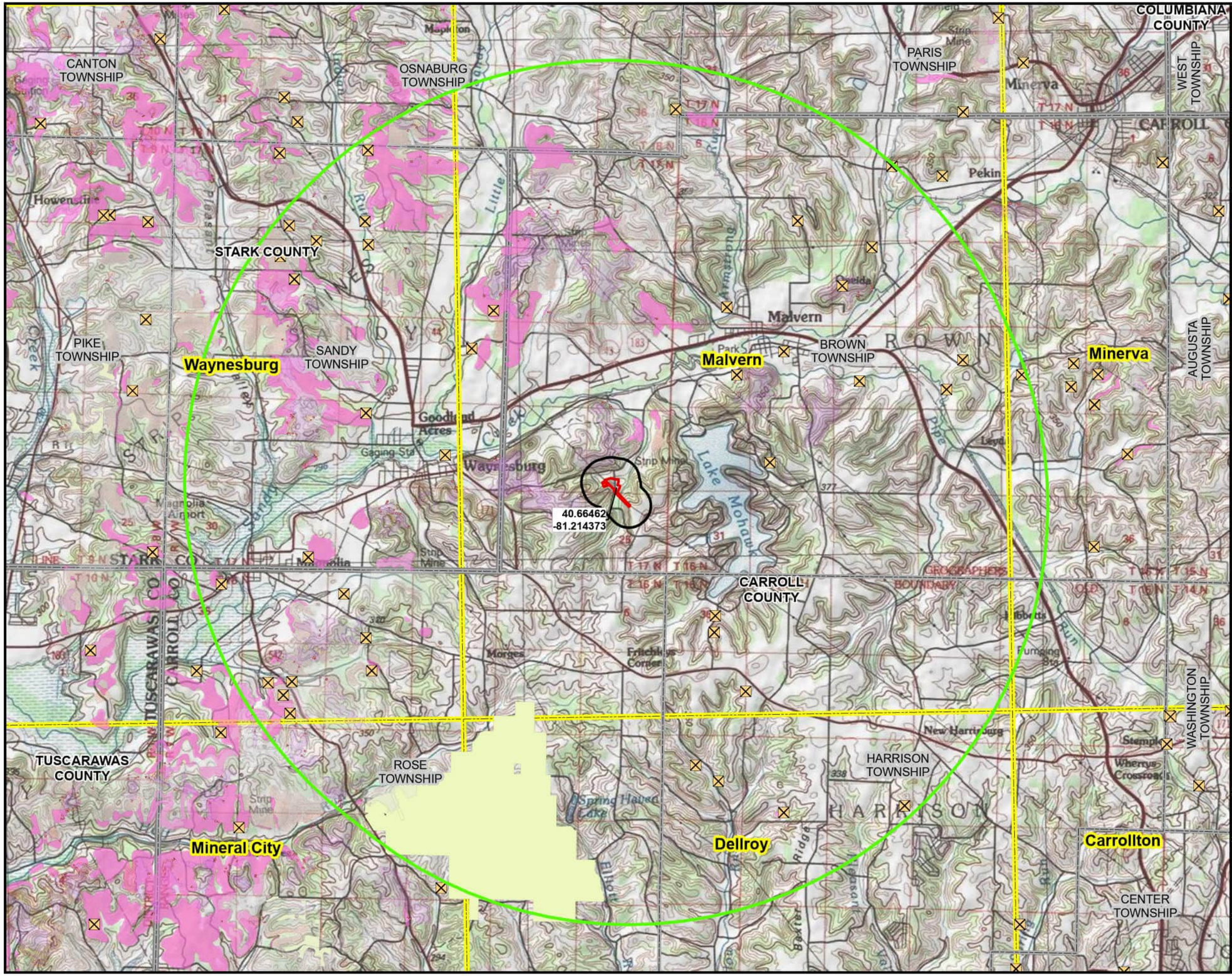
KRONE SWITCH INSTALL, KRONE TIDD-SUNNYSIDE, AND KRONE BLACKBIRD EXTENSION PROJECTS
AMERICAN ELECTRIC POWER

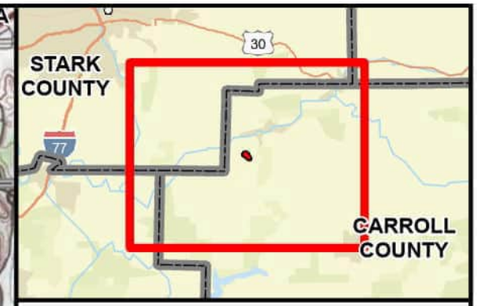
DRAWN BY: GIB
CHECKED: CJT

DATE: 8/28/2025
APPROVED:

APPENDIX A

DESKTOP ASSESSMENT FOR WINTER BAT HABITAT





Legend

- Five Mile Review Area
- AECOM Survey Area
- Quarter Mile Review Area
- Abandoned Underground Mines - Openings
- Abandoned Underground Mines - Point of Unknown Extent
- Abandoned Underground Mine
- Abandoned Underground Mines - Partially Known Extent
- Surface Mine - Inactive Coal Mining Operation
- Historic Surface Coal Mines
- Underground Mine Extents
- Township Boundary
- County Boundary
- Ohio USGS 7.5' Topographic Quadrangle

N

0 3,000 6,000 12,000

Feet

Krone Switch, Tidd-Sunnyside, and Blackbird Extension Projects

FIGURE 1

TOPOGRAPHIC PROJECT OVERVIEW

DATE: 7/11/2025	1 INCH = 6,000 FEET
CREATED BY: GIB	CHECKED BY: CJT
JOB NO.: 60757664	AECOM

Date Saved: 7/11/2025
Document Path: X:\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60757664_AEP_Krone_Switch\2_MXDs\0_TE\TE_Figures_ArcGIS_Pro\TE_Figures_ArcGIS_Pro.aprx

APPENDIX B

USACE WETLAND DATA FORM / OEPA WETLAND ORAM FORMS / PHOTOGRAPHIC RECORD

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Krone Projects City/County: Carroll County Sampling Date: 06/24/2025

Applicant/Owner: AEP State: OH Sampling Point: W-AGS-001-UPL

Investigator(s): AGS/TJK Section, Township, Range: S24 T17N R7W

Landform (hillside, terrace, etc.): Floodplain/Hillslope Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR or MLRA): LRR N, MLRA 126 Lat: 40.666454 Long: -81.217981 Datum: NAD83

Soil Map Unit Name: GfB: Glenford silt loam, 3 to 8 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
W-AGS-001-UPL is an upland data point located along a floodplain/hillside and significantly elevated from S-AGS-001, making stream inputs very infrequent. This data point is located along a convex region within a scrub/shrub habitat. Wetland hydrology and soils are present, while wetland vegetation is lacking. Vegetation is disturbed from right-of-way maintenance. The Antecedent Precipitation Tool indicates that "normal conditions" were present at the time of the field investigation.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

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

Remarks:
One primary indicator is present. The sources of hyrology are precipitation and stream flooding (infrequent).

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-AGS-001-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rubus allegheniensis*	20	Yes	FACU
2. *Elaeagnus umbellata*	20	Yes	UPL
3. *Prunus serotina*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
	55 =Total Cover		
50% of total cover: 28	20% of total cover: 11		
Herb Stratum (Plot size: 5')			
1. *Dichanthelium clandestinum*	30	Yes	FAC
2. *Apocynum cannabinum*	10	Yes	FACU
3. *Juncus effusus*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 =Total Cover		
50% of total cover: 23	20% of total cover: 9		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	30	x 3 =	90
FACU species	45	x 4 =	180
UPL species	20	x 5 =	100
Column Totals:	100 (A)		380 (B)
Prevalence Index = B/A =			3.80

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

Woody Vine – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is not present.

SOIL

Sampling Point: W-AGS-001-UPL

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5Y 4/2	90	10YR 5/4	10	C	PL/M	Loamy/Clayey	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Hydric soil is present (F3).

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Krone Projects City/County: Carroll County Sampling Date: 06/24/2025
Applicant/Owner: AEP State: OH Sampling Point: W-AGS-002-PEM
Investigator(s): AGS/TJK Section, Township, Range: S24 T17N R7W
Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR or MLRA): LRR N, MLRA 126 Lat: 40.664794 Long: -81.217745 Datum: NAD83
Soil Map Unit Name: Or: Orrville silt loam, 0 to 3 percent slopes, occasionally flooded NWI classification: R2UBF / PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
W-AGS-002 is a PEM, abutting wetland that is part of a PEM/PSS wetland complex, likely with PFO sections outside of the survey area. This wetland crosses two NWI wetlands and one NHD stream (S-AGS-004). Wetland hydrology, vegetation, and soils are present. Portions of the wetland have disturbed vegetation due to right-of-way maintenance and farming impacts. The Antecedent Precipitation Tool indicates that "normal conditions" were present at the time of the field investigation.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 0.5
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Several primary and secondary indicators are present. The sources of hyrology are precipitation and stream flooding. Frogs were observed in the wetland.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-AGS-002-PEM

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
		=Total Cover	
50% of total cover:		20% of total cover:	
Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	40	Yes	FACW
2. *Impatiens capensis*	20	Yes	FACW
3. *Glyceria striata*	20	Yes	OBL
4. *Leersia oryzoides*	10	No	OBL
5. *Symplocarpus foetidus*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	95	=Total Cover	
50% of total cover: 48		20% of total cover:	19
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

Woody Vine – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is present.

SOIL

Sampling Point: W-AGS-002-PEM

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	93	10YR 5/4	7	C	PL/M	Loamy/Clayey	Distinct redox concentrations
								Silty Clay Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- X Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Hydric soil is present (F6).

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Krone Projects City/County: Carroll County Sampling Date: 06/24/2025
Applicant/Owner: AEP State: OH Sampling Point: W-AGS-002-PSS
Investigator(s): AGS/TJK Section, Township, Range: S24 T17N R7W
Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR or MLRA): LRR N, MLRA 126 Lat: 40.664295 Long: -81.214019 Datum: NAD83
Soil Map Unit Name: Or: Orrville silt loam, 0 to 3 percent slopes, occasionally flooded NWI classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
W-AGS-002 is a PSS, abutting wetland that is part of a PEM/PSS wetland complex, likely with PFO sections outside of the survey area. This wetland crosses one NWI wetland and is nearby to an NHD stream (S-AGS-004), that provides hydrology to the area. Wetland hydrology, vegetation, and soils are present. The Antecedent Precipitation Tool indicates that "normal conditions" were present at the time of the field investigation.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 10
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Several primary and secondary indicators are present. The sources of hyrology are precipitation and stream flooding. *Other: Standing dead trees. Frogs were present in the wetland.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-AGS-002-PSS

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Ulmus americana*	30	Yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 =Total Cover		
50% of total cover: 15	20% of total cover:	6	
Herb Stratum (Plot size: 5')			
1. *Leersia oryzoides*	20	Yes	OBL
2. *Symplocarpus foetidus*	15	Yes	OBL
3. *Phalaris arundinacea*	15	Yes	FACW
4. *Typha latifolia*	10	No	OBL
5. *Impatiens capensis*	5	No	FACW
6. *Acorus americanus*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
	70 =Total Cover		
50% of total cover: 35	20% of total cover:	14	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

Woody Vine – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is present.

