Letter of Notification for the West Watertown–Watertown 138 kV Transmission Line Project

PUCO Case No. 24-0111-EL-BLN

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

Submitted by:
Ohio Power Company

March 25, 2025

Letter of Notification

West Watertown-Watertown 138 kV Transmission Line Project

4906-6-05 Accelerated Application Requirements

Ohio Power Company (the "Company") is providing 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 West Watertown-Watertown 138 kV Transmission Line Project (the "Project") within Watertown township in Washington County, Ohio. The Company proposes to build approximately 4.1 miles of greenfield 138 kV transmission line from the Company's planned distribution stepdown West Watertown Station to Washington Electric Cooperative's ("WEC" or the "Customer") Watertown Station. This Project is being completed per WEC's request for a new 138 kV delivery point.

The Company proposes to construct the new 138 kV transmission line with a combination of single circuit steel monopoles and H-frames, depending on the terrain, for 3.77 miles from WEC's Watertown Station to the intersection of the existing Corner-Wolf Creek 138 kV Transmission Line. From this intersection, the Project will construct double circuit steel monopoles for approximately 0.33 miles bringing the Watertown-West Watertown 138 kV Transmission Line and Corner-Wolf Creek 138 kV transmission line to WEC's Watertown Station. The Project will maintain a 100-foot wide right-of-way ("ROW").

The location of the proposed transmission line ("Project Area") is shown in **Exhibit 1** and **Exhibit 2** in **Appendix A**.

The Project meets the requirements for a Letter of Notification ("LON") because it is within the types of projects defined by Item (1)(d)(ii) of 4906-1-01 *Appendix A Application Requirement Matrix For Electric Power Transmission Lines* which states:

> (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 PUCO Case No. 24-0111-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.

WEC's existing Watertown Station is currently served from a 23 kV radial line. The existing 23 kV system is in poor condition, is a non-standard design voltage, and has resulted in numerous service interruptions to the customer, resulting in approximately 3,780,000 Customer Minutes of Interruption between 2012-2021 as reported by Buckeye Power in their request to the Company.

To address the customer's concerns, WEC requested a new 138 kV delivery point. To convert the Watertown delivery point to 138 kV, the Company plans to build a greenfield 138/69 kV stepdown station and a new 138 kV transmission line to the WEC delivery point. The Company proposes building the 138/69kV stepdown West Watertown Station adjacent to the Wolf Creek-Corner 138 kV transmission line, and a new 3.5-mile 138 kV transmission line (subject of this Application) to WEC's delivery point. This will provide a new 138 kV delivery to the co-op and allow the Company to address separate asset renewal issues in the nearby 69 kV network. The cut into the Wolf Creek-Corner 138 kV transmission line will be filed separately with the OPSB. The West Watertown Station is not subject to approval by the OPSB.

Failure to move forward with the proposed Project will result in continued customer reliability concerns related to the existing 23 kV service.

The need and solution for the Project were presented and reviewed with stakeholders at the July 2019 and June 2022 PJM SRRTEP meetings, respectively. The Project was subsequently assigned PJM supplemental number s2791.3. The Project was included in the Company's 2024 Long Term Forecast Report on Page 106 (see **Appendix B**).

B(3) Project Location

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

Exhibit 1 in **Appendix A** shows the Project area on a United States Geological Survey (USGS) Watertown and Fleming topographic quadrangle map in relation to the existing Corner – Wolf Creek 138 kV Transmission Line, existing Watertown Station, and the proposed distribution stepdown West Watertown Station. **Exhibit 2** in **Appendix A** identifies the West Watertown-Watertown 138 kV Transmission Line, environmental features, parcel boundaries, and nearby utility facilities on aerial imagery.

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 siting study for the Project, which evaluated four suitable Alternative Routes for connecting the Company's planned distribution stepdown West Watertown Station to the Customer's Watertown Station (Project endpoints). The Alternative Routes considered are shown in **Exhibit 3** in **Appendix A**. The Siting Study is presented in its entirety in **Appendix C**.

Existing land use in the Project area is primarily agricultural with low density residential land and commercial land uses. Conceptual routes were developed between West Watertown and Watertown Station and maximized the distance from residential properties, followed property lines, and avoided impacts to existing agricultural operations in the area. Study segments were developed from these conceptual routes with further consideration of land use, natural and cultural resources, and topography. Mountainous terrain and steep slopes in the southwest portion of the Project area were avoided. In addition, the Company minimized routing options through the Town of Watertown, to the extent practical, due to the Watertown Historic District and more dense development in the area. Open agricultural fields provided routing opportunities along parcel boundaries and limited impacts on residences and other land uses elsewhere in the Project area. Local roads within the Project area, such as SR 339 and Reed Road, were utilized to parallel existing linear features.

Study segments were presented to the public at an open house in July 2022. The purpose of this open house was to gather additional information otherwise not observed during desktop analysis and obtain feedback from impacted and adjacent property owners. The Company evaluated the feedback gathered from the public open house and refined the study segments into two alternative routes. The Company hosted a second public open house on October 18, 2023. This open house was to update the public on the Project's progress and gather additional information from the public. After the second public open house, the Company analyzed impacts, reviewed additional feedback, and selected a proposed route, which is shown on **Exhibit 2** in **Appendix A.** The proposed route was selected as it routes north of the Town of Watertown, reducing land use impacts to residences and the built environment by using agricultural fields and parcel boundaries to route towards the proposed West Watertown Station. The Company anticipates structures to be located outside of wetland and stream areas where possible to ensure the Project can be constructed in a safe, timely, and reliable manner. Per these mitigating factors, no cultural resource, wetland, or stream impacts are expected and are discussed further in **Section B(10)(f)**, below.

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, tenants, and local officials about this Project through several methods. 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

Administrative 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 landowners, 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 (aeptransmission.com/ohio/WestWatertown/) 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 and select municipal officials 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 area.

B(6) Construction Schedule

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

Construction of the Project is planned to start in October 2027 with a proposed in-service date of November 2028.

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.

Exhibit 1 in **Appendix A** provides the proposed Project area on a map of 1:24,000-scale (1-inch equals 2,000 feet) on the Watertown and Fleming USGS 7.5-minute topographic map of the Project area. **Exhibit 2** in **Appendix A** shows the Project area on 2020 ESRI World Imagery at a scale of 1:6,000 scale (1-inch equals 500 feet).

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 for which the Company will need to obtain easements/options is provided below.

Property Parcel Number	Agreement Type	Easement Agreement/ Option Obtained
390081184000	New Easement	No
390081196000	New Easement	No
390081192000	New Easement	No
390081464000	New Easement	No

390084026000	New Easement	No
390081472000	New Easement	No
390084027000	New Easement	No
390084079000	New Easement	No
390084071000	New Easement	No
390083780000	New Easement	No
390083776000	New Easement	No
390082180000	New Easement	No
390082188000	New Easement	No
390082176000	New Easement	No
390082276000	New Easement	No
310054014002	New Easement	No
390084088002	New Easement	No
390084025000	New Easement	No
310053592001	New Easement	No
390081524000	New Easement	No
310053660000	New Easement	No
390082876000	New Easement	No
390083025000	New Easement	No
390083380000	New Easement	No
390082424000	New Easement	No
390082420000	New Easement	No
390084088001	New Easement	No
390081184000	New Easement	No
390082412000	New Easement	No
390081748000	New Easement	No

The easement form exhibit provided in **Appendix D** represents the minimum rights the Company would require in order to construct, operate, and maintain these facilities.

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.

Voltage:	138 kV
Conductors:	3x (1) 795 ACSR "Drake"
Static Wire:	1x (1) 0.646" 144-Ct OPGW & 1x(1) 7#8 AW Shield Wire
Insulators:	Polymer
ROW Width:	100 feet
Structure Type:	(1) Custom Steel 2-Pole DE, Double Circuit, w/ Anchor Bolt Assembly on Drilled Pier Foundation (1) Custom Steel 2-Pole DE, Double Circuit, w/ Jumper Posts, w/ Anchor Bolt Assembly on Drilled Pier Foundation (3) Custom Steel Monopole DE, w/ Anchor Bolt Assembly on Drilled Pier Foundation (2) Custom Steel Monopole DE, w/ Jumper Posts, w/ Anchor Bolt Assembly on Drilled Pier Foundation (5) Custom Steel 3-pole DE, w/ Jumper Posts, w/ Anchor Bolt Assembly on Drilled Pier Foundation (2) Pre-Engineered Steel Monopole Tangent, Double Circuit, Braced Posts, Direct Embed Foundation (8) Pre-Engineered Steel Monopole Tangent, Alternating Braced Posts, Direct Embed Foundation (19) Pre-Engineered Steel H-Frame, Medium Suspension, Direct Embed Foundation

B(9)(b) Electric and Magnetic Fields

There is one residence within 100 feet of the centerline for this Project. Three loading conditions were examined: (1) Normal Maximum Loading, (2) Emergency Loading, and (3) Winter Normal Conductor Rating, consistent with the OPSB requirements. Normal Maximum Loading represents the peak flow expected with all system facilities in service; daily/hourly flows fluctuate below this level. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter normal (WN) conductor rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. It is not anticipated that this circuit of this line would operate at its WN rating in the foreseeable future.

Electromagnetic frequency ("EMF") levels were computed 1 meter above ground under the line and at the ROW edges (50/50 feet, left/right, of centerline).

Results calculated below use EPRI's EMF Workstation 2015 software.

West Watertown - Watertown 138 kV					
Condition	Phase current (A)	Phasing Arrangements	Sag (feet)	Electric Field (kV/m)*	Magnetic Field (mG)*
(1) Normal Max. Loading^	15.07	A-B-C	25	(0.1/0.56/0.1)	(0.31/0.6/0.31)
(2) Emergency Line Loading^^	24.71	A-B-C	36	(0.5/0.87/0.5)	(0.85/2.08/0.85)
(3) Winter Conductor Rating^^^	1361.31	A-B-C	25	(0.1/0.56/0.1)	(28.28/54.42/28.28)

^Peak line flow expected with all system facilities in service.
^^Maximum flow during a critical system contingency
^^^Maximum continuous flow that the line, including its terminal equipment, can withstand during winter conditions.

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

	General Public	Controlled Environment
Electric Field Limit (kV/m)	5.0	20.0
Magnetic Field Limit (mG)	9040	27,100

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

B(9)(c) Project Costs

The estimated capital cost of the project.

The cost estimate for the Project, which is comprised of applicable tangible and capital costs, is approximately $15.9 million using a Class 4 estimate. Pursuant to the PJM Open Access Transmission Tariff (“OATT”), the cost for this Project will be recovered in the Company’s Federal Energy Regulatory Commission (“FERC”) formula rate (Attachment H-14 to the PJM OATT) and allocated to the AEP Zone.

B(10) Social and Economic Impacts

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

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

The Project is in Watertown Township, Washington County, Ohio. Land use observed within the Project area is primarily agricultural with low density residential land and commercial land use. Residential and commercial land use are primarily within the Town of Watertown, with large residential lots along SR 676 and SR 339. The Project is anticipated to require approximately 8 acres of tree clearing. There are no schools, hospitals, places of worship, or airports within 1,000 feet of the Project's proposed transmission line alignment.

B(10)(b) Agricultural Land Information

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

The Project crosses approximately 49 acres of agricultural land. Per the Washington County Auditor's Office on February 14th, 2025 their system that produces the most up to date list of agricultural district parcels is down and they do not know what it will be back up and running. The most up to date information the Washington County Auditor's office was able to provide regarding information about Agricultural District Lands is current through November 22, 2023 and no Agricultural District Lands were located within the Project.