SOIL

Sampling Point: W-AGS-002-PSS

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					Loamy/Clayey	Loam
4-20	10YR 4/1	90	7.5YR 4/4	10	C	M	Loamy/Clayey	Prominent redox concentrations
								Silty clay loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Hydric soil is present (F3, A4, & A11). The soil pit was taken from the edge of the wetland due to innundation.

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Krone Projects City/County: Carroll County Sampling Date: 06/24/2025

Applicant/Owner: AEP State: OH Sampling Point: W-AGS-002-UPL

Investigator(s): AGS/TJK Section, Township, Range: S24 T17N R7W

Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): LRR N, MLRA 126 Lat: 40.664307 Long: -81.214751 Datum: NAD83

Soil Map Unit Name: GfB: Glenford silt loam, 3 to 8 percent slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** ____
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
W-AGS-002-UPL is an upland data point located in an old field habitat. The soil is disturbed from compaction and is rocky throughout the profile. Wetland hydrology, vegetation, and soils are not present. The Antecedent Precipitation Tool indicates that "normal conditions" were present at the time of the field investigation.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:
One secondary indicator is present. Wetland hydrology criteria is not met. The source of hydrology is precipitation.

SOIL

Sampling Point: W-AGS-002-UPL

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/3	100					Loamy/Clayey	
10+								Rocky shovel refusal

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10

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

Remarks:

Hydric soil is not present. The soil is disturbed from compaction and rocky throughout the profile. There is shovel refusal at 10 inches.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Krone Projects City/County: Carroll County Sampling Date: 06/24/2025
Applicant/Owner: AEP State: OH Sampling Point: W-AGS-001-PEM
Investigator(s): AGS/TJK Section, Township, Range: S24 T17N R7W
Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR or MLRA): LRR N, MLRA 126 Lat: 40.666345 Long: -81.217628 Datum: NAD83
Soil Map Unit Name: Ho: Holly silt loam, ponded NWI classification: R5UBH
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
W-AGS-001 is a PEM, abutting wetland that is part of a PEM/PSS/PFO complex within the floodplain of S-AGS-001 and S-AGS-002. Stream flooding appears frequent in this area. This wetland runs along the boundary of a known NWI wetland. Wetland hydrology, vegetation, and soils are present. Vegetation is disturbed from right-of-way maintenance. The Anticedent Precipitation Tool indicates that "normal conditions" were present at the time of the field investigation.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
One primary and four secondary indicators are present. The sources of hyrology are precipitation and stream flooding.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-AGS-001-PEM

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 5')			
1. *Carex trichocarpa*	45	Yes	OBL
2. *Phalaris arundinacea*	15	Yes	FACW
3. *Symplocarpus foetidus*	15	Yes	OBL
4. *Impatiens capensis*	10	No	FACW
5. *Scirpus atrovirens*	5	No	OBL
6. *Glyceria striata*	5	No	OBL
7. *Dichanthelium clandestinum*	5	No	FAC
8.			
9.			
10.			
11.			
	100 =Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

Woody Vine – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is present.

SOIL

Sampling Point: W-AGS-001-PEM

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 4/2	90	7.5YR 5/4	10	C	PL/M	Sandy	Distinct redox concentrations
12-20	7.5YR 3/2	90	7.5YR 5/4	5	C	M	Sandy	Distinct redox concentrations
			7.5YR 4/4	5	C	M		Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Hydric soil is present (S5).

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Krone Projects City/County: Carroll County Sampling Date: 07/18/2025

Applicant/Owner: AEP State: OH Sampling Point: W-AGS-001-PFO

Investigator(s): AGS/TJK Section, Township, Range: S24 T17N R7W

Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1

Subregion (LRR or MLRA): LRR N, MLRA 126 Lat: 40.666170 Long: -81.216600 Datum: NAD83

Soil Map Unit Name: Ho: Holly silt loam, ponded NWI classification: R5UBH

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
W-AGS-001 is a PFO, abutting wetland that is part of a PEM/PSS/PFO complex within the floodplain of S-AGS-001. Stream flooding appears frequent in this area. This wetland runs along the boundary of a known NWI wetland. Wetland hydrology, vegetation, and soils are present. The Antecedent Precipitation Tool indicates that "normal conditions" were present at the time of the field investigation.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Three primary and two secondary indicators are present. The sources of hyrology are precipitation and stream flooding.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-AGS-001-PFO

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Prunus serotina*	15	Yes	FACU
2. *Ulmus americana*	10	Yes	FACW
3. *Quercus alba*	5	No	FACU
4.			
5.			
6.			
7.			
	30	=Total Cover	
50% of total cover: 15		20% of total cover:	6

Sapling/Shrub Stratum (Plot size: 15')			
1. *Rosa multiflora*	5	Yes	FACU
2. *Ulmus americana*	5	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10	=Total Cover	
50% of total cover: 5		20% of total cover:	2

Herb Stratum (Plot size: 5')			
1. *Symplocarpus foetidus*	50	Yes	OBL
2. *Polygonum virginianum*	5	No	FAC
3. *Dryopteris intermedia*	5	No	FACU
4. *Polystichum acrostichoides*	5	No	FACU
5. *Viola sororia*	5	No	FAC
6.			
7. *Dichanthelium clandestinum*			
8.			
9.			
10.			
11.			
	70	=Total Cover	
50% of total cover: 35		20% of total cover:	14

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

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

Definitions of Four Vegetation Strata:

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

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

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

Woody Vine – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is present.

SOIL

Sampling Point: W-AGS-001-PFO

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	2.5Y 4/2	95	7.5YR 5/4	5	C	PL/M	Sandy	Distinct redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Hydric soil is present (S5).

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Krone Projects City/County: Carroll County Sampling Date: 06/24/2025
Applicant/Owner: AEP State: OH Sampling Point: W-AGS-001-PSS
Investigator(s): AGS/TJK Section, Township, Range: S24 T17N R7W
Landform (hillside, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRR or MLRA): LRR N, MLRA 126 Lat: 40.666586 Long: -81.217745 Datum: NAD83
Soil Map Unit Name: Ho: Holly silt loam, ponded NWI classification: R5UBH
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X , Soil ____ , or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____ , Soil ____ , or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
W-AGS-001 is a PSS, abutting wetland that is part of a PEM/PSS/PFO complex within the floodplain of S-AGS-001. Stream flooding appears frequent in this area. This wetland runs along the boundary of a known NWI wetland. Wetland hydrology, vegetation, and soils are present. Vegetation is disturbed from right-of-way maintenance. The Antecedent Precipitation Tool Indicates that "normal conditions" were present at the time of the field investigation.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:
Several primary and secondary indicators are present. The sources of hyrology are precipitation and stream flooding.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-AGS-001-PSS

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rubus allegheniensis*	30	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 =Total Cover		
50% of total cover: 15	20% of total cover:	6	
Herb Stratum (Plot size: 5')			
1. *Carex trichocarpa*	40	Yes	OBL
2. *Onoclea sensibilis*	10	No	FACW
3. *Symplocarpus foetidus*	10	No	OBL
4. *Cirsium arvense*	5	No	FACU
5. *Phytolacca americana*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	70 =Total Cover		
50% of total cover: 35	20% of total cover:	14	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	50	x 1 =	50
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	100 (A)		230 (B)
Prevalence Index = B/A =			2.30

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

Woody Vine – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Hydrophytic vegetation is present.

SOIL

Sampling Point: W-AGS-001-PSS

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	90	10YR 5/6	10	C	PL/M	Loamy/Clayey	Prominent redox concentrations
12-20	10YR 5/2	90	10YR 5/6	10	C	PL/M	Loamy/Clayey	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Iron Monosulfide (A18)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Mucky Mineral (F1) **(MLRA 136)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 122, 136)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147, 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) **(MLRA 147, 148)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- ___ Red Parent Material (F21) **(outside MLRA 127, 147, 148)**
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Hydric soil is present (F3).

Version 5.0	**Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization**
	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 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.

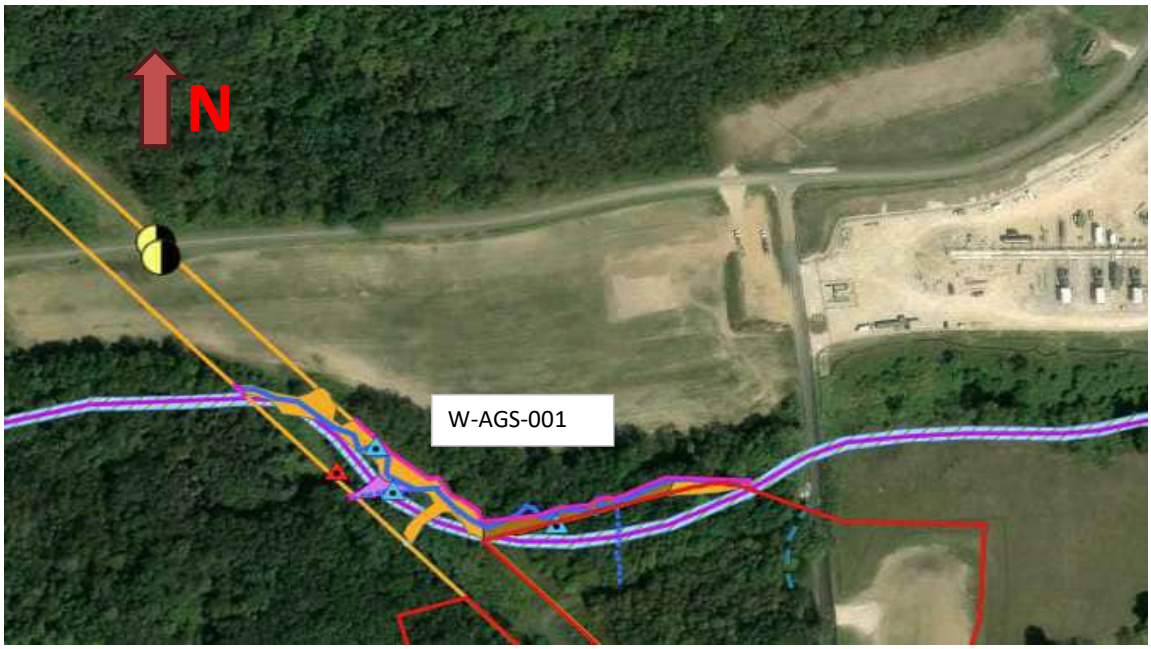
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual 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: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name:	**AGS, TJK**
Date:	**6/24/2025**
Affiliation:	**AECOM**
Address:	**707 Grant Street, 5th Floor, Pittsburgh, PA 15219**
Phone Number:	**412-523-2423**
e-mail address:	austin.sige@aecom.com
Name of Wetland:	**W-AGS-001**
Vegetation Communit(ies):	**PEM/PSS/PFO**
HGM Class(es):	**Depressional/Riverine**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