B(10)(c) Archaeological and Cultural Resources

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

A Phase I Archaeological Investigation and a History Architecture Investigation was conducted in Winter 2023 and amended in Spring 2024 and provided to the Ohio State Historic Preservation Office (SHPO) for consultation. These investigations did not result in the identification of any archaeological deposits or significant architectural resources within the Project's area of potential effect. There were no history/architectural resources identified as eligible or potentially eligible for inclusion on the National Register of Historic Places (NRHP). The SHPO responded on August 21, 2024, and agreed that the Project as proposed will have no effect on historic properties. Therefore, no further coordination with the SHPO is necessary. The SHPO coordination letter is provided in **Appendix E**.

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.

The Company's consultant conducted a stream and wetland delineation survey within the Project area and identified 16 wetlands, 64 streams, and one pond. No impacts to streams or ponds are anticipated. As access roads and structure placement have not been finalized, wetland impacts have not yet been determined. All potential wetland impacts will be temporary, to the extent practicable, and all coordination with the U.S. Army Corps of Engineering and/or the Ohio Environmental Protection Agency (OEPA) will be provided to the OPSB.

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) Map Numbers 39167C0225F (effective 2014-04-16) and 39167C0250F (effective 2014-04-16), the Project crosses a 100-year floodplain. The Company intends on placing structures outside of flood areas if possible. Impacts to flood areas caused by access roads are expected to be temporary and not result in floodplain loss. The Company will obtain a floodplain permit from the Washington County Floodplain Administrator for construction within these areas.

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

Anticipated Permits

Permit/Authorization/Coordination	Agency	Date
Storm Water Pollution Prevention Plan/Notice of Intent for authorization of construction storm water discharges under General Permit OHC00006	Ohio Environmental Protection Agency	Expected September 2024
	Washington County	
Road Use Maintenance Agreement	Washington County	Expected June 2025
Clean Water Act Section 404/401	United States Army Corps of Engineers	Anticipated based on wetland impacts
	Ohio Environmental Protection Agency	
Archaeology/Architectural	Ohio Historic Preservation Office	Coordination complete 8/21/2024, no additional work required
Threatened and Endangered Species	United States Fish and Wildlife Service	Consultation complete 11/7/2023. Additional coordination to be provided to the OPSB.
Threatened and Endangered Species	Ohio Department of Natural Resources	Consultation complete 12/5/2023. Additional coordination to be provided to the OPSB.
Section 10 River Crossing	United States Army Corps of Engineers	Anticipated filing for Scioto River, September 2034
Floodplain	Washington County	Anticipated filing August 2024

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.

Coordination letters were sent to U.S. Fish and Wildlife Service (USFWS) and Ohio Department of Natural Resources-Division of Wildlife (ODNR-DOW). The USFWS response was received on November 7, 2023, and ODNR-DOW's response was received on December 5, 2023. Since these responses were received, the Company has updated the USWFS and ODNR-DOW due to a shift in corridor. These correspondence letters will be provided to the OPSB upon receipt. Copies of the agencies' correspondence letters to date are provided in **Appendix E.**

According to the ODNR-DOW response letter, the Natural Heritage Database does not have record of any state or federally listed plants or animals within one mile of the Project. **Appendix F** lists the federal and state threatened or endangered species in the Project area.

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.

As stated in **Section B(10)(e)**, a copy of the correspondence letters received from the USFWS and ODNR-DOW are provided in **Appendix E**. USFWS indicated no impacts to proposed or designated critical habitats.

The Company's consultant conducted a wetland and stream delineation survey in the Project study area and prepared an Ecological Survey Report. This report and its addendums are provided in **Appendix G**. The survey of the Project area identified 16 wetlands, 64 streams, and one pond. At the time of filing, impacts to wetlands are still being determined. Streams will either be avoided by aerially spanning or bridged (no work below the ordinary high water mark), and the pond will be avoided.

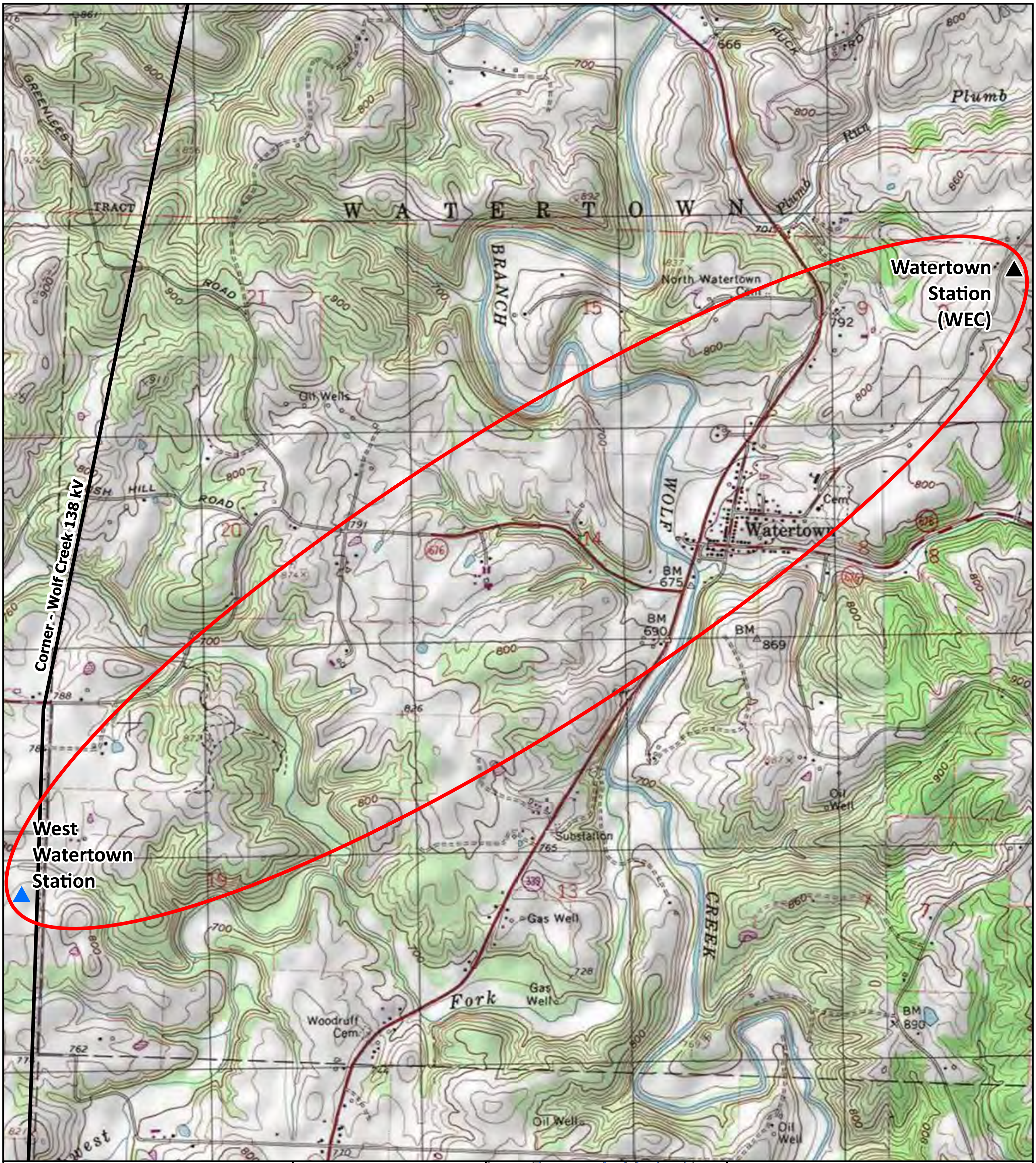
Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) Map Numbers 39167C0225F (effective 2014-04-16) and 39167C0250F (effective 2014-04-16), the Project crosses a 100-year floodplain. See **Section B(10)(d)** for coordination and permit requirements associated with floodplain impacts.

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



▲ Planned Substation

▲ Existing Substation

— Existing Transmission Line

▭ Project Area

Base Map: Source: USGS Topographic

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:24,000

January 31, 2025

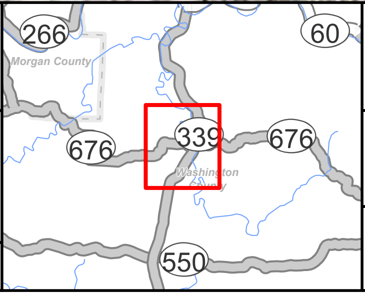
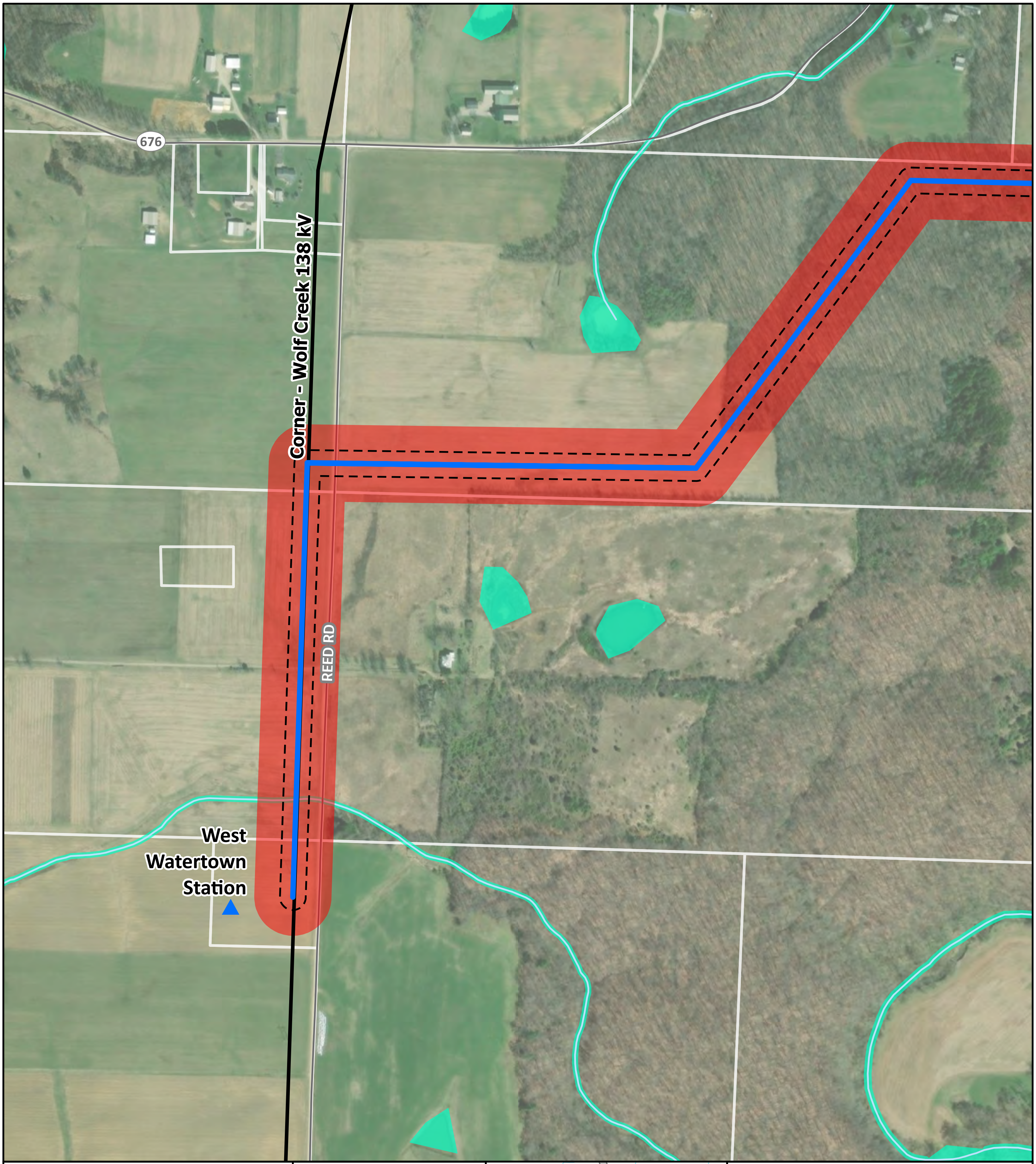


Exhibit 1
Topographic Overview

AEP OHIO

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 2,000 4,000
US Feet



▲ Planned Substation

Proposed West Watertown-Watertown 138-kV Transmission Line

Project 100' Right of Way

🟥 Project 200' Route Corridor

Existing Transmission Line

NHD Flowline

Roadway

🟩 NWI Wetlands

▭ Parcels

Base Map: Source:
ESRI World Imagery

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:6,000

March 20, 2025

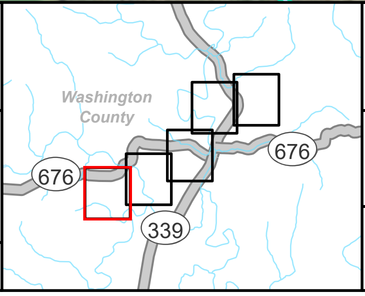
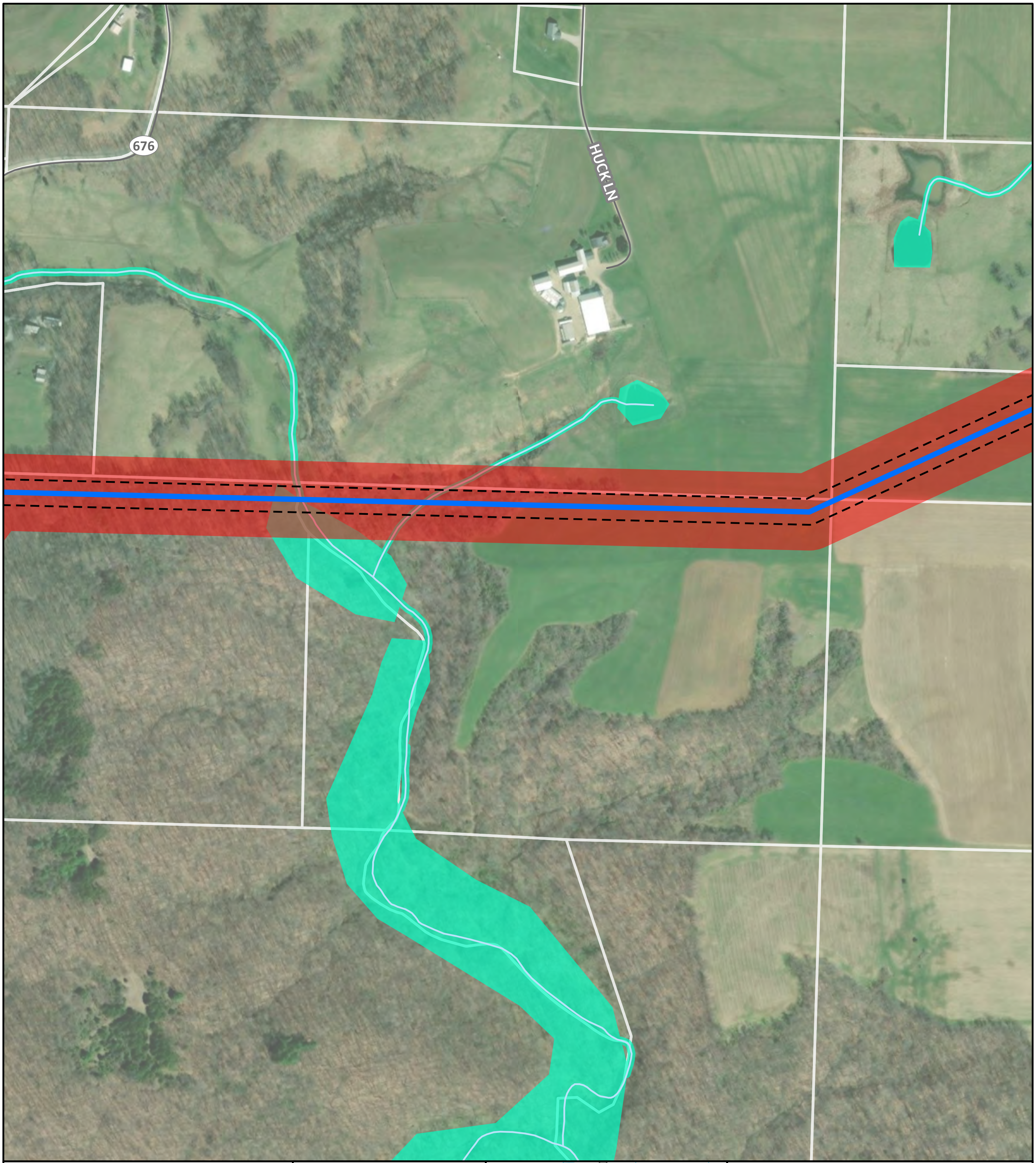


Exhibit 2
Aerial Overview

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 500 1,000
US Feet



Proposed West Watertown-Watertown 138-kV Transmission Line
Project 100' Right of Way
🟥 Project 200’ Route Corridor
NHD Flowline
Roadway
🟩 NWI Wetlands
▭ Parcels

Base Map: Source: ESRI World Imagery

Coordinate System: State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:6,000

March 20, 2025

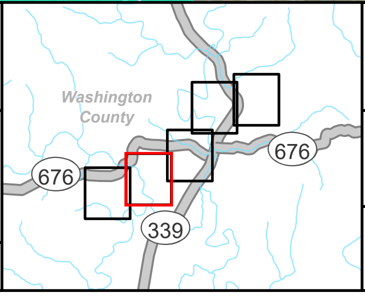
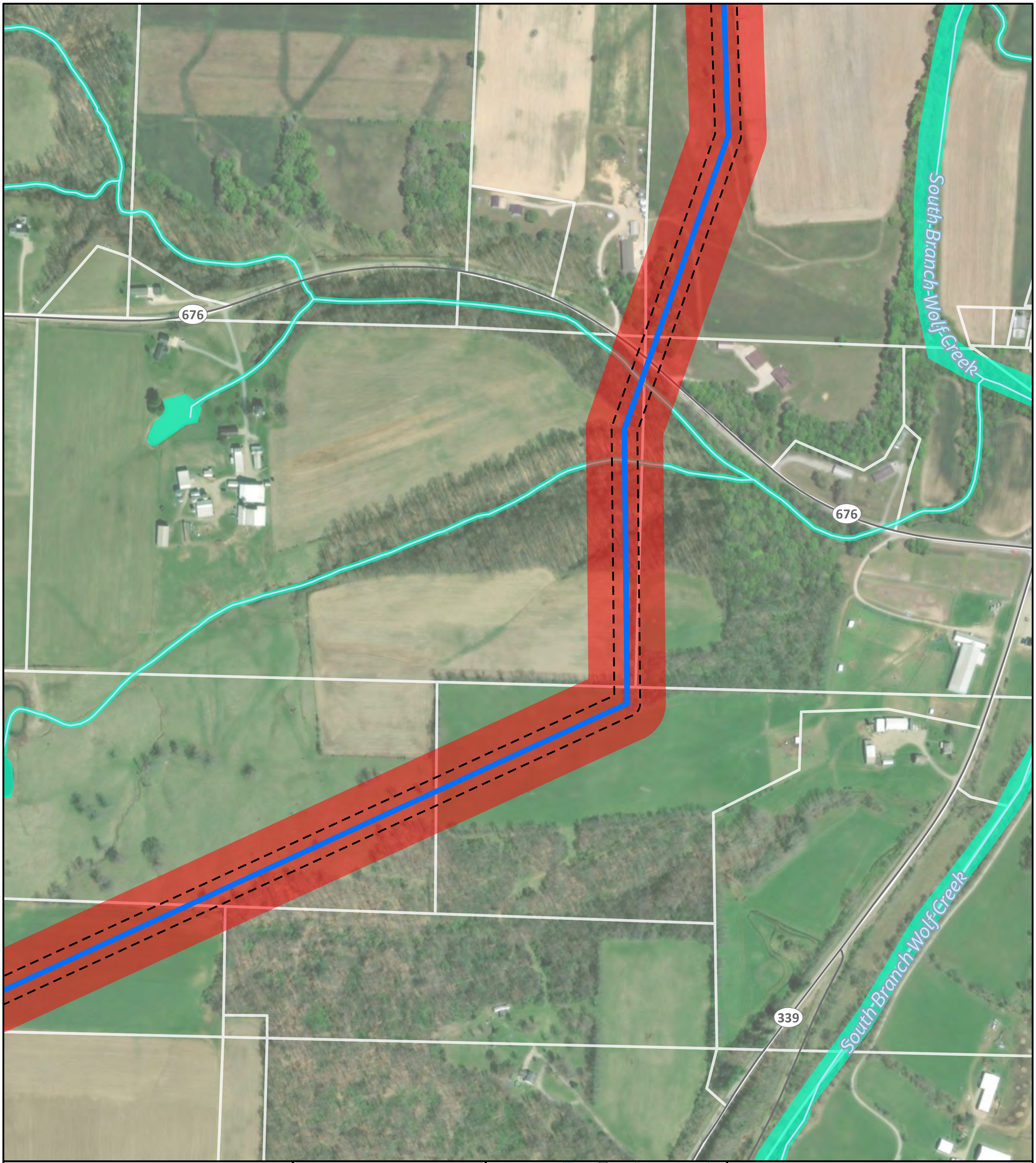