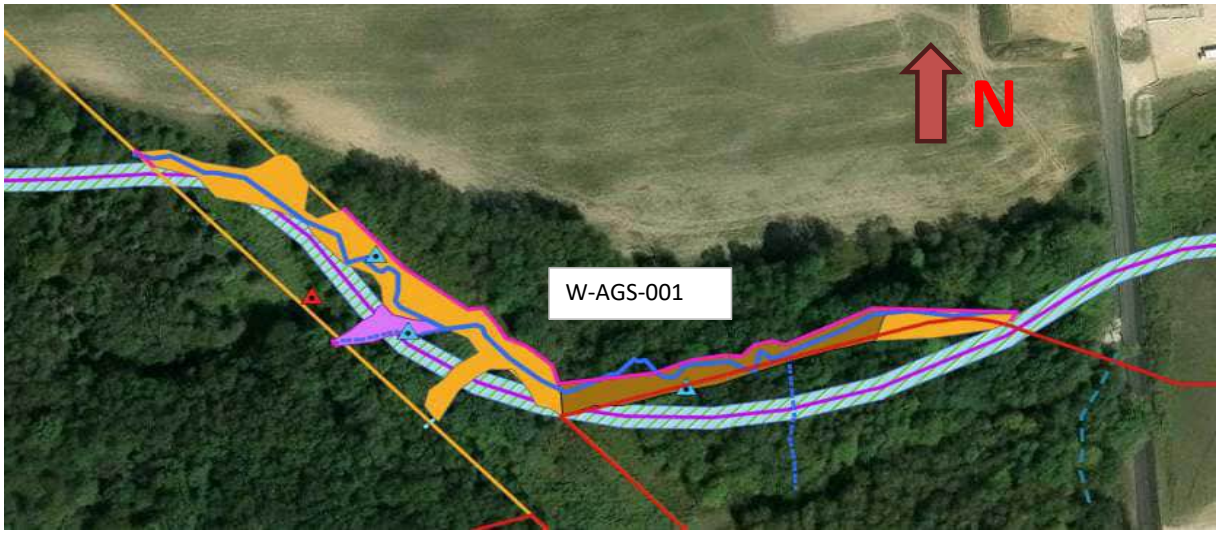


Lat/Long or UTM Coordinate:	**40.666586, -81.217745**
USGS Quad Name:	**Malvern**
County:	**Carroll**
Township:	**17N**
Section and Subsection:	**24**
Hydrologic Unit Code:	**50400010605**
Site Visit:	**6/24/2025**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-AGS-001		
Wetland Size (delineated acres):	0.82	Wetland Size (Estimated total acres):	1.44

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Total extent of wetland was determined using historical aerial photography



Comments, Narrative Discussion, Justification of Category Changes:

W-AGS-001 is a PEM/PSS/PFO complex within the floodplain of S-AGS-001 and S-AGS-002. Stream flooding appears frequent in this area. This wetland runs along the boundary of a known NWI wetland. Wetland hydrology, vegetation, and soils are present.

Final score:	52.5	Category:	2

Wetland ID:	W-AGS-001

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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
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.		X

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

Wetland ID:	W-AGS-001

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), http://www.dnr.state.oh.us/dnap . 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	***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	***NO** 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
6	**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	***NO** 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
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	***NO** Go to Question 8b

Wetland ID:	W-AGS-001

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	*NO 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	*NO 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 Go to Question 10	*NO Go to Question 9c
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 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 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	*NO Complete Quantitative Rating

Wetland ID:	W-AGS-001

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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 sartwellii*
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*
	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*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Wetland ID:	W-AGS-001

Site:	Krone Projects	Rater(s):	AGS, TJK	Date:	6/24/2025

Field ID:

W-AGS-001

Delineated acres:	0.82
Total acres:	1.44

Metric 1. Wetland Area (size).

2.0 | 2.0 (max 6 pts | subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

7.0 | 9.0 (max 14 pts. | subtotal)

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

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

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

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

Metric 3. Hydrology.

24.0 | 33.0 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [x] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

11.5 | 44.5 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [x] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

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

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] farming
- [ ] nutrient enrichment

44.5 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-AGS-001

Site:	Krone Projects	Rater(s):	AGS, TJK	Date:	6/24/2025

Field ID:

W-AGS-001

44.5
subtotal this page

0.0 max 10 pts. | **44.5** subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

8.0 max 20pts. | **52.5** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [2] Emergent
- [2] Shrub
- [2] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [x] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

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

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [x] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

52.5	**TOTAL (Max 100 pts)**
2	**Category**

Wetland ID:	W-AGS-001

ORAM Summary Worksheet

		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	2		
	Metric 2. Buffers and surrounding land use	7		
	Metric 3. Hydrology	24		
	Metric 4. Habitat	11.5		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	8		
	TOTAL SCORE	52.5		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	W-AGS-001

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 over- categorized 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?	***YES** 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	***NO** 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.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	**Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization**
	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 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.

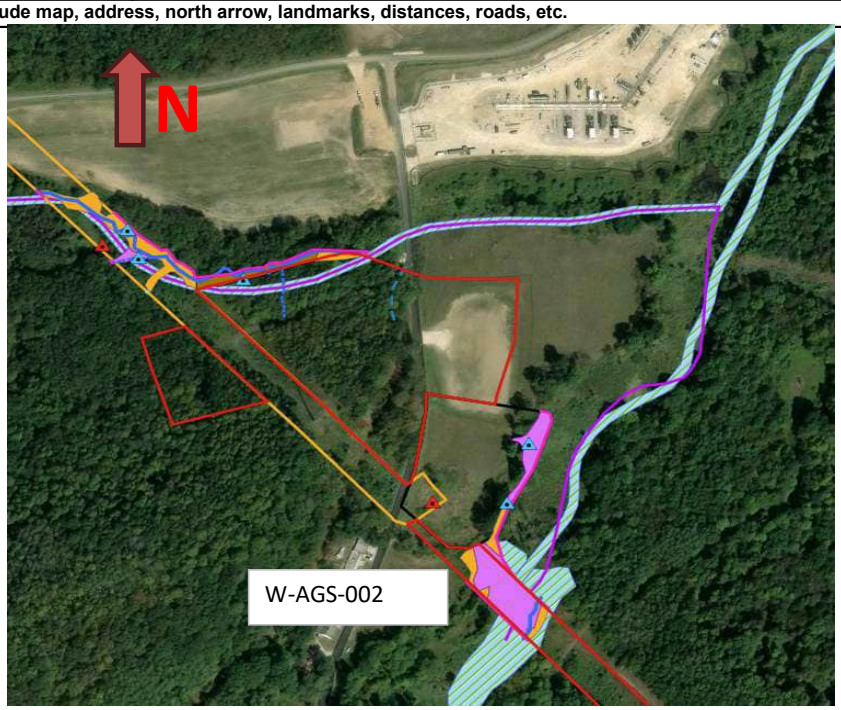
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual 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: http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx

Background Information

Name:	**AGS, TJK**
Date:	**6/24/2025**
Affiliation:	**AECOM**
Address:	**707 Grant Street, 5th Floor, Pittsburgh, PA 15219**
Phone Number:	**412-523-2423**
e-mail address:	austin.sige@aecom.com
Name of Wetland:	**W-AGS-002**
Vegetation Communit(ies):	**PEM/PSS/PFO**
HGM Class(es):	**Depressional/Riverine**

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.

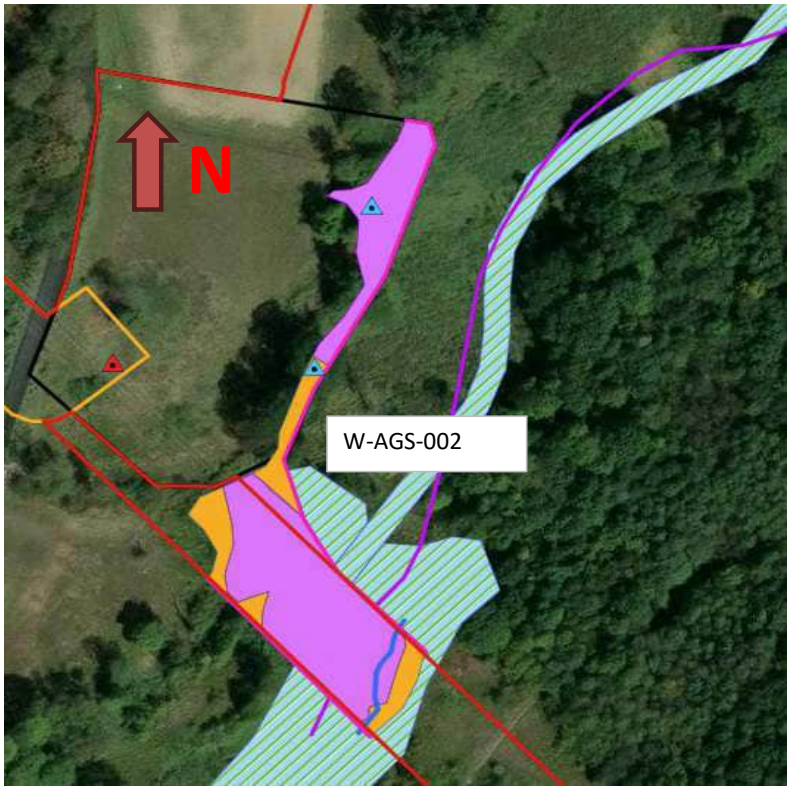


Lat/Long or UTM Coordinate:	**40.664794, -81.217745 | 40.664295, -81.214019**
USGS Quad Name:	**Malvern**
County:	**Carroll**
Township:	**17N**
Section and Subsection:	**24**
Hydrologic Unit Code:	**50400010605**
Site Visit:	**6/24/2025**
National Wetland Inventory Map:	**See Figure 2**
Ohio Wetland Inventory Map:	**See Figure 2**
Soil Survey:	**See Figure 2**
Delineation report/map:	**See Figure 3**

Name of Wetland:	W-AGS-002		
Wetland Size (delineated acres):	1.01	Wetland Size (Estimated total acres):	10.17

Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.

Total extent of wetland was determined using historical aerial photography.



Comments, Narrative Discussion, Justification of Category Changes:

W-AGS-002 is a PEM, abutting wetland that is part of a PEM/PSS wetland complex, likely with PFO sections outside of the survey area. This wetland crosses two NWI wetlands and one NHD stream (S-AGS-004). Wetland hydrology, vegetation, and soils are present.

W-AGS-002 is a PSS, abutting wetland that is part of a PEM/PSS wetland complex, likely with PFO sections outside of the survey area. This wetland crosses one NWI wetland and is nearby to an NHD stream (S-AGS-004), that provides hydrology to the area. Wetland hydrology, vegetation, and soils are present.

Final score:	54	Category:	2

Wetland ID:	W-AGS-002

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.	X	
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.	X	
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.	X	
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.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
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.		X

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

Wetland ID:	W-AGS-002

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), http://www.dnr.state.oh.us/dnap . 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	***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	***NO** 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
6	**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	***NO** 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
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	***NO** Go to Question 8b

Wetland ID:	W-AGS-002

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	*NO 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	*NO 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 Go to Question 10	*NO Go to Question 9c
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 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 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	*NO Complete Quantitative Rating

Wetland ID:	W-AGS-002

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	oak 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 sartwellii*
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*
	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*		
	Solidago ohioensis			
	Tofieldia glutinosa			
	Triglochin maritimum			
	Triglochin palustre			

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

Wetland ID:	W-AGS-002

Site:	Krone Projects	Rater(s):	AGS, TJK	Date:	6/24/2025

Field ID:

W-AGS-002

Delineated acres:	1.01
Total acres:	10.17

Metric 1. Wetland Area (size).