Exhibit 2
Aerial Overview

AEP OHIO
An AEP Company

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 500 1,000
US Feet



━ Proposed West Watertown-Watertown 138-kV Transmission Line

- - Project 100' Right of Way

🟥 Project 200' Route Corridor

━ NHD Flowline

━ Roadway

🟩 NWI Wetlands

▭ Parcels

Base Map: Source:
ESRI World Imagery

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:6,000

March 20, 2025

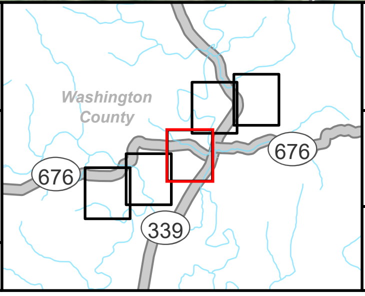
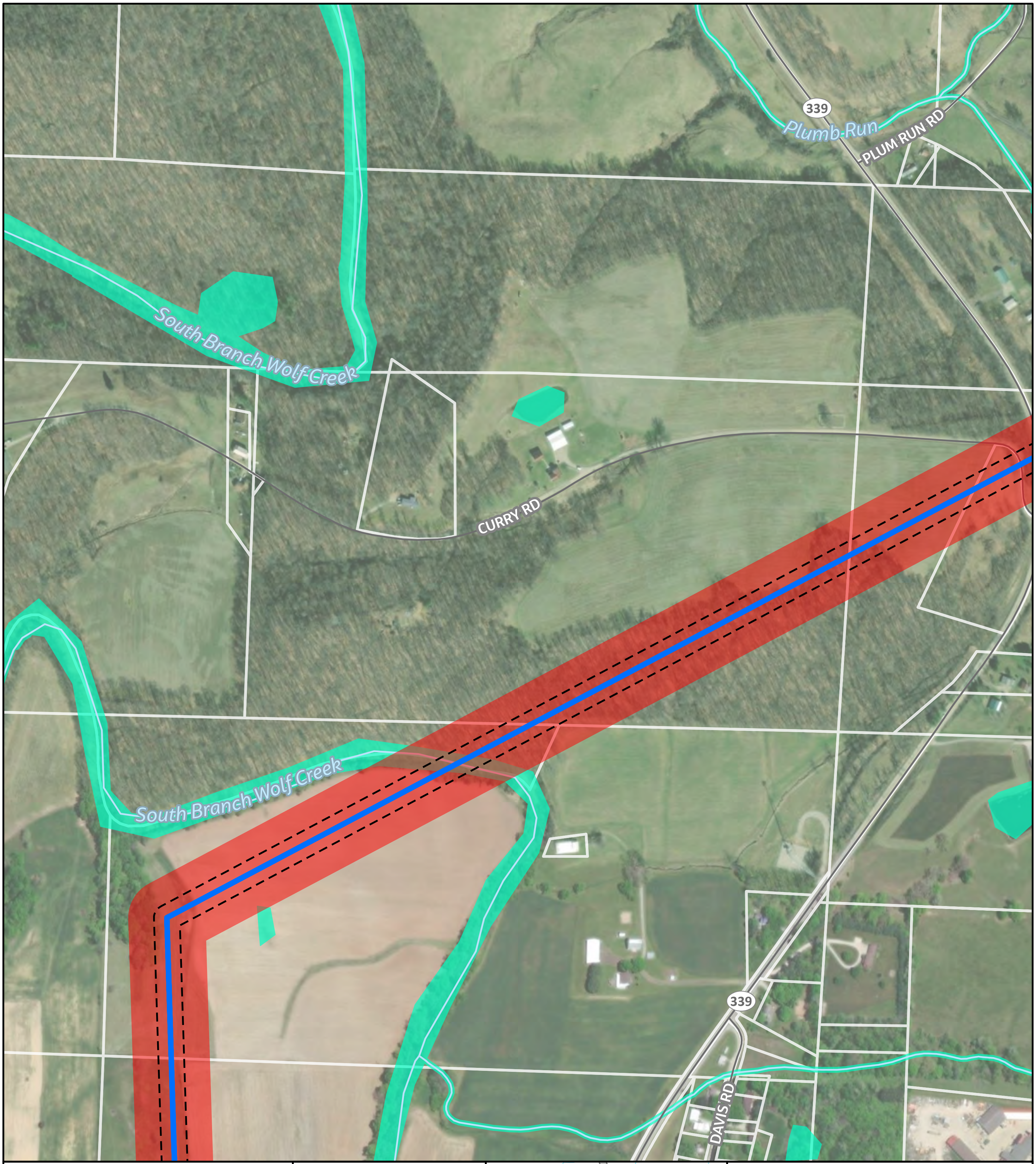


Exhibit 2
Aerial Overview

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 500 1,000
US Feet



━ Proposed West Watertown-Watertown 138-kV Transmission Line	🟥 Project 200' Route Corridor
┅ Project 100' Right of Way	─ NHD Flowline
	─ Roadway
	🟩 NWI Wetlands
	▭ Parcels

Base Map: Source:
ESRI World Imagery

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:6,000

March 20, 2025

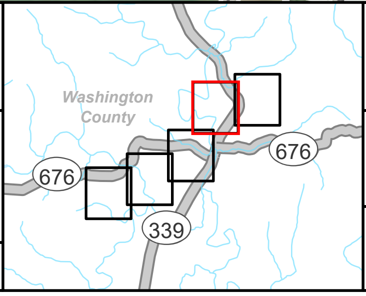
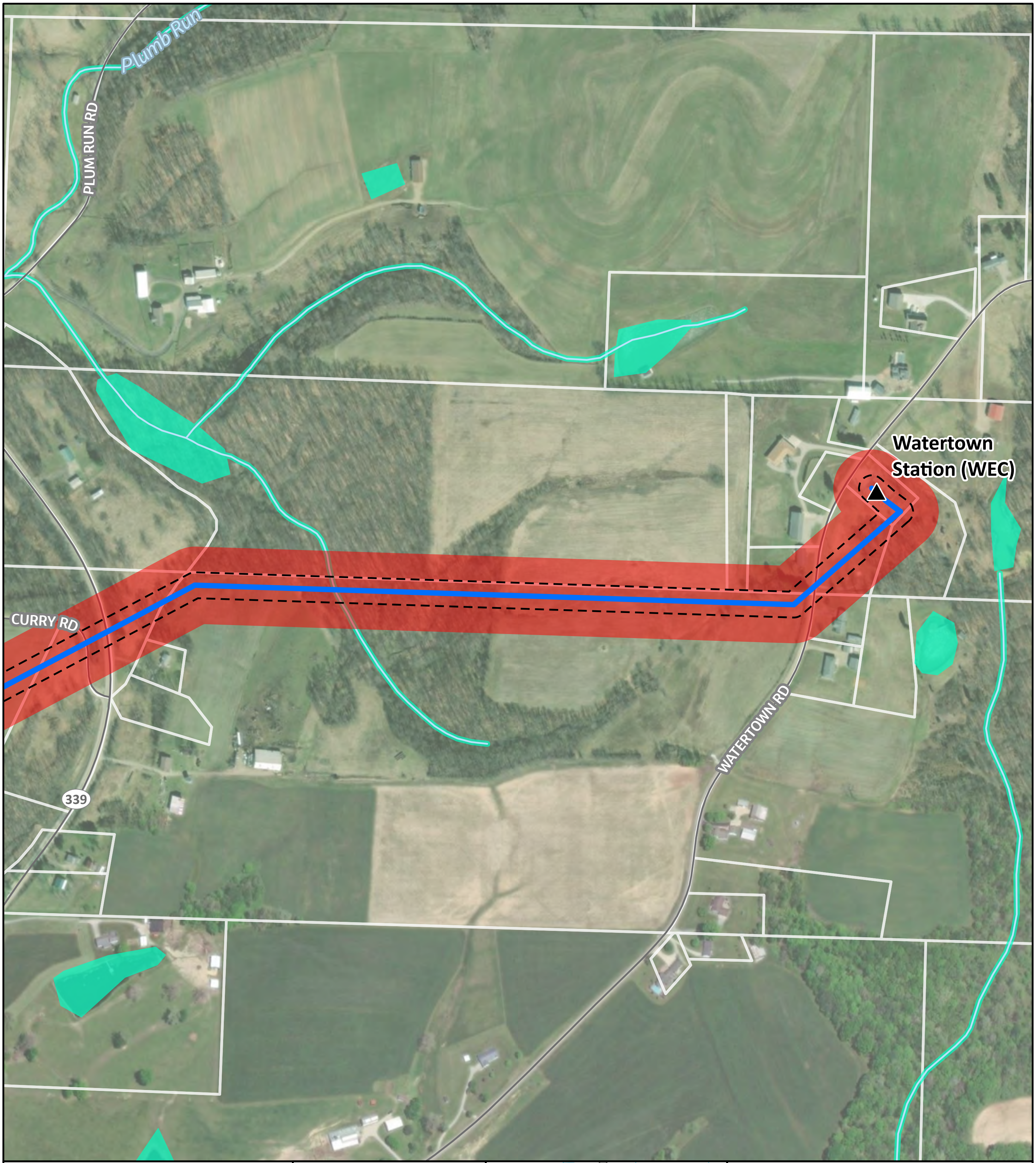


Exhibit 2
Aerial Overview

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 500 1,000
US Feet



▲	Existing Substation
🟦	Proposed West Watertown-Watertown 138-kV Transmission Line
- - -	Project 100' Right of Way
🟥	Project 200' Route Corridor
—	NHD Flowline
—	Roadway
🟩	NWI Wetlands
☐	Parcels

Base Map: Source:
ESRI World Imagery

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:6,000

March 20, 2025

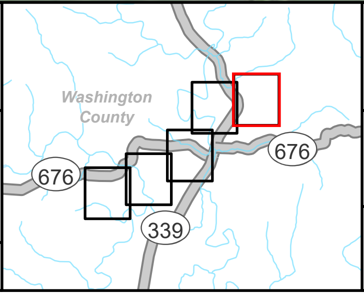
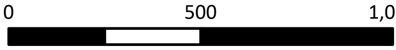
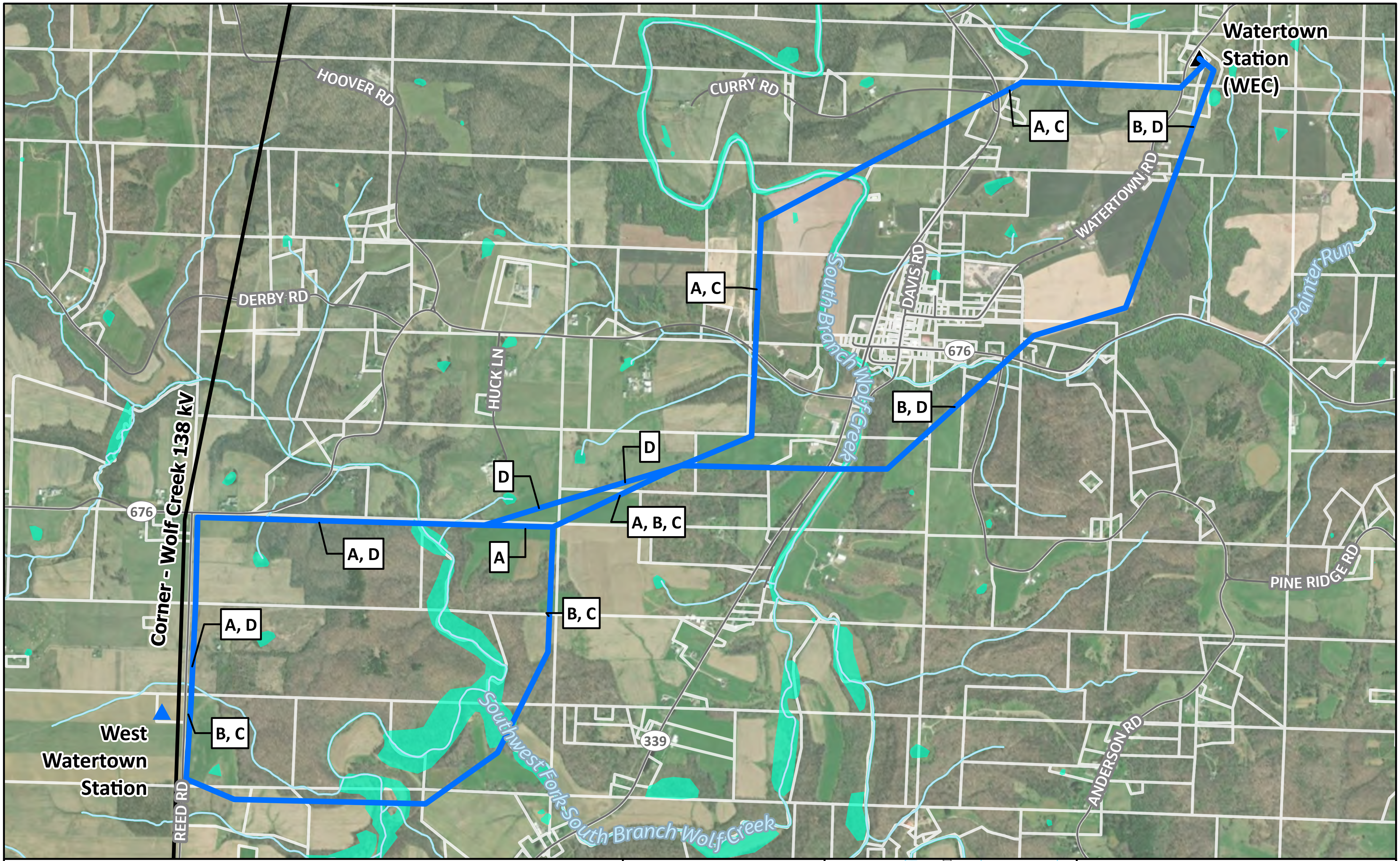