4.0 (max 6 pts) | 4.0 (subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

8.0 (max 14 pts.) | 12.0 (subtotal)

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

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

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

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

Metric 3. Hydrology.

22.0 (max 30 pts.) | 34.0 (subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

- [ ] >0.7 (27.6in) (3)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [x] <0.4m (<15.7in) (1)

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

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [x] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] Other:

Metric 4. Habitat Alteration and Development.

14.0 (max 20 pts.) | 48.0 (subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [ ] Recovering (2)
- [ ] Recent or no recovery (1)

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [x] Good (5)
- [ ] Moderately good (4)
- [ ] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

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

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] farming
- [ ] nutrient enrichment

48.0 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-AGS-002

Site:	Krone Projects	Rater(s):	AGS, TJK	Date:	6/24/2025

Field ID:

W-AGS-002

48.0 subtotal this page

0.0 max 10 pts. | **48.0** subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

6.0 max 20pts. | **54.0** subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

	Aquatic bed
2	Emergent
1	Shrub
1	Forest
	Mudflats
	Open water
	Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

	High (5)
	Moderately high(4)
x	Moderate (3)
	Moderately low (2)
	Low (1)
	None (0)

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

54.0	**TOTAL (Max 100 pts)**
2	**Category**

Wetland ID:	W-AGS-002

ORAM Summary Worksheet

		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	4		
	Metric 2. Buffers and surrounding land use	8		
	Metric 3. Hydrology	22		
	Metric 4. Habitat	14		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersion, microtopography	6		
	TOTAL SCORE	54		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	W-AGS-002

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 over- categorized 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?	***YES** 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	***NO** 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.

Final Category

Choose one	Category 1	***Category 2**	Category 3	

End of Ohio Rapid Assessment Method for Wetlands.

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing North

W-AGS-001

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing East

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing South

W-AGS-001

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing West

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing Soil

W-AGS-001

Date:

June 24, 2025

Description:

PSS Wetland

Category 2

Facing North

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001

Date:

June 24, 2025

Description:

PSS Wetland

Category 2

Facing East

W-AGS-001

Date:

June 24, 2025

Description:

PSS Wetland

Category 2

Facing South

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001

Date:

June 24, 2025

Description:

PSS Wetland

Category 2

Facing West

W-AGS-001

Date:

June 24, 2025

Description:

PSS Wetland

Category 2

Facing Soil

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001

Date:

July 18, 2025

Description:

PFO Wetland

Category 2

Facing North

W-AGS-001

Date:

July 18, 2025

Description:

PFO Wetland

Category 2

Facing East

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001	
Date: July 18, 2025	
Description: PFO Wetland Category 2 Facing South	

W-AGS-001	
Date: July 18, 2025	
Description: PFO Wetland Category 2 Facing West	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001

Date:

July 18, 2025

Description:

PFO Wetland

Category 2

Facing Soil

W-AGS-001-UPL

Date:

June 24, 2025

Description:

Upland Datapoint

Facing North

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001-UPL

Date:

June 24, 2025

Description:

Upland Datapoint

Facing East

W-AGS-001-UPL

Date:

June 24, 2025

Description:

Upland Datapoint

Facing South

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-001-UPL

Date:

June 24, 2025

Description:

Upland Datapoint

Facing West

W-AGS-001-UPL

Date:

June 24, 2025

Description:

Upland Datapoint

Facing Soil

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-002

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing North

W-AGS-002

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing East

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-002

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing South

W-AGS-002

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing West

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-002

Date:

June 24, 2025

Description:

PEM Wetland

Category 2

Facing Soil

W-AGS-002

Date:

June 24, 2025

Description:

PSS Wetland

Category 2

Facing North

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-002
Date: June 24, 2025
Description: PSS Wetland Category 2 Facing East

W-AGS-002
Date: June 24, 2025
Description: PSS Wetland Category 2 Facing South

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

W-AGS-002
Date: June 24, 2025
Description: PSS Wetland Category 2 Facing West

W-AGS-002
Date: June 24, 2025
Description: PSS Wetland Category 2 Facing Soil

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

UPL-AGS-002

Date:

June 24, 2025

Description:

Upland Datapoint

Facing North

UPL-AGS-002

Date:

June 24, 2025

Description:

Upland Datapoint

Facing East

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

UPL-AGS-002

Date:

June 24, 2025

Description:

Upland Datapoint

Facing South

UPL-AGS-002

Date:

June 24, 2025

Description:

Upland Datapoint

Facing West

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Wetland Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

UPL-AGS-002

Date:

June 24, 2025

Description:

Upland Datapoint

Facing Soil

APPENDIX C

OEPA STREAM DATA FORMS AND PHOTOGRAPHIC RECORD

S-AGS-001 PER

Class III PHW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) **51**

SITE NAME/LOCATION: **Krone Projects**

SITE NUMBER: **S001** RIVER BASIN: **Muskingum** DRAINAGE AREA (mi²): **0.20**

LENGTH OF STREAM REACH (ft): **200** LAT.: **40.66653** LONG.: **-81.21776** RIVER CODE: _____ RIVER MILE: _____

DATE: **06/24/25** SCORER: **AGS** COMMENTS: **S-AGS-001-PER | HUC12: 050400010605**

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0	☑	SILT [3 pt]	55
☐	BOULDER (>256 mm) [16 pts]	0	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0
☐	BEDROCK [16 pt]	0	☐	FINE DETRITUS [3 pts]	0
☐	COBBLE (65-256 mm) [12 pts]	10	☐	CLAY or HARDPAN [0 pt]	0
☑	GRAVEL (2-64 mm) [9 pts]	20	☐	MUCK [0 pts]	0
☐	SAND (<2 mm) [6 pts]	15	☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **10** (A) Substrate Percentage Check (B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **12** **TOTAL NUMBER OF SUBSTRATE TYPES:** **4**

HHEI Metric Points

Substrate Max = 40

16

A + B

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

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

COMMENTS: 5.08 cm **MAXIMUM POOL DEPTH** (Inches): **2.00**

Pool Depth Max = 30

15

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

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

COMMENTS: 1.524 m **AVERAGE BANKFULL WIDTH** (Feet): **5.00**

Bankfull Width Max=30

20

This information must also be completed

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

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

COMMENTS: _____

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

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

COMMENTS: _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Sandy Creek** Distance from Evaluated Stream **1.61**

☐ 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: **Malvern** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Carroll** Township / City: **Brown Township**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **06/21/25** Quantity: **0.10**

Photograph Information: **Upstream, downstream, substrate**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **70** **Overall Stability of BOTH Stream Banks (check one)**: Stable ☐ Moderately Stable ☑ Unstable ☐

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

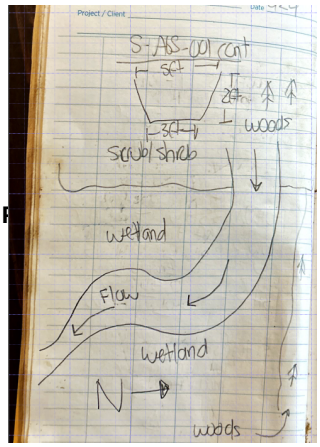
Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

Comments Regarding Biology: **None observed**

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



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Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) **49**

SITE NAME/LOCATION **Krone Projects**

SITE NUMBER **S001** RIVER BASIN **Muskingum** DRAINAGE AREA (mi²) **0.20**

LENGTH OF STREAM REACH (ft) **200** LAT. **40.66622** LONG. **-81.21635** RIVER CODE _____ RIVER MILE _____

DATE **07/18/25** SCORER **AGS** COMMENTS **S-AGS-001-PER | HUC12: 050400010605**

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0	☐	SILT [3 pt]	0
☐	BOULDER (>256 mm) [16 pts]	0	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0
☐	BEDROCK [16 pt]	0	☐	FINE DETRITUS [3 pts]	0
☐	COBBLE (65-256 mm) [12 pts]	0	☐	CLAY or HARDPAN [0 pt]	0
☐	GRAVEL (2-64 mm) [9 pts]	5	☐	MUCK [0 pts]	0
☑	SAND (<2 mm) [6 pts]	95	☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0** **(A)** Substrate Percentage Check **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **12** **TOTAL NUMBER OF SUBSTRATE TYPES:** **2**

HHEI Metric Points

Substrate Max = 40

14

A + B

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

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

COMMENTS _____ **MAXIMUM POOL DEPTH** (Inches): **2.00**

Pool Depth Max = 30

15

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

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

COMMENTS _____ **AVERAGE BANKFULL WIDTH** (Feet): **5.50**

Bankfull Width Max=30

20

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Sandy Creek** Distance from Evaluated Stream **1.55**

☐ 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: **Malvern** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Carroll** Township / City: **Brown Township**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **07/17/25** Quantity: **0.10**

Photograph Information: **Upstream, downstream, substrate**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **10** **Overall Stability of BOTH Stream Banks (check one)**: Stable ☐ Moderately Stable ☑ Unstable ☐

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

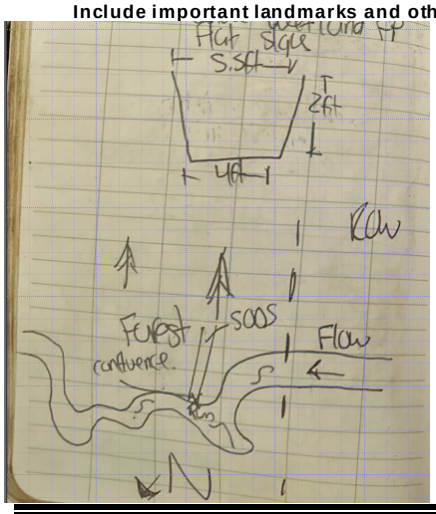
Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

Comments Regarding Biology: **None observed**

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



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S-AGS-002 INT

Class II PHW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) **43**

SITE NAME/LOCATION **Krone Projects**

SITE NUMBER **S002** RIVER BASIN **Muskingum** DRAINAGE AREA (mi²) **0.06**

LENGTH OF STREAM REACH (ft) **118** LAT. **40.66631** LONG. **-81.21768** RIVER CODE _____ RIVER MILE _____

DATE **06/24/25** SCORER **AGS** COMMENTS **S-AGS-002-INT | HUC12: 050400010605**

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0	☑	SILT [3 pt]	20
☐	BOULDER (>256 mm) [16 pts]	0	☐	LEAF PACK/WOODY DEBRIS [3 pts]	10
☐	BEDROCK [16 pt]	0	☐	FINE DETRITUS [3 pts]	0
☐	COBBLE (65-256 mm) [12 pts]	10	☐	CLAY or HARDPAN [0 pt]	0
☐	GRAVEL (2-64 mm) [9 pts]	0	☐	MUCK [0 pts]	0
☑	SAND (<2 mm) [6 pts]	60	☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **10** **(A)** Substrate Percentage Check **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **9** **TOTAL NUMBER OF SUBSTRATE TYPES:** **4**