Exhibit 2
Aerial Overview

**West Watertown 138 kV
Transmission Line Project
Washington County, OH**





▲ Planned Substation

▲ Existing Substation

— Alternative Routes

— Existing Transmission Line

— NHD Flowline

— Roadway

🟩 NWI Wetlands

▭ Parcels

Base Map: Source:
ESRI World Imagery

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:6,000

March 20, 2025

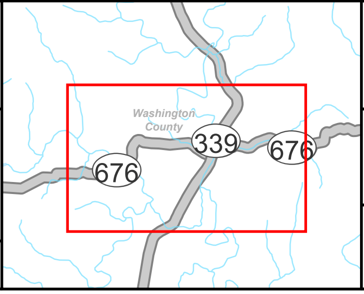


Exhibit 3
Alternative Routes

AEP OHIO

An AEP Company

**West Watertown 138 kV
Transmission Line Project
Washington County, OH**

0 1,000 2,000 3,000
US Feet

Appendix B Long Term Forecast Report and PJM Solution Submittal

12	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Unable to serve new customer
13	**MISCELLANEOUS:**	
1	**LINE NAME AND NUMBER:**	Scherers Switch - Cologix 138 kV (s2789 DP21C0023)
2	**POINTS OF ORIGIN AND TERMINATION**	Scherers Switch - Cologix INTERMEDIATE STATION - N/A
3	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	~0.24 miles/ 100 ft / 1 circuit
4	**VOLTAGE: DESIGN / OPERATE**	138 kV / 138 kV
5	**APPLICATION FOR CERTIFICATE:**	2024
6	**CONSTRUCTION:**	2024
7	**CAPITAL INVESTMENT:**	$0.795 M
8	**PLANNED SUBSTATION:**	Scherers Switch
9	**SUPPORTING STRUCTURES:**	Steel
10	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Service to new customer
12	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Unable to serve new customer
13	**MISCELLANEOUS:**	
1	**LINE NAME AND NUMBER:**	Watertown (WEC) - West Watertown 138 kV (s2791 TP2020022)
2	**POINTS OF ORIGIN AND TERMINATION**	Watertown (WEC) - West Watertown INTERMEDIATE STATION - N/A
3	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	~4.3 miles / 100 ft / 1 circuit
4	**VOLTAGE: DESIGN / OPERATE**	138 kV / 138 kV
5	**APPLICATION FOR CERTIFICATE:**	2024
6	**CONSTRUCTION:**	2024
7	**CAPITAL INVESTMENT:**	$9.32M
8	**PLANNED SUBSTATION:**	West Watertown
9	**SUPPORTING STRUCTURES:**	Steel
10	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Service to customer
12	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Unable to serve customer with new line
13	**MISCELLANEOUS:**	
1	**LINE NAME AND NUMBER:**	West Watertown - Wolf Creek 138 kV (s2791 TP2020022)
2	**POINTS OF ORIGIN AND TERMINATION**	West Watertown - Wolf Creek INTERMEDIATE STATION - N/A
3	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	~4.8 miles / 100 ft / 1 circuit (~0.1 miles of line work)
4	**VOLTAGE: DESIGN / OPERATE**	138 kV / 138 kV
5	**APPLICATION FOR CERTIFICATE:**	2024
6	**CONSTRUCTION:**	2024
7	**CAPITAL INVESTMENT:**	$0.275 M
8	**PLANNED SUBSTATION:**	West Watertown
9	**SUPPORTING STRUCTURES:**	Steel
10	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Service to new customer
12	**CONSEQUENCES OF LINE CONSTRUCTION DEFERMENT OR TERMINATION**	Unable to serve new customer
13	**MISCELLANEOUS:**	
1	**LINE NAME AND NUMBER:**	Corner - West Watertown 138 kV (s2791 TP2020022)
2	**POINTS OF ORIGIN AND TERMINATION**	Corner - West Watertown INTERMEDIATE STATION - Layman
3	**RIGHTS-OF-WAY: LENGTH / WIDTH / CIRCUITS**	~15.7 miles / 100 ft / 1 circuit (~0.1 miles of line work)
4	**VOLTAGE: DESIGN / OPERATE**	138 kV / 138 kV
5	**APPLICATION FOR CERTIFICATE:**	2024
6	**CONSTRUCTION:**	2024
7	**CAPITAL INVESTMENT:**	$0.275 M
8	**PLANNED SUBSTATION:**	West Watertown
9	**SUPPORTING STRUCTURES:**	Steel
10	**PARTICIPATION WITH OTHER UTILITIES**	N/A
11	**PURPOSE OF THE PLANNED TRANSMISSION LINE**	Service to new customer

AEP Transmission Zone M-3 Process
Washington & Morgan Counties Ohio

Need Number: AEP-2019-OH045

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 10/12/2022

Previously Presented:

Solutions Meeting 06/15/2022

Need Meeting 07/24/2019

Project Driver:

Equipment Condition, Operational Flexibility, and Customer Service

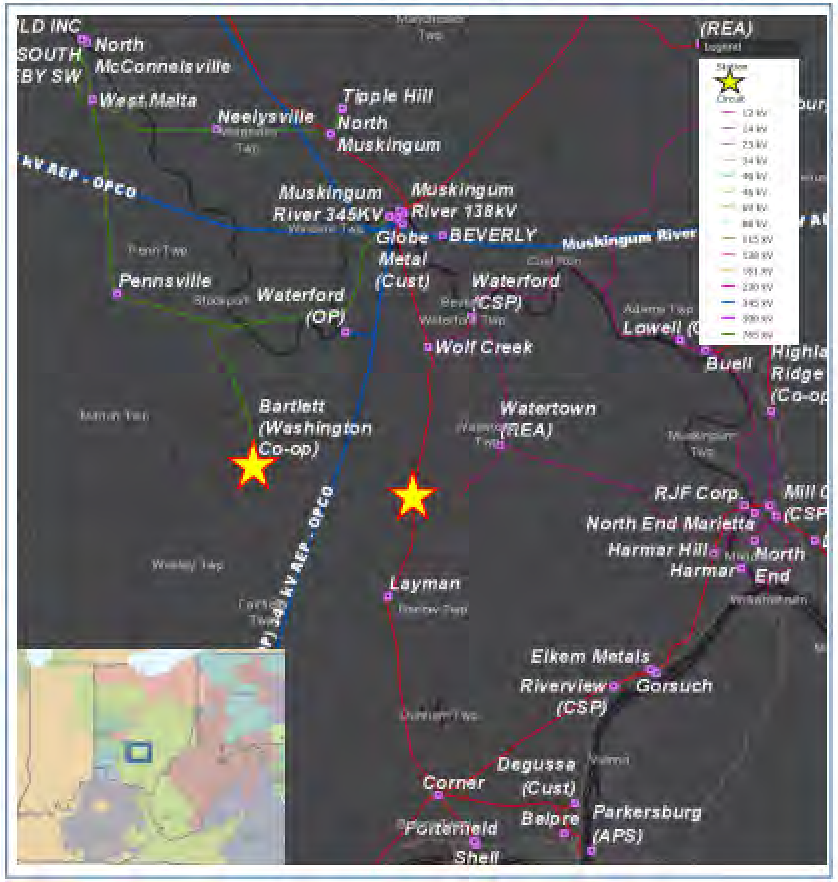
Specific Assumption Reference:

AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 12) & AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:

Customer Service:

- Buckeye Power, on behalf of Washington Electric Cooperative, has requested transmission service in western Washington County, Ohio.
- Washington Electric Cooperative customers are currently connected to radial 23 kV and 12 kV AEP Ohio distribution lines in the area.
- The delivery points connected to the 23 kV system have consistently been identified as having poor reliability by Buckeye.
- Washington Electric Cooperative (WEC) has reported approximately 3,780,000 customer-outage minutes (CMI) over a ten year period (2012-2021).
- WEC's Bartlett delivery, which reported a 1,893,000 CMI between 2012-2021, is currently served via a 5 mile radial extension from a manual switch on the Muskingum River – South Rokeby 69 kV circuit.



AEP Transmission Zone M-3 Process
Washington & Morgan Counties Ohio

Need Number: AEP-2021-OH011

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 10/12/2022

Previously Presented:

Solutions Meeting 06/15/2022

Need Meeting 03/19/2021

Problem Statement

Equipment Condition:

Line Name: Muskingum – South Rokeby 69kV

Original Install Date (Age): 1965

Length of Line: ~21.3 mi

Total structure count: 164

Original Line Construction Type: Wood

Conductor Type: 4/0 ACSR 6/1, 336,400 CM ACSR 18/1, and 336,400 CM ACSR 30/7 Momentary/Permanent Outages and Duration:10 Momentary and 2 Permanent Outages

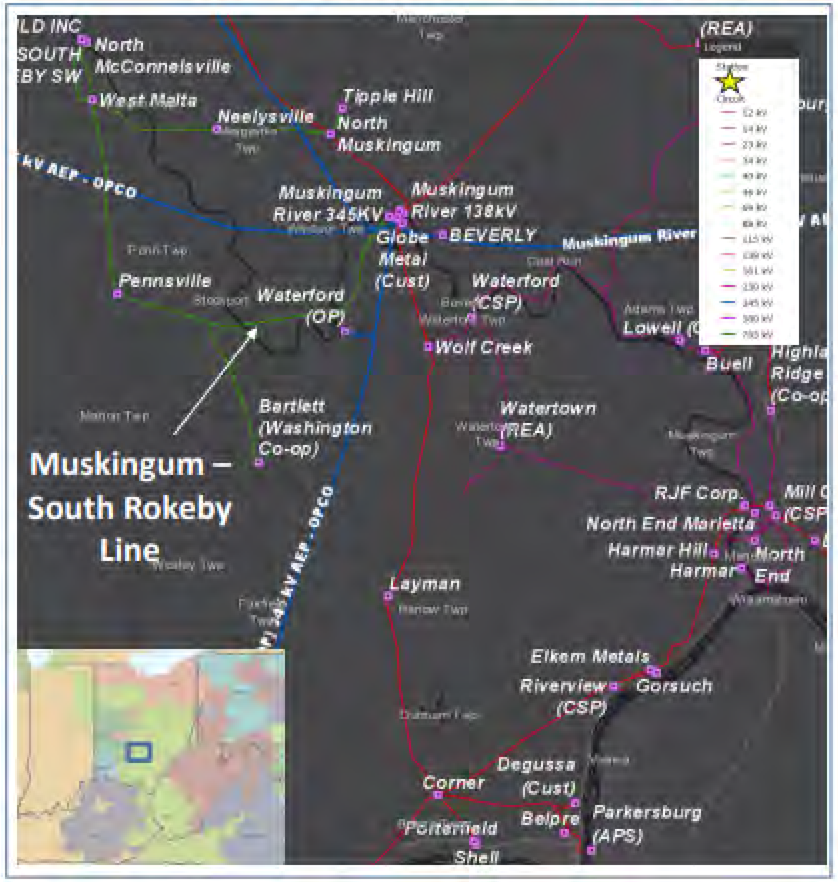
CMI: 756,000 (past five years)

Line conditions: 48 structures with at least one open condition, 29% of the structures on this circuit. 45 structure related open conditions impacting wooden poles, crossarms, braces, and filler blocks including rot, bowing, woodpecker holes, insect damage, cracked, split, and rot top. 12 open conditions related to conductor issues including broken strands. 12 hardware/shielding issues including open conditions related to burnt, broken, or chipped insulators.