HHEI Metric Points

Substrate Max = 40

13

A + B

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

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

COMMENTS 5.08 cm **MAXIMUM POOL DEPTH** (Inches): **2.00**

Pool Depth Max = 30

15

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

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

COMMENTS 1.2192 m **AVERAGE BANKFULL WIDTH** (Feet): **4.00**

Bankfull Width Max=30

15

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Sandy Creek** Distance from Evaluated Stream **1.65**

☐ 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: **Malvern** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Carroll** Township / City: **Brown Township**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **06/21/25** Quantity: **0.10**

Photograph Information: **Upstream, downstream, substrate**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **50** **Overall Stability of BOTH Stream Banks (check one)**: Stable ☐ Moderately Stable ☑ Unstable ☐

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

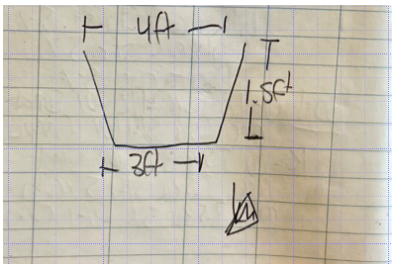
Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

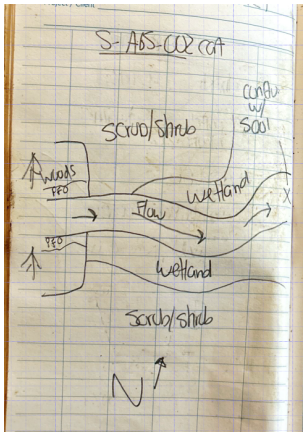
Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: **None observed**

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





Save as pdf Reset Form

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) **13**

SITE NAME/LOCATION **Krone Projects**

SITE NUMBER **S003** RIVER BASIN **Muskingum** DRAINAGE AREA (mi²) **0.01**

LENGTH OF STREAM REACH (ft) **14** LAT. **40.66606** LONG. **-81.21754** RIVER CODE _____ RIVER MILE _____

DATE **06/24/25** SCORER **AGS** COMMENTS **S-AGS-003-EPH| HUC12: 050400010605**

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0	☑	SILT [3 pt]	60
☐	BOULDER (>256 mm) [16 pts]	0	☑	LEAF PACK/WOODY DEBRIS [3 pts]	40
☐	BEDROCK [16 pt]	0	☐	FINE DETRITUS [3 pts]	0
☐	COBBLE (65-256 mm) [12 pts]	0	☐	CLAY or HARDPAN [0 pt]	0
☐	GRAVEL (2-64 mm) [9 pts]	0	☐	MUCK [0 pts]	0
☐	SAND (<2 mm) [6 pts]	0	☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0** **(A)** Substrate Percentage Check **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **6** **TOTAL NUMBER OF SUBSTRATE TYPES:** **2**

HHEI Metric Points

Substrate Max = 40

8

A + B

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

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

COMMENTS _____ **MAXIMUM POOL DEPTH** (Inches): **0.00**

Pool Depth Max = 30

0

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

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

COMMENTS **0.9144** **AVERAGE BANKFULL WIDTH** (Feet): **3.00**

Bankfull Width Max=30

5

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Sandy Creek** Distance from Evaluated Stream **1.68**

☐ 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: **Malvern** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Carroll** Township / City: **Brown Township**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **Y** Date of last precipitation: **06/21/25** Quantity: **0.10**

Photograph Information: **Upstream, downstream, substrate**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **10** **Overall Stability of BOTH Stream Banks (check one)**: Stable ☐ Moderately Stable ☑ Unstable ☐

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

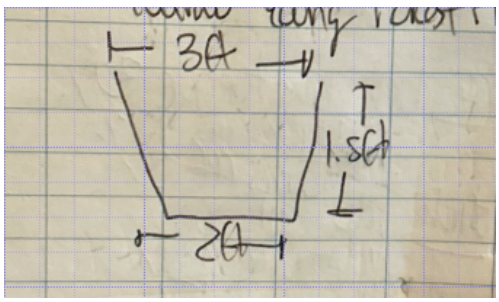
Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

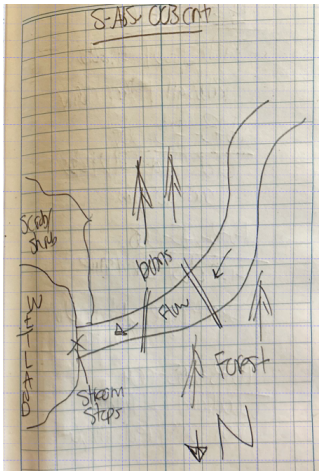
Frogs or Tadpoles Observed? (Y/N) **N** Voucher? (Y/N) **N** Aquatic Macroinvertebrates Observed? (Y/N) **N** Voucher? (Y/N) **N**

Comments Regarding Biology: **None observed**

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





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Headwater Habitat Evaluation Index Field Form

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

SITE NAME/LOCATION **Krone Projects**

SITE NUMBER **S004** RIVER BASIN **Muskingum** DRAINAGE AREA (mi²) **0.88**

LENGTH OF STREAM REACH (ft) **142** LAT. **40.66337** LONG. **-81.21377** RIVER CODE _____ RIVER MILE _____

DATE **07/18/25** SCORER **AGS** COMMENTS **S-AGS-004-PER | HUC12: 050400010605**

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0	☑	SILT [3 pt]	30
☐	BOULDER (>256 mm) [16 pts]	0	☐	LEAF PACK/WOODY DEBRIS [3 pts]	0
☐	BEDROCK [16 pt]	0	☐	FINE DETRITUS [3 pts]	0
☐	COBBLE (65-256 mm) [12 pts]	0	☑	CLAY or HARDPAN [0 pt]	60
☐	GRAVEL (2-64 mm) [9 pts]	0	☐	MUCK [0 pts]	0
☐	SAND (<2 mm) [6 pts]	10	☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock **0** **(A)** Substrate Percentage Check **(B)**

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **3** **TOTAL NUMBER OF SUBSTRATE TYPES:** **3**

HHEI Metric Points

Substrate Max = 40

6

A + B

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

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

COMMENTS _____ **MAXIMUM POOL DEPTH** (Inches): **5.00**

Pool Depth Max = 30

25

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

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

COMMENTS _____ **AVERAGE BANKFULL WIDTH** (Feet): **4.00**

Bankfull Width Max=30

15

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Sandy Creek** Distance from Evaluated Stream **1.53**

☐ 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: **Malvern** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Carroll** Township / City: **Brown Township**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **07/17/25** Quantity: **0.10**

Photograph Information: **Upstream, downstream, substrate**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **90** **Overall Stability of BOTH Stream Banks (check one)**: Stable ☐ Moderately Stable ☑ Unstable ☐

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

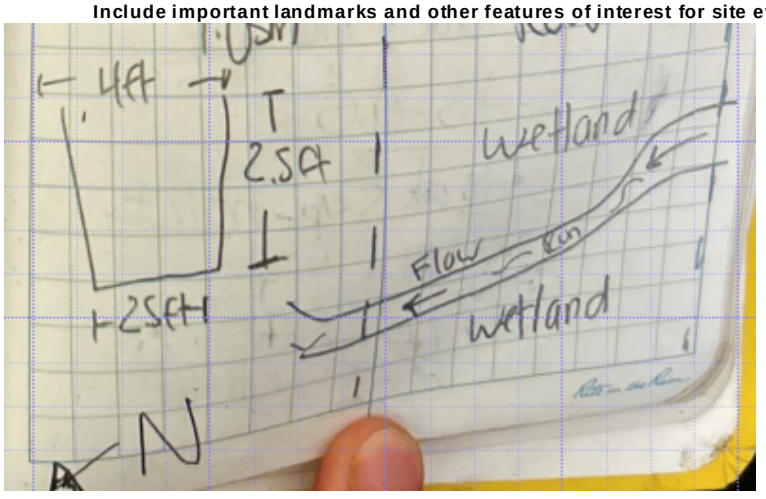
Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

Comments Regarding Biology: _____

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

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



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S-AGS-005 INT

Class II PHW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) **40**

SITE NAME/LOCATION: **Krone Projects**

SITE NUMBER: **S005** RIVER BASIN: **Muskingum** DRAINAGE AREA (mi²): **0.01**

LENGTH OF STREAM REACH (ft): **157** LAT.: **40.66601** LONG.: **-81.21622** RIVER CODE: _____ RIVER MILE: _____

DATE: **07/18/25** SCORER: **AGS** COMMENTS: **S-AGS-005-INT | HUC12: 050400010605**

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

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

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

TYPE		PERCENT
☐	BLDR SLABS [16 pts]	0
☐	BOULDER (>256 mm) [16 pts]	0
☐	BEDROCK [16 pt]	0
☐	COBBLE (65-256 mm) [12 pts]	0
☑	GRAVEL (2-64 mm) [9 pts]	40
☐	SAND (<2 mm) [6 pts]	0

TYPE		PERCENT
☑	SILT [3 pt]	40
☐	LEAF PACK/WOODY DEBRIS [3 pts]	20
☐	FINE DETRITUS [3 pts]	0
☐	CLAY or HARDPAN [0 pt]	0
☐	MUCK [0 pts]	0
☐	ARTIFICIAL [3 pts]	0

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: **0** (A)

Substrate Percentage Check

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: **12**

TOTAL NUMBER OF SUBSTRATE TYPES: **3**

HHEI Metric Points

Substrate Max = 40

15

A + B

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

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

COMMENTS _____ **MAXIMUM POOL DEPTH** (Inches): **0.50**

Pool Depth Max = 30

5

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

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

COMMENTS _____ **AVERAGE BANKFULL WIDTH** (Feet): **8.00**

Bankfull Width Max=30

20

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: **Sandy Creek** Distance from Evaluated Stream **1.55**

☐ 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: **Malvern** NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: **Carroll** Township / City: **Brown Township**

MISCELLANEOUS

Base Flow Conditions? (Y/N): **N** Date of last precipitation: **07/17/25** Quantity: **0.10**

Photograph Information: **Upstream, downstream, substrate**

Elevated Turbidity? (Y/N): **N** Canopy (% open): **20** **Overall Stability of BOTH Stream Banks (check one)**: Stable ☐ Moderately Stable ☑ Unstable ☐

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

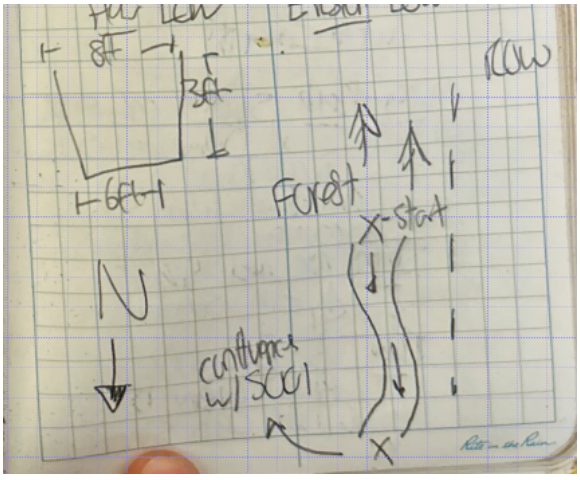
Fish Observed? (Y/N) **N** Voucher? (Y/N) **N** Salamanders Observed? (Y/N) **N** Voucher? (Y/N) **N**

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

Comments Regarding Biology: **None observed**

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



Save as pdf Reset Form

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

S-AGS-001
Date: June 24, 2025
Description: Perennial HHEI Assessment Point 1 Facing Upstream

S-AGS-001
Date: June 24, 2025
Description: Perennial HHEI Assessment Point 1 Facing Downstream

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

S-AGS-001

Date:

June 24, 2025

Description:

Perennial

HHEI Assessment Point 1

Facing Substrate

S-AGS-001

Date:

July 18, 2025

Description:

Perennial

HHEI Assessment Point 2

Facing Upstream

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

S-AGS-001

Date:

July 18, 2025

Description:

Perennial

HHEI Assessment Point 2

Facing Downstream

S-AGS-001

Date:

July 18, 2025

Description:

Perennial

HHEI Assessment Point 2

Facing Substrate

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

S-AGS-002
Date: June 24, 2025
Description: Intermittent Facing Upstream

S-AGS-002
Date: June 24, 2025
Description: Intermittent Facing Downstream

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

S-AGS-002

Date:

June 24, 2025

Description:

Intermittent

Facing Substrate

S-AGS-003

Date:

June 24, 2025

Description:

Ephemeral

Facing Upstream

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

S-AGS-003
Date: June 24, 2025
Description: Ephemeral Facing Downstream

S-AGS-003
Date: June 24, 2025
Description: Ephemeral Facing Substrate

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

S-AGS-004
Date: July 18, 2025
Description: Perennial Facing Upstream

S-AGS-004
Date: June 24, 2025
Description: Perennial Facing Downstream

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

S-AGS-004

Date:

June 24, 2025

Description:

Perennial

Facing Substrate

S-AGS-005

Date:

July 18, 2025

Description:

Intermittent

Facing Upstream

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Stream Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

S-AGS-005
Date: July 18, 2025
Description: Intermittent Facing Downstream

S-AGS-005
Date: July 18, 2025
Description: Intermittent Facing Substrate

APPENDIX D

UPLAND DRAINAGE FEATURE PHOTOGRAPHIC RECORD

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD

Upland Drainage Feature Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

UDF-AGS-001 **Date:** July 18, 2025 **Description:** Upland Drainage Feature Facing Upgradient	

UDF-AGS-001 **Date:** July 18, 2025 **Description:** Upland Drainage Feature Facing Downgradient	

AECOM Imagine it. Delivered.	**PHOTOGRAPHIC RECORD** **Upland Drainage Feature Photograph Record**	
Client Name: AEP	**Site Location:** Krone Projects	**Project No.** 60757664, 60757802, 60757803

UDF-AGS-001	
Date: July 18, 2025	
Description: Upland Drainage Feature Facing Substrate	

APPENDIX E

HABITAT PHOTOGRAPHIC RECORD

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Habitat Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

HAB-AGS-001

Date:

June 24, 2025

Description:

Scrub-Shrub

Facing West

HAB-AGS-002

Date:

June 24, 2025

Description:

Scrub-Shrub

Facing South

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Habitat Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

HAB-AGS-003

Date:

June 24, 2025

Description:

Old Field

Facing East

HAB-AGS-004

Date:

June 24, 2025

Description:

Scrub-Shrub

Facing West

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Habitat Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

HAB-AGS-005

Date:

June 24, 2025

Description:

Woodlands

Facing South

HAB-AGS-006

Date:

June 24, 2025

Description:

Old Field

Facing North

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Habitat Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

HAB-AGS-007

Date:

July 18, 2025

Description:

Agricultural Row-Crops

Facing North

HAB-AGS-008

Date:

July 18, 2025

Description:

Scrub-Shrub

Facing West

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Habitat Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

HAB-AGS-009	
Date: July 18, 2025 **Description:** Woodlands Facing South	

HAB-AGS-010	
Date: July 18, 2025 **Description:** Woodlands Facing North	

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Habitat Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

HAB-AGS-011

Date:

July 18, 2025

Description:

Scrub-Shrub

Facing South

HAB-AGS-012

Date:

July 18, 2025

Description:

Landscaped

Facing West

AECOM Imagine it. Delivered.

PHOTOGRAPHIC RECORD
Habitat Photograph Record

Client Name:	Site Location:	Project No.
AEP	Krone Projects	60757664, 60757802, 60757803

HAB-AGS-013

Date:

July 18, 2025

Description:

Old Field

Facing West

APPENDIX F

AGENCY CORRESPONDENCE

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

August 1, 2025

Project Code: 2025-0116319

Dear Zoe Horns:

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

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

Seasonal Restrictions for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. If bridges or culverts will be impacted, we recommend reviewing Appendix K in the most recent "Range-Wide Indiana Bat & Northern Long-Eared Bat Survey Guidelines" to determine if the bridge/culvert may be suitable roost habitat. We recommend impacts to suitable bridges and culverts only occur from October 1 and March 31. These seasonal restrictions are recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

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

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

On December 12, 2024 the Service proposed to list the monarch butterfly (*Danaus plexippus plexippus*) as threatened under the ESA. Monarch butterflies are found throughout Ohio and some populations migrate vast distances across multiple generations each year. Many monarchs fly between the U.S., Mexico and Canada – a journey of over 3,000 miles. Monarch populations have declined significantly in recent years. Threats include habitat loss – particularly the loss of milkweed, the monarch caterpillar's sole food source – and mortality resulting from pesticide use. The Service recommends the following actions to maintain habitat and avoid impacts to monarchs in Ohio: revegetate disturbed areas with native plant species including nectar-producing plants and milkweed endemic to the area; limit mowing monarch habitat from March 15 to August 31 when monarchs are breeding and from September 1 to October 31 when large numbers of monarchs are migrating; and avoid the use of pesticides and herbicides in and near monarch habitat.

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

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best

management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

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

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

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

Sincerely,

Erin Knoll
Field Office Supervisor

cc: Matthew.Stooksbury@dnr.ohio.gov
Eileen.Wyza@dnr.ohio.gov

Department of Natural Resources
ohiodnr.gov

Mike DeWine, *Governor*
Jim Tressel, *Lt. Governor*
Mary Mertz, *Director*

Office of Real Estate & Land Management
Tara Paciorek - Chief
2045 Morse Road – E-2
Columbus, Ohio 43229-6693

August 19, 2025

Zoe Horns
AECOM
3101 Wilson Boulevard, Suite 900
Arlington, Virginia 22201

Re: 25-1105_AEP Krone SW Fiber Cable Extension

Project: The proposed project involves adding fiber cable between four existing structures, one new structure to avoid an existing tower and a second new structure that connects underground to a new switch.

Location: The proposed project is located in Brown Township, Carroll 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: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

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.

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 vicinity of records for the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species. Because presence of state endangered bat species has been established in the area, summer tree clearing is not recommended, and additional summer

surveys would not constitute presence/absence in the area. However, limited summer tree clearing inside this buffer may be acceptable after further consultation with DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

In addition, the entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these bat species predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in clusters of dead leaves on tree limbs. However, these species are also dependent on the forest structure surrounding roost trees. The DOW recommends tree and/or tree limb clearing only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with a Diameter Breast Height (DBH) ≥ 20" if possible.

For every project, the DOW also recommends that a winter bat habitat assessment is conducted to determine if potential hibernacula are present within the project area. This is to limit possible disturbances that seasonal tree clearing and/or subsurface work (e.g., trenching, blasting, etc.) may cause to hibernating bats. Potential hibernacula include rocky outcroppings, caves, and underground mines. Direction on how to conduct winter habitat assessments can be found in the joint guidance OHIO DIVISION OF WILDLIFE AND U.S. FISH AND WILDLIFE SERVICE (OH-FIELD OFFICE) JOINT GUIDANCE FOR BAT SURVEYS. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile permanent tree clearing buffer around the hibernaculum entrance. Limited summer or winter tree clearing may be acceptable after consultation with the DOW. If a habitat assessment for projects involving subsurface disturbance finds that a potential hibernaculum is present within 5 miles of the project area, please consult with Eileen Wyza for project recommendations. If no tree clearing or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The DOW recommends no in-water work in perennial streams from March 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

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

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

Water Resources: The Division of Water Resources has not conducted a project specific review and/or comments, however, the guidance provided below should be reviewed by the Environmental Review applicant for applicability on this project and subsequent compliance.

If the subject project is in a floodplain regulated by the Federal Emergency Management Agency (FEMA), the local floodplain administrator should be contacted concerning the possible need for any floodplain

permits or approvals. The FEMA National Flood Hazard Layer (NHFL) Viewer website can be utilized to see if the project is in a FEMA regulated floodplain. If the project is not in a FEMA regulated floodplain, then no further action is required.

Ohio Revised Code (ORC) Section 1521.16 mandates that any owner of a property or a facility that has the capacity of withdrawing 100,000 gallons per day (gpd) of water from groundwater, surface water, or both must register with the Division of Water Resources' Water Withdrawal Facilities Registration (WWFR) Program and report their withdrawals annually.

Additional coordination may be required depending on the location of the withdrawal and consumptive use. Restrictions or permitting may be required for:

- New or increased consumptive use of water averaging 2 million gallons per day (mgd) within 30 days within the Ohio River basin.
- New or increased withdrawal and consumptive water use in the Lake Erie watershed averaging 1 million gallons per day (mgd) or more in 90 days.
- New or increased water withdrawal directly from Lake Erie averaging 2.5 million gallons per day (mgd) or more in 90 days.
- Diversion or movement of water across the Ohio River and Lake Erie basin divide.

If the project does not involve activities that are subject to water withdrawal regulatory requirements as described above, then no further action is required. For more information, visit the Water Inventory & Planning website.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew (Environmental Services Administrator) at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Expiration: *ODNR Environmental Reviews are typically valid for 2 years from the issuance date. If the scope of work, project area, construction limits, and/or anticipated impacts to natural resources have changed significantly from the original project submittal, then a new Environmental Review request should be submitted.*

APPENDIX G

2025 JOINT GUIDANCE FOR BAT SURVEYS AND TREE CLEARING

OHIO DIVISION OF WILDLIFE AND U.S. FISH AND WILDLIFE SERVICE (OH-FIELD OFFICE) JOINT GUIDANCE FOR BAT SURVEYS

MAY 2025

This document serves as guidance for state recommendations regarding tree clearing and/or subsurface disturbance as it relates to bats. This document also covers guidance for conducting bat surveys including summer mist-netting, acoustic surveys, and winter habitat assessments.

This document does not supersede any requirements listed on permits or facility certificates. All permit conditions must be strictly adhered to for permits to be valid and for renewal of permits beyond the existing year. This guidance applies to state recommendations only. Contact the USFWS to determine if federal consultation is also necessary to comply with federal law.