Structure Age: 72% 1960's, 15% 1970, 13% 1980's or newer

Other: The line shielding angle does not meet AEP's current shielding angle requirements. Line does not meet current NESC Grade B loading criteria or AEP's current structural strength requirements.

Washington Co-op's Bartlett Station is served radially from this line (~ 5.09 miles) with limited sectionalizing ability.



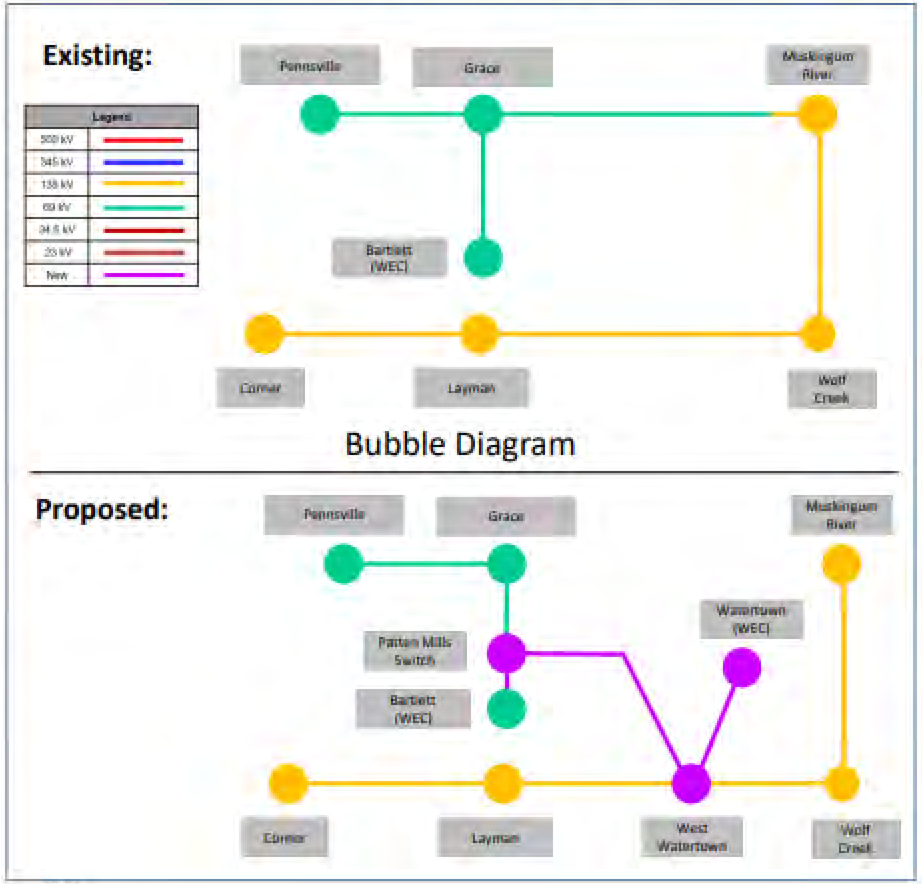
AEP Transmission Zone M-3 Process
Washington & Morgan Counties Ohio

Need Number: AEP-2019-OH045 & AEP-2021-OH011

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 10/12/2022

Solution:

- **West Watertown Station, 138 kV**: Construct a greenfield 138/69 kV West Watertown station off the existing Corner – Wolf Creek 138 kV circuit. Install four-138 kV 3000 A 40 kA breakers configured in a ring arrangement. Install 90 MVA 138/69/13.09 kV transformer along with a 3000A 40 kA 69 kV low side breaker towards WEC's Bartlett delivery. **Estimated Cost: $8.8M (s2791.1)**
- **Wolf Creek – Corner 138 kV Line cut-in**: Cut-in on the line to install the new West Watertown station. **Estimated Cost: $0.55M (s2791.2)**
- **West Watertown – Watertown (WEC) 138 kV circuit:** Construct approximately 4.3 miles of single circuit 138 kV line between the newly proposed West Watertown station and WEC's new 138 kV delivery at Watertown. **Estimated Cost: $9.32M (s2791.3)**
- **West Watertown – Patten Mills 69 kV circuit**: Construct approximately 5.8 miles of single circuit 69 kV line between the newly proposed West Watertown station and a proposed phase over phase switch (Patten Mills Switch) near WEC's delivery at Bartlett. **Estimated Cost: $11.81M (s2791.4)**
- **Patten Mills Switch, 69 kV**: Install a new 69 kV 2000A phase over phase (Patten Mills switch) to serve the Bartlett delivery point. **Estimated Cost: $0.9M (s2791.5)**
- **South Stockport - Washington Co-op 69 kV Line cut-in**: Cut-in on the line to install the new Patten Mills Switch. **Estimated Cost: $0.65M. (s2791.6)**
- **Muskingum River - South Rokeby 69 kV Line Removal**: Retire ~9 miles of existing 69 kV line between Grace and Muskingum River stations. **Estimated Cost: $4.1M (s2791.7)**
- **Muskingum River Removals**: At Muskingum River 138 kV yard, retire the 138/69 kV XF #C, CB-HM & HW. **Estimated Cost: $0.63M (s2791.8)**
- **Grace Station, 69 kV**: Retire Grace - Muskingum River circuit, upgrade protection and fiber work at Grace Station. **Estimated Cost: $0.91M (s2791.9)**



AEP Transmission Zone M-3 Process
Washington & Morgan Counties Ohio

Need Number: AEP-2019-OH045 & AEP-2021-OH011

Process Stage: Submission of Supplemental Project for inclusion in the Local Plan 10/12/2022

- **Grace – Watertown Fiber**: Install fiber between Grace and Watertown stations. **Estimated Cost: $0.55M (s2791.10)**
- **Wolf Creek & Corner Stations Protection upgrades**: Remote end protection upgrade. **Estimated Cost: $0.65M (s2791.11)**
- **Watertown (WEC) Metering**: Install 12 kV revenue metering at WEC's new Watertown station. **Estimated Cost: $0.026M (s2791.12)**

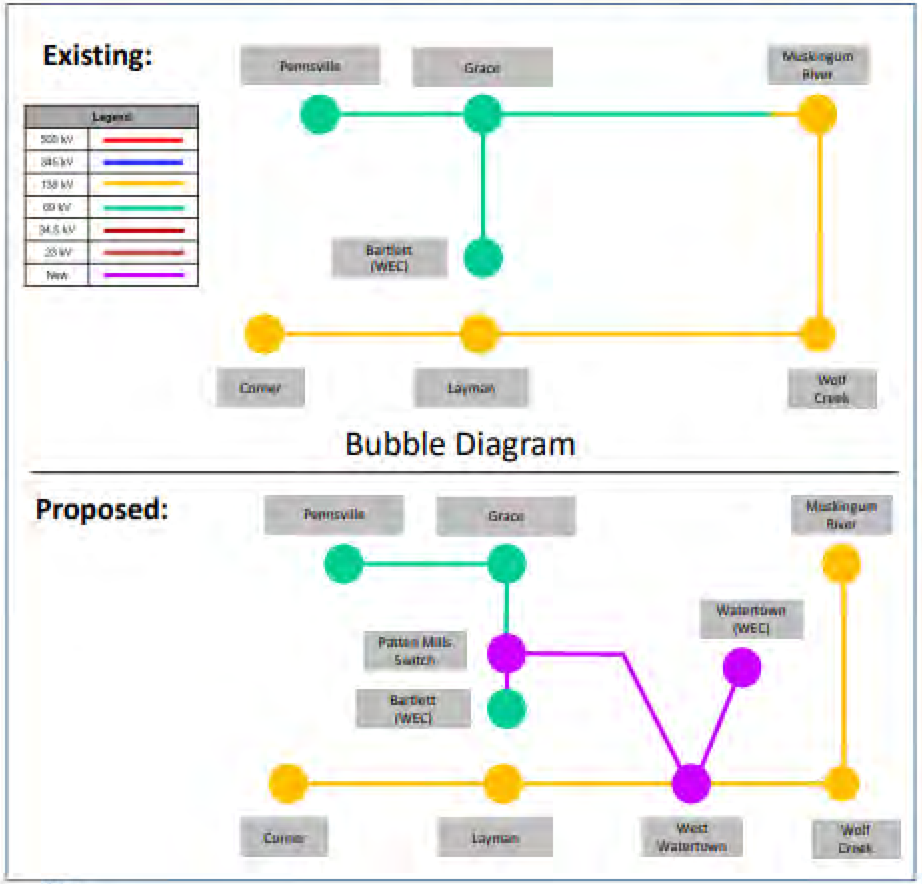
Total Estimated Transmission Cost: $38.9M

Projected In-Service: 9/1/2024

Supplemental Project ID: s2791.1-.12

Project Status: Scoping

Model: 2025 RTEP



Bubble Diagram

Appendix C Siting Study

Siting Study

West Watertown-Watertown 138 kV Transmission Line Project

Ohio Power Siting Board
Case No. 24-0111-EL-BLN

Prepared for:

AEP OHIO
An AEP Company
BOUNDLESS ENERGY™

Submitted to:

American Electric Power

Prepared by:

Jacobs
2 Crowne Point Court
Cincinnati, OH 45241

Jacobs

February 2025

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Attachments

KEY TERMINOLOGY

Alternative Routes	Assemblage of Study Segments that form routes for analysis and comparison.
Conceptual Routes	Initial routes for the project that adhere to a series of general siting and technical guidelines.
Constraints	Specific areas that should be avoided to the extent reasonably practical during the route development and site selection process.
Distribution Line	An electric line that delivers power from a substation to households and businesses.
Endpoints	The project starting and ending point(s) (Project Endpoints), which may include substations, switch stations, tap points, or other locations defined by the Company's planners and engineers.
Land Use	Describes the human use of the land and activities at a given location such as agricultural, residential, industrial, mining, commercial, and recreational uses. It differs from land cover which only describes the physical characteristics (summarized from EPA.gov).
Opportunity Feature(s)	Areas or existing linear features along which the transmission line may have less disruption to area land uses and the natural and cultural environment.
Project	The proposed transmission facilities studied in the siting report.
Proposed Route	The alignment on which the applicant/Siting Team proposes to construct a transmission line. The Proposed Route (1) reasonably minimizes adverse impacts on area land uses and the natural and cultural environment; (2) minimizes special design requirements and unreasonable costs; and (3) can be constructed and operated in a safe, timely, and reliable manner.
Siting Team	A multidisciplinary team of experts in transmission line routing, environmental impact assessment, impact mitigation, engineering, and construction management.
Study Area	The territory in which line route alternatives can be sited to feasibly meet the Project's functional requirements and, at the same time, minimize environmental impacts and Project costs.
Study Segments	Study Segments are partial alignments that when combined form a complete route.
Study Segment Network	The assemblage of study segments between project endpoints.
Substation or Station	Substations or stations are facilities that transform bulk electric voltage down to distribution levels and/or provide protection and controls for the transmission electric grid. Typical equipment includes switches, circuit breakers, buses, and transformers.