Agency Contacts:
ODNR-DOW Permit Coordinator: Stormy Gibson, Wildlife.Permits@dnr.ohio.gov, (614) 265-6315
ODNR-DOW Bat Survey Coordinator: Eileen Wyza, Eileen.Wyza@dnr.ohio.gov, (614) 265-6764
USFWS OHFO Endangered Species: Keith Lott, Keith_Lott@fws.gov, (380) 867-1308

Table of Contents

ODNR-DOW and USFWS OHFO Recommendations for Tree Clearing:

During the spring, summer, and early fall months, all bats in Ohio use trees as roosts. Several of the federally and/or state endangered species that occur in the state rely on trees for their maternity roosts where pups are born and raised until they are independent in the late summer. Because of the importance of forest habitats in the warmer months, tree clearing in Ohio is typically not recommended to occur between April 1st and September 30th each year. The recommended time to clear trees is between October 1st and March 31st. If seasonal clearing during those dates is not possible, both ODNR-DOW and USFWS OHFO recommend the following steps:

Step 1: Coordinate with **ODNR-DOW** and **USFWS OHFO** regarding existing records for state and federally listed endangered bat occurrence information. **ODNR-DOW** recommends that a full environmental review be completed (found HERE) and **USFWS OHFO** recommends that an IPAC form be filled out (found HERE) to determine presence of listed bat records. Then a request for technical assistance should be sent to Ohio@fws.gov with the subject line: Project submittal for review (IPaC#xxxx-xxxx).

Step 2: If recommended by either agency, conduct a presence/probable absence survey following current guidelines as outlined on page 7, where applicable.

Step 3: If a state-listed endangered bat is captured or recorded during the survey:

- Recommendation of no summer tree cutting, or limited summer tree cutting in certain situations within 5 miles of an Indiana bat and/or little brown bat capture or 3 miles of a northern long-eared bat and/or tricolored bat capture if a roost is not located.
- Recommendation of no summer tree cutting, or limited summer tree cutting, within a minimum of 2.5 miles of an Indiana bat or little brown bat roost or 1.5 miles of a northern long-eared bat or tricolored bat roost tree if located.
- Recommended tree clearing dates within capture record buffers are October 1 – March 31

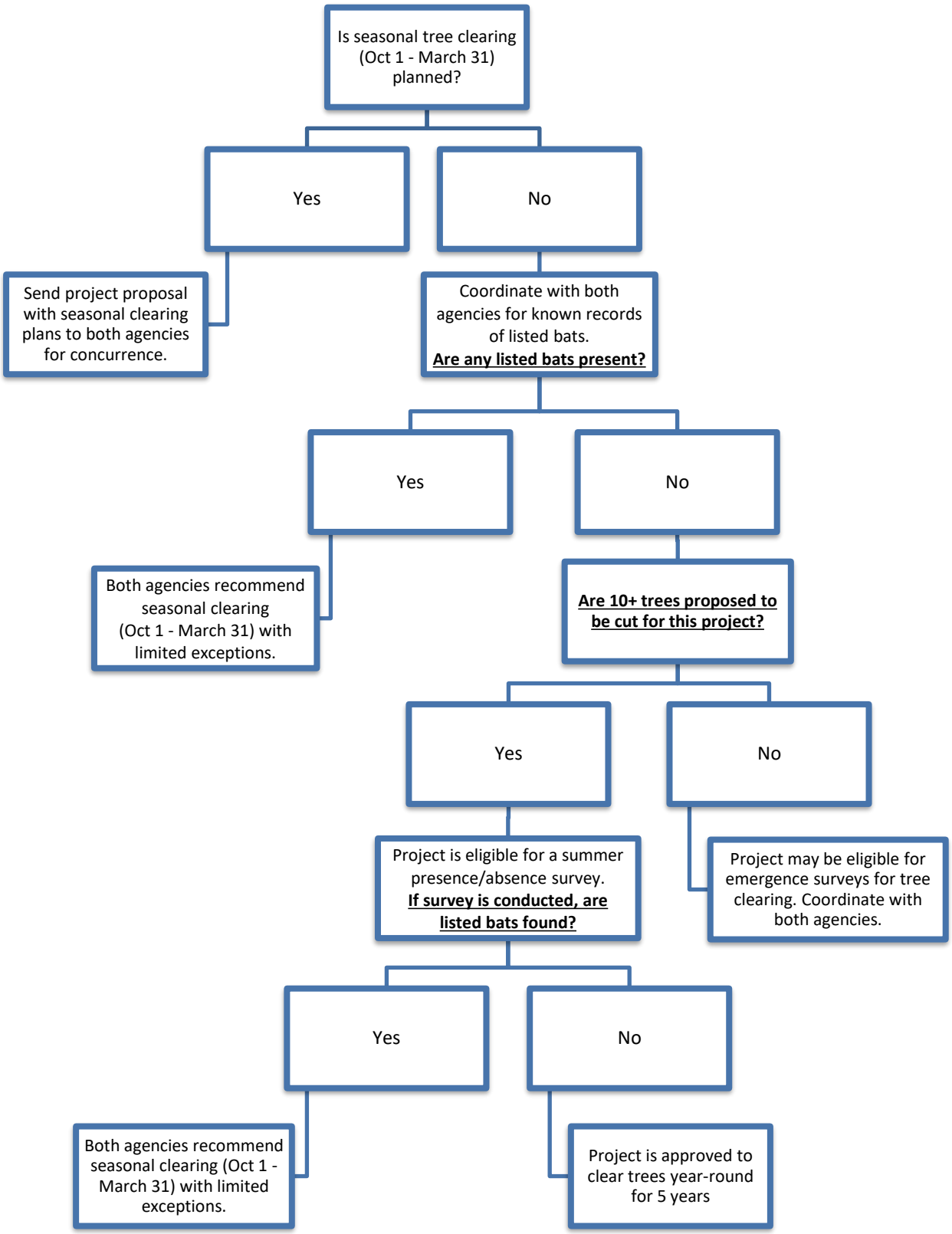
If no state-listed endangered bat is captured or recorded during the survey:

- Year-round (winter and summer) tree cutting may proceed for 5 years before a new survey is needed under state guidance.

*** Limited summer tree cutting guidance:** Limited summer tree cutting within a capture buffer may be permitted in certain circumstances after consultation with ODNR-DOW for projects that involve removal of 10 or fewer trees, removal of only conifers, and/or invasive species removal. These projects are handled on a case-by-case basis.

Tree Clearing around Hibernacula: Work involving tree clearing around hibernacula has the potential to impact hibernating bats. Trees within 0.25 miles of a hibernaculum portal play an important role in controlling wind, humidity, and temperature in the area, and they are also important roosting sites prior to the hibernation period. Therefore, a 0.25-mile buffer around known and/or potential hibernacula entrances is recommended. To assess the presence of a known and/or possible bat hibernaculum, ODNR-DOW recommends consulting with both agencies for nearby hibernacula records as well as performing a winter habitat assessment to search for potential hibernacula. For more information on how to perform a winter habitat assessment, please proceed to **Step 2** of **ODNR-DOW Recommendations for Subsurface Disturbance** on page 5 of this document. If any known and/or potential hibernacula are identified during project planning, please consult with ODNR-DOW and USFWS OHFO for further guidance.

The following flow chart can assist you in walking through the tree clearing guidance and decision-making process:



ODNR-DOW Recommendations for Subsurface Disturbance:

During late fall and throughout winter, Ohio's endangered bats hibernate in protected areas such as caves, underground mines, and rocky outcroppings. During this period, bats are susceptible to the disease White-Nose Syndrome. In order to minimize disturbance to hibernating bats, subsurface disturbance impacting the bedrock in Ohio is typically not recommended between November 15th and March 31st each year. The ideal time for bedrock-impacting subsurface disturbance is between April 1st and October 31st. For all projects, ODNR-DOW recommends the following steps:

Step 1: Coordinate with **ODNR-DOW** regarding existing records for state-listed bat hibernacula.

Step 2: If a project site does not contain known bat hibernacula:

- Conduct a winter habitat assessment of the project area. Begin by conducting a desktop assessment of potential caves, mines, karst features, rock ledges, etc. are present within 5 miles of the project area. Use the following tools to conduct this assessment:
    - ODNR Mines of Ohio Viewer
    - Karst Interactive Map
    - Topographic maps, photos, historical records, etc.
- If historical mines or other features with possible portal openings are discovered, do field checks where possible to investigate if portals are present.
- Any potential hibernacula found must address possible suitability for listed bats.

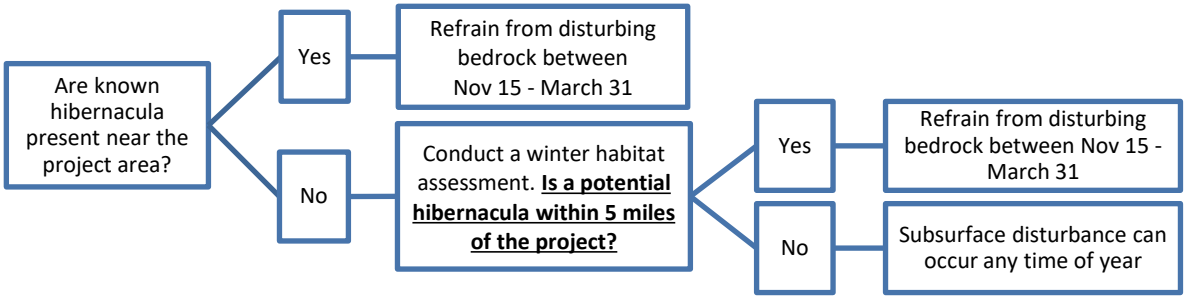
Step 3: Report results of the habitat assessment (and field assessment where applicable) to **ODNR-DOW Bat Survey Coordinator.** This can be a simple email or letter reporting distances to the nearest underground features and any other pertinent information regarding potential hibernacula to the project. Projects can expect the following recommendations in **ODNR-DOW's** response:

If potential hibernacula are found:

- Assume bats are using these hibernacula and refrain from subsurface disturbance impacting bedrock from Nov 15 – March 31.
- Avoid impacts on ledges and rock outcroppings where possible.

If no potential hibernacula are found**:**
Subsurface disturbance can occur any time of year.

The following flow chart can assist you in walking through the subsurface disturbance guidance and decision-making process:



ODNR-DOW and USFWS OHFO Recommendations for Bridges and Culverts

Bridges and culverts can provide suitable roosting habitat for numerous species of bats, including Indiana bats, Northern long-eared bats, Tricolored bats, and Little brown bats. Maternity roosts, hibernation sites, and temporary roosts have all been documented in bridges and culverts, making these structures potentially important year-round for endangered bats. For projects involving work on or around bridges and culverts that are at least 3 feet high and 23 feet long, ODNR-DOW and USFWS recommend the following:

Step 1: Coordinate with **ODNR-DOW** and **USFWS OHFO** regarding the bridge of culvert in question to determine if the structure is suitable for bats or if there are existing records of listed bats.