Tap Point	The location where power is tapped from an existing transmission line to source a substation or customer.
Transmission Line	An electric line that operates at 69 kilovolts and/or above and has the purpose of moving power from a generation facility to a substation or between substations.
Distribution underbuild	A distribution circuit built underneath a transmission circuit.

ACRONYMS

AEP	American Electric Power
AEP Ohio	American Electric Power Ohio Power Company
the Company	American Electric Power Ohio Power Company
FEMA	Federal Emergency Management Agency
GIS	Geographic information system
GPS	Global positioning system
kV	kilovolt
NERC	North American Electric Reliability Corporation
NHD	National Hydrography Dataset
NLCD	National Land Cover Database
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OHPO	Ohio Historic Preservation Office
OPSB	Ohio Power Siting Board
Project	West Watertown-Watertown 138 kV Transmission Line
ROW	right-of-way
SR	State Route
USFWS	U.S. Fish and Wildlife Service
WEC	Washington Electric Cooperative
WSS	web soil survey

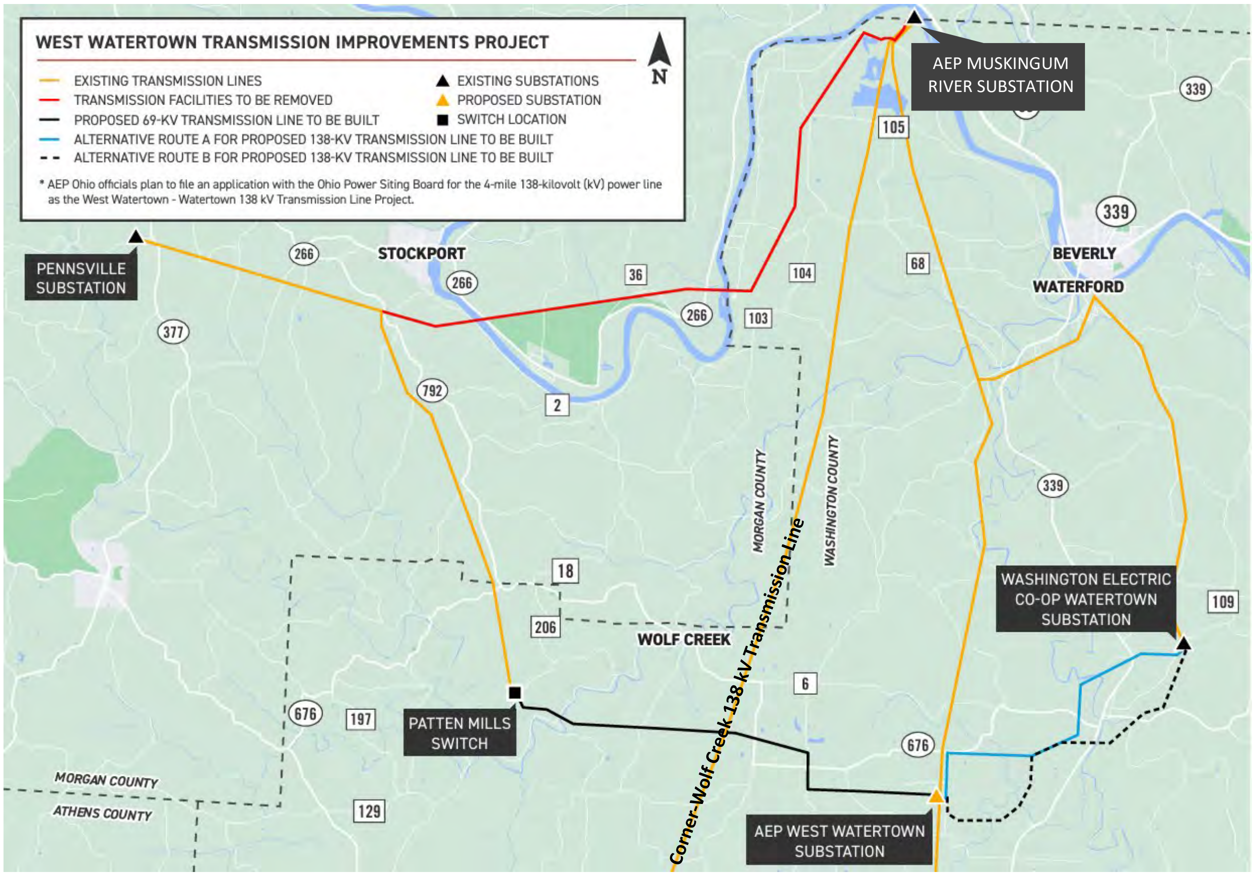
1.0 INTRODUCTION

1.1 Project Description

American Electric Power (AEP) Ohio Power Company (AEP Ohio or the Company) plans to improve operational performance in Washington County, Ohio by enhancing the electric transmission network in the area. The overall project solution is referred to as the West Watertown Transmission Improvements Project (**Figure 1**) and includes:

- Constructing a new West Watertown Station
- Building approximately 5.5 miles of new 69 kilovolt ("kV") transmission line from the proposed West Watertown Station to the Patten Mills Switch
- Retiring a 9-mile portion of 69 kV transmission line between Pennsville Station and Muskingum River Station
- Building approximately 4 miles of new 138 kV transmission line, which is referred to as the West Watertown-Watertown 138 kV Transmission Line Project (the "Project") and is the focus of this study.

The new 138 kV feed between the proposed West Watertown Station and Washington Electric Cooperative's ("WEC") Watertown Station will improve service reliability in the area, as WEC customers are currently served from poor performing radial 23 kV and 12 kV AEP Ohio distribution lines in the Marietta, Ohio area. In addition, the 23 kV system is a non-standard voltage that the Company seeks to eliminate when the opportunity arises.

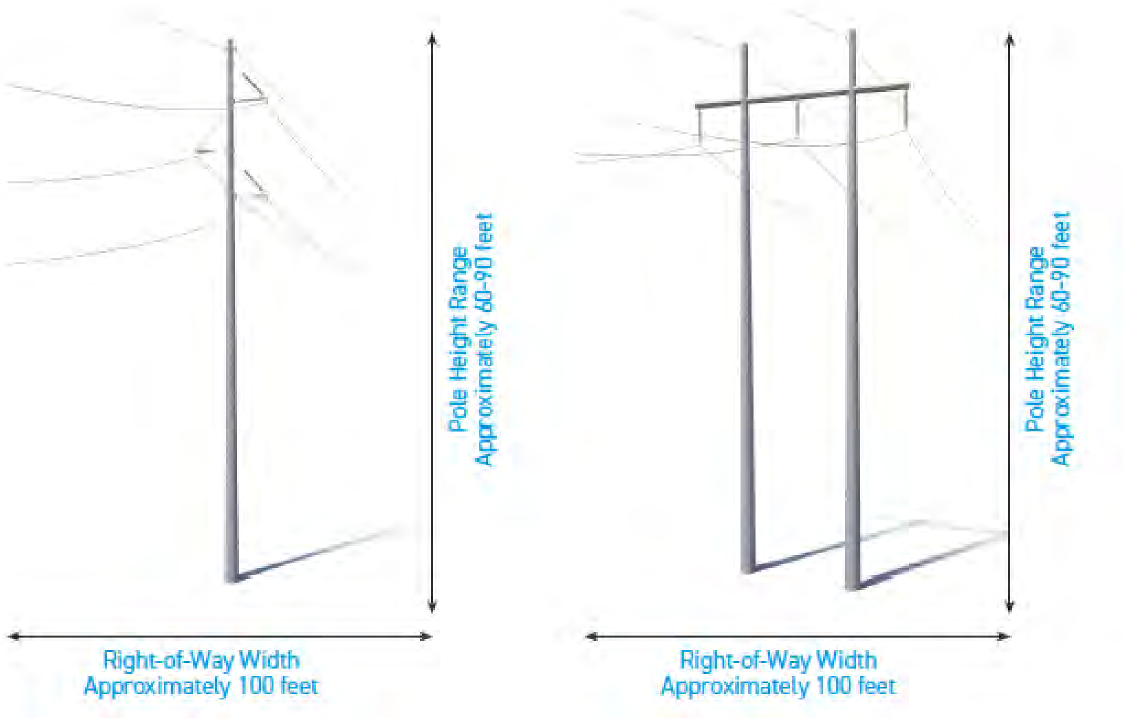


Source: https://www.aeptransmission.com/ohio/WestWatertown/

Figure 1. Project Location Map

1.2 Proposed Transmission Facilities Description

The Project will build approximately 4 miles of single circuit 138 kV transmission line to connect the proposed West Watertown Station and WEC's Water Station. The Project will be constructed using single-steel monopole and H-frame structures ranging from 60 to 90 feet tall and will occupy a right-of-way (ROW) of approximately 100 feet in width. H-frame structures will be used due to the varying slopes in the project area, steel monopole structures are indicated for the spans along this project where double circuiting is required. The typical structure types are provided in **Figure 2**.



Source: https://www.aeptransmission.com/ohio/WestWatertown/

Figure 2. Typical Transmission Line Structure (Steel Monopole and Steel H-Frame)

1.3 Proposed Construction Activities Description

Typical transmission line construction activities include ROW clearing, installing erosion and sediment controls, constructing temporary access roads, grading for crane pads, installing foundations, assembling and erecting structures, installing conductor and shield wire, and restoring the site. These activities can create temporary inconveniences such as traffic delays and detours, potential brief electrical outages to customers, increased heavy equipment traffic, associated noise, and dust.

During the construction process, AEP Ohio will make every effort to be respectful of the natural and human environment. Activities will be conducted according to applicable federal, state, and/or local requirements. After construction, general maintenance activities include periodic ROW vegetative management and inspections to ensure the safe and reliable operation of the transmission line.

1.4 Project Timeline and Overview of Regulatory Approvals

The Company initiated the siting process in September 2021. Study Segments were developed and evaluated from October 2021 to June 2022. Study Segments were refined and presented to a public open house meeting in July 2022. Following the open house, the Company further refined study segments and developed route alternatives. A second open house was conducted in October 2023. Following the open house, a Preferred Route was selected and field surveys were completed. The Company began engineering the route in preparation for a Letter of Notification submittal to the Ohio Power Siting Board, which is anticipated for March 2025. Pending OPSB approval, pre-construction activities will occur in late 2025. Construction is expected to begin in fall 2027 to meet a fall 2028 in-service date.