Step 2: If applicable, inspect the bridge or culvert for indications of bat presence, such as the following:

- Cracks or crevices at least 0.5” wide and 4” deep
- Unobstructed expansion joints
- Presence of urine and/or body staining on the structure
- Presence of guano

Step 3: Please consult with **ODNR-DOW** and **USFWS OHFO** for next steps after determining presence or probable absence of bats. Depending on the results, the agencies will provide guidance on timing and manner of structural work.

For more information, a more detailed explanation of conducting surveys for bats in bridges and/or culverts can be found in Appendix K (page 69) of the USFWS’ *Range-wide Indiana Bat & Northern Long-eared Bat Survey Guidelines (2024).*

Ohio Recommendations for Conducting Bat Surveys for Presence/Probable Absence

ODNR-DOW and USFWS OHFO Joint Guidelines follow the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines each year. This protocol may also be used for tricolored bat or the state-listed little brown bat with some minor modifications detailed below. To determine if a project is eligible for presence/probable absence surveys, please review **ODNR-DOW and USFWS OHFO Recommendations for Tree Clearing** (pgs. 3-4) of this document.

Ohio Mist-net Surveys

Due to the presence of White-Nose Syndrome (WNS), mist-netting in Ohio must be conducted between June 1 and August 15 unless stated otherwise in your state permit. ODNR-DOW and USFWS OHFO have determined that delaying netting activities until June 1 will provide additional recovery time for bats affected by WNS. For presence/probable absence surveys, netting will not be accepted outside of the June 1 - August 15 timeframe.

Mist-net Survey Levels of Effort:

To establish presence/probable absence of all federally and/or state-listed bats in Ohio, projects must use the highest required level of effort of the listed species. Use the table below for guidance on level of effort needed for each species using mist-net surveys. Please also note that the USFWS 2024 guidelines for the federally proposed tricolored bat follows the northern long-eared bat level of effort.

Species	**Nonlinear Projects (Net nights/0.5km[1])**	**Linear Projects (Net nights/km)**
Indiana Bat	6	2
Northern long-eared bat	10	4
Tricolored bat[2]	10	4
Little brown bat[3]	10	4

Federal guidance requires that a minimum of two (2) biologists (e.g., one permitted and one technician) must be on-site for every four (4) net-sets being operated. Exceptions may be allowed under extenuating circumstances, provided written justification is included in the proposed survey study plan and subsequently approved by the **USFWS OHFO** and **ODNR-DOW**.

Bat Bands:

Ohio provides three size bands for bats: 2.4 mm, 2.9 mm, and 4.2 mm. The 2.4 mm split metal bat ring made of aluminum alloy is suitable for banding tricolored bats. 2.9 mm bands are suitable for Indiana, northern long-eared, and little brown bats. The larger 4.2 mm band is suitable for silver-haired (*Lasionycteris noctivagans*), big brown (*Eptesicus fuscus*), and hoary (*Lasiurus cinereus*) bats. You must band all Indiana, northern long-eared, little brown, and tricolored bats with **ODNR-DOW** bands. Banding pliers are also now required for banding bats.

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[1] 0.5km = 123 acres

[2] State-endangered, federally proposed endangered

[3] State-endangered only

Ohio Acoustic Surveys

Acoustic bat surveys for projects that are eligible for summer presence/probable absence surveys will be accepted by **ODNR-DOW** and USFWS OHFO for the 2025 season. Surveys should follow guidelines laid out in the USFWS' *Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines* (2024) with the following exceptions:

- Ohio survey dates are June 1 – August 15
- After conducting automated analyses using one or more of the currently available approved acoustic bat ID programs[4], qualitative analysis (i.e., manual vetting) of any calls recorded from state-endangered species must be completed.
- All presence/probable absence acoustic surveys conducted for state listed bat species should follow the highest minimum acoustic nights set forth in the federal guidance to be considered valid by **ODNR-DOW**. Any modifications to this position will be communicated at the time of the site authorization approval.

At a minimum, for each detector site/night a program considered presence of state-listed bats likely, review all files (including no IDs) from that site/night. If more than one acoustic bat ID program is used, qualitative analysis must also include a comparison of the results of each program by site and night.

Acoustic Survey Levels of Effort:

To establish presence/probable absence of all federally and/or state-listed bats in Ohio, projects must use the highest required level of effort of the listed species. Use the table below for guidance on the level of effort needed for each species using acoustic surveys. Please also note that the USFWS 2024 guidelines for the federally proposed tricolored bat follows the northern long-eared bat level of effort.

Species	**Nonlinear Projects (Net nights/0.5km)**	**Linear Projects (Net nights/km)**
Indiana Bat	10	4
Northern long-eared bat	14	4
Tricolored bat	14	4
Little brown bat	14	4

Combined Mist-netting and Acoustic Surveys

ODNR-DOW will accept the USFWS pilot survey option of combining mist-netting and acoustic surveys for traditional survey sites (e.g., 123-acre area) detailed in Appendix I of the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (2024). All presence/probable absence combined mist-net and acoustic surveys conducted for state-listed bat species should follow the highest minimum level of effort set forth by the federal guidance to be considered valid by ODNR-DOW. Any modifications to this position will be communicated at the time of the site authorization approval.

[4] https://www.fws.gov/media/indiana-bat-summer-survey-guidance

Ohio Guidance for Bat Surveyors

The following guidance is intended for those individuals planning on conducting bat surveys for any purpose in the state of Ohio. The guidance includes guidance on needed permits before work can be conducted, guidance for conducting work during the field season, and guidance on post-field season reporting to **ODNR-DOW**.

Before Field Season:

- Anyone surveying bats involving handling of any kind in the state of Ohio must obtain a federal permit as well as a state scientific collection permit. The federal permit should include both the Indiana bat and the northern long-eared bat.
- Your **ODNR-DOW** scientific collector's permit should include all Ohio bat species.

- Prior to initiation of field work (a minimum of two weeks in advance), permittees must provide proposed mist-netting and/or acoustic survey plans to **USFWS OHFO** and **ODNR-DOW** in the form of an e-mail. Plans must be reviewed and approved by both agencies before ANY surveys take place. Study plans must include:
    - Objectives
    - Location details
    - Dates of proposed work
    - **USFWS Project Code**: Project Codes can only be obtained by requesting an official species list through the USFWS's Information for Planning and Consultation (IPaC) website: (https://ipac.ecosphere.fws.gov/)**.**

- Request bat bands at least two weeks in advance of needing them. Bat bands can be obtained by e-mailing the **ODNR-DOW Bat Survey Coordinator** with how many bands are needed, current permit number (both federal and state permits), sizes, and a mailing address. Bands will not be issued until permits are valid.

During Field Season:

- Only individuals who are named on the **ODNR-DOW** endangered species letter portion of the permit and on the corresponding federal bat permit may conduct and oversee mist-net surveys. Trained assistants may work on permitted bat activities under the direct and on-site supervision of a named permittee. All bat IDs must be verified by a named permittee.
- If an Indiana bat, northern long-eared bat, and/or tricolored bat is captured, the permittee shall notify the **USFWS** and the **ODNR-DOW Bat Survey Coordinator** referenced above within 48 hours via email. If a little brown bat is captured, notify the **ODNR-DOW Bat Survey Coordinator** only within 48 hours via email. Reports of listed bat captures should include specific information such as spatial location of capture, band information, radio-transmitter frequency information, sex, reproductive status, and age of individual.
- For presence/probable absence surveys, **ODNR-DOW** requires all female and juvenile state endangered and threatened bat species be radio-tracked if caught, in accordance with methods outlined in Appendix D of 2024 *USFWS Range-wide Indiana Bat Summer Survey Guidelines*.
- If you are taking any biological samples (tissue, fur, blood, etc.), this must be specifically authorized in your state and federal permits and noted in your survey proposal.

After Field Season:
By March 15, you must submit your final report(s) from the previous summer. Regarding specific reporting requirements, please refer to your permit or guidance from the USFWS OHFO. Please then forward a copy of the same report to the **ODNR-DOW Bat Survey Coordinator** and **ODNR-DOW Permit Coordinator**. Be sure to include your state permit number along with an electronic copy of the project report. Electronic summaries emailed during the field season are NOT considered as full compliance of this reporting requirement.

Frequently Asked Questions

When does the ODNR-DOW Bat Survey protocol have to be used?

This protocol should be used anytime Indiana bat, northern long-eared bat, little brown bat, or tricolored bat summer presence/probable absence surveys are conducted in the state of Ohio.

Can I use the Dkey for projects in Ohio?

The Dkey cannot be used to replace consultation with ODNR-DOW. Project proponents should coordinate directly with the ODNR-DOW for project technical assistance for all federally listed species. Additionally, **OHFO discourages the use of the Dkey for Ohio projects.** Contacting OHFO directly (ohio@fws.gov) for technical assistance for both the northern long-eared bat and Indiana bat is the more efficient process.

What disease protocols are required for bat surveys?

When handling bats, you must strictly adhere to the current WNS Decontamination Protocol (current version can be found at https://www.whitenosesyndrome.org/topics/decontamination). Clothing, boots, gear, and equipment should all be thoroughly decontaminated between nights, as well as between netting sites. I think we can delete this now.

How long are the results of the surveys valid for an assessment of an area?

Mist-net or acoustic surveys documenting probable absence of state-listed endangered bats are valid for five years.

When can acoustic or mist-net surveys occur in Ohio?

Acoustic or net surveys may only be conducted from June 1 through August 15 unless indicated otherwise in your state permit. Any surveys outside of the June 1 - August 15 timeframe cannot be used in Ohio to assess the presence/probable absence of state-listed bats.

Can I complete my acoustic surveys in a single night?

No. In accordance with the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines, survey efforts must be split across a minimum of 2 calendar nights.

Can a presence/probable absence survey be conducted within a known bat capture/detection buffer?

Surveys generally cannot be used to document presence/probable absence of state-listed endangered bats where presence of the species has already been confirmed by prior surveys.

Can I conduct a survey with less than the highest minimum effort and have it count as presence/probable absence for some species but not others in Ohio?

No. Ohio only accepts project proposals that use the highest level of effort required for bat surveys. So, for example, a project proposal meeting Indiana bat LOE requirements but not the other three species' LOE requirements will not be accepted as all species are considered potentially present statewide.

What if a project is proposing to clear trees between April 1 and September 30 when bats may be present, but no bat records exist in the project area?

Any Ohio project that is not within a known bat record buffer, and tree clearing between April 1 and September 31 is being proposed, may have a presence/probable absence survey conducted between June 1 and August 15 following the range-wide guidance. If a presence/probable absence survey is not performed, presence of listed bats is assumed.

Where do I get bands?

If you need bands, email the ODNR-DOW Bat Survey Coordinator at least two weeks in advance with your current ODNR permit number, how many bands in each size (2.4 mm, 2.9 mm, and 4.2 mm) you will need this season, and a current address to ship the bands.

Do I have to band every bat?

No, currently this is optional. However, you are required as per your state permit to band all Indiana, northern long-eared, little brown, and tricolored bats.

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Case No(s). 25-0872-EL-BLN

Summary: Application LON, Blackbird Project. electronically filed by Hector Garcia-Santana on behalf of Ohio Power Company.