1.5 Goal of the Siting Study

The goal of the West Watertown-Watertown 138 kV Transmission Line Siting Study (the **Siting Study**) is to develop study segments based on constraints and opportunities in the Study Area, evaluate potential impacts associated with the study segments and identify a proposed route and one or more Alternative Routes. The proposed route is the route that (1) is most consistent with the siting guidelines; (2) reasonably minimizes adverse impacts on the natural and human environments; (3) minimizes special design requirements and unreasonable costs; and (4) can be constructed and operated in a safe, timely, and reliable manner. Section 2.0 describes the route development process.

2.0 ROUTE DEVELOPMENT PROCESS

2.1 Siting Team

The route development process begins by assembling a multi-disciplinary team with a range of experience (the **Siting Team**). Team member expertise includes transmission line siting, environmental impact assessment, impact mitigation, engineering, construction management, project management, electrical system planning, and public relations. The Siting Team includes AEP employees and outside consultants. Additional expertise is added depending on the project needs.

The Siting Team works together to develop siting criteria; identify siting constraints and opportunity features; collect and analyze environmental and design data; solicit stakeholder input; coordinate with resource and permitting agencies; develop, analyze, and revise study segments and Alternative Routes; and report on the selection of a proposed route.

2.2 Route Development Process Overview

The route development process is inherently iterative with frequent modifications made throughout the Siting Study. Iterations result from identifying new constraints; input from agencies, landowners, residents, and other stakeholders; periodic re-assessment of routes, and adjustments to the overall route network. As a result of the evolving nature of the route development process, the Siting Team uses specific vocabulary to describe the routes at different stages of development. The following provides an overview of the route development process and related vocabulary.

Initial route development efforts start with identifying the **Project Endpoints.** Endpoints may include substations, switch stations, tap points, or other locations defined by the Company's planners and engineers. Next, the **Study Area** is defined, and **Constraints and Opportunity Features** are identified in the Study Area using data sources described in Setion 2.3. The Study Area encompasses the Project Endpoints and an area in between **(Figure 3, Step 1)**. The initial constraints and opportunity features are typically identified using readily available public data sources and supplemented with stakeholder input and field inspections.

Once the Project Endpoints, Study Area, and Constraints and Opportunity Features are identified, the **Siting Team** develops an array of **Conceptual Routes** for the Project that adhere to a series of general siting and technical guidelines **(Step 2)**. Where two or more of these Conceptual Routes intersect, **Study Segments** are formed between two common points of intersection. Together, the assemblage of Study Segments is referred to as the **Study Segment Network (Step 3)**.

As route development progresses, the Siting Team continues to evaluate new data from sources such as public and stakeholder input and field inspections. The Siting Team modifies, if necessary, the Study Segments included in the network to develop a **Refined Study Segment Network (Step 4)**. Eventually, **Alternative Routes** are developed by assembling the Study Segments that reasonably meet the **Siting Guidelines** (see Section 2.4) into individual routes for analysis **(Step 5)**. Alternative Routes are assessed based on natural and cultural resources, land uses, and engineering and construction concerns. Ultimately, through a quantitative and qualitative analysis and comparison of the Alternative Routes, the Siting Team identifies a **Proposed Route (Step 6),** which is the most suitable route that meets the goals of the Siting Study (see Section 1.5).

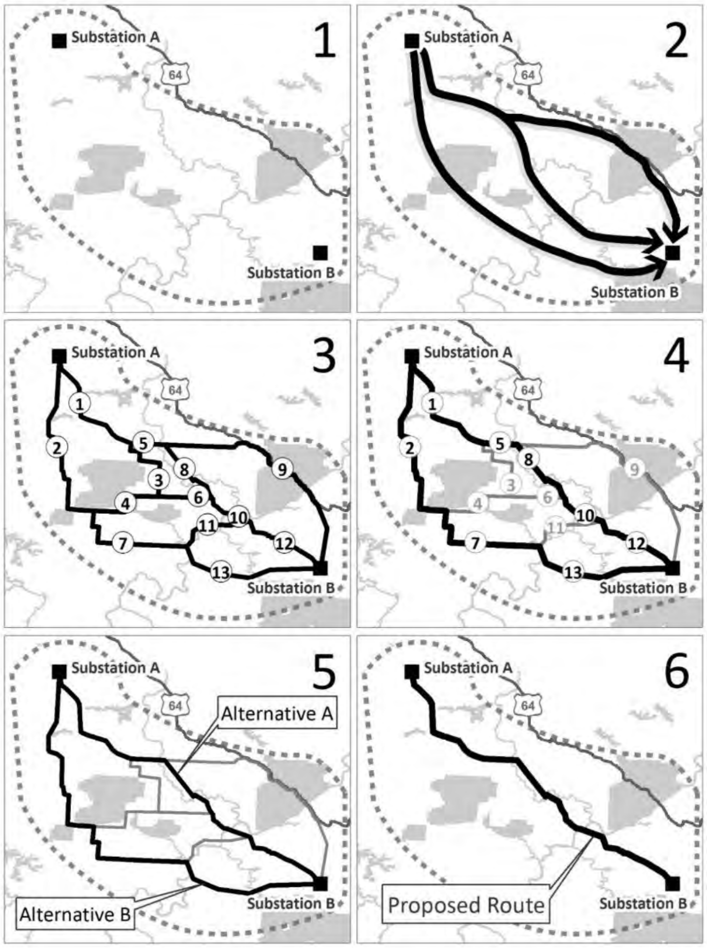


Figure 3. Route Development Steps

Note: This figure shows the route development process and does not depict routes or segments related to this Project.

2.3 Data Collection

The following data sources were used for the Siting Study. Data were reviewed and collected for existing and historic land uses, natural resources, cultural resources, transportation facilities, and existing utility and linear features. A detailed table of data sources used for this study is provided in **Attachment B** – **GIS Data Sources.** The Siting Team collected and reviewed the data, as described in the following sections.

2.3.1 Geographic Information System (GIS) Data Collection

Aerial photography is an important tool for route selection. The primary sources of aerial imagery used to identify, analyze, and select a route for the Project include:

- Environmental Systems Research Institute (ESRI) Aerial Imagery
- Google Earth Imagery

Updated information identified during field inspections and at the public meeting, such as the location of new residences and other constraints, was digitized directly into the geographic information system (GIS) database. The Siting Team also digitized information from paper-based maps, aerial photo interpretation, and field inspections.

GIS data sources vary with respect to their accuracy and precision. Therefore, GIS-based calculations and maps presented throughout this study should be considered reasonable approximations of the resource or geographic features they represent and not absolute measures or counts. The data and calculations presented in this study allow for relative comparisons among project alternatives. Field reconnaissance was conducted to verify certain features (e.g., locations of residential, commercial, and industrial buildings).

2.3.2 Federal, State and Local Government Coordination

The Siting Team obtained information from, or contacted various federal, state, and local agencies and/or officials to inform them of the Project and request data for the route development process. The agencies contacted are listed below. Copies of agency correspondence are included as **Attachment C**.

Federal Agencies

- U.S. Fish and Wildlife Service (USFWS)

State Agencies

- Ohio Department of Natural Resources – Division of Wildlife (ODNR)
- Ohio Historic Preservation Office (OHPO)

Local Utilities

The Siting Team coordinated with a local utility to aid the route development process. This entity included:

- Washington Electric Cooperative (WEC)

2.3.3 Field Reconnaissance

Siting Team members conducted a field inspection of the Study Area in September 2021. Team members examined constraints, opportunity features, and conceptual routes by automobile from public roads and other points of public access and correlated observed features to information shown on aerial photography, U.S. Geological Survey (USGS) 7.5-minute topographic maps, road maps, and publicly available GIS datasets. Before the field inspections, key features such as residences, outbuildings, places of worship, cemeteries, and commercial and industrial areas were identified and mapped in GIS based on a desktop review. These features are field-verified and any new features were added to the GIS database, typically by using tablets running GIS software supported by real-time Global Positioning System (GPS) during field inspection efforts.

2.3.4 Public and Stakeholder Input

Public and stakeholder input is critical to the route development process. Landowners and stakeholders provide information and recommendations that aid the Siting Team in developing and refining Alternative Routes. A project-specific outreach plan was developed and included two open houses, a project website, and mailings. More information on how public and stakeholder input was used for the Project can be found in Section 3.6.

2.4 Siting Guidelines

2.4.1 General Guidelines

To the extent reasonable and practical, the Siting Team used the following general siting guidelines to help develop study segments and routes:

- Avoid or minimize new crossings of large lakes, rivers, and large wetland complexes, critical and protected habitats, and other unique or distinct natural resources.
- Avoid or minimize habitat fragmentation in unfragmented areas and impacts on designated areas of biodiversity concern.

- Maximize the distance from and/or minimize impact on dwellings and community facilities, cemeteries, schools, daycare facilities, hospitals, historic resources, and designated landmarks.
- Avoid or minimize conflict with existing land uses and with future development where a proposed plan, development schedule, and permitting process is underway.
- Minimize interference with existing and future economic activities, natural gas activities, mining operations, and industrial facilities.
- Consider using or paralleling existing ROWs or other linear features and infrastructure when feasible. When paralleling existing facilities, reliability issues and mitigation requirements must be evaluated.
- Consider paralleling property lines, land use breaks, and land cover edges.
- Consider stakeholder input.
- Minimize environmental impact and construction/maintenance costs by selecting shorter, direct routes.
- Consider safety with respect to construction, maintenance, and operation of the facilities.
- Consider construction concerns such as access, road traffic control, power outages, and potential conflicts with pipelines and railroads, telecommunication lines, and distribution lines.
- Consider routes through terrain and land uses where economical construction and environmental best management practices can be employed.
- Minimize environmental impact by considering routes that minimize the overall length of access roads, length on steep slopes, and waterbody crossings.
- Consider state-specific regulatory siting guidelines if available.

2.4.2 Technical Guidelines

Technical guidelines are driven by the physical characteristics and engineering limitations of the structures and lines, design criteria necessary to meet AEP design standards, North American Electric Reliability Corporation (NERC) reliability standards, National Electric Safety Code (NESC) standards, and industry best practices for construction. The technical guidelines were informed by (1) the technical expertise of engineers and other industry professionals responsible for the reliable, safe and economical construction, operation, and maintenance of electric system facilities, (2) NERC reliability standards as implemented by PJM (the regional transmission organization that monitors the electric grid in 13 states), and (3) industry best practices.

The Siting Team considered the following technical guidelines during study segment and route development to the extent practical:

- Minimize crossing higher voltage lines.
- Minimize the length of parallel extra-high-voltage (EHV) transmission lines due to operational and reliability issues.
- Minimize structure angles greater than 30 degrees.
- Minimize distribution underbuild or co-location on transmission structures if possible.
- Minimize route length.

3.0 ALTERNATIVE ROUTE IDENTIFICATION

3.1 Project Endpoints

The western endpoint of the Project is the proposed West Watertown Substation, located off Reed Drive approximately 0.5 mile south of State Route (SR) 676. The eastern endpoint of the Project is WEC's existing Watertown Station, northeast of the Town of Watertown off Watertown Road and approximately 0.5 mile east of SR 339 (Map 1, Attachment A). The location of the proposed West Watertown Substation directly influences the route development process. Therefore, the Siting Team first conducted a substation siting study to determine the location of the proposed West Watertown Substation and is included a separate siting report.

The Company purchased a site for the West Watertown Station in a large, open parcel currently used for agriculture. The site is adjacent to the existing Corner-Wolf Creek 138 kV Transmission Line and provides ample space to create a 69 kV connection from the west, and a 138 kV connection from the east.

3.2 Study Area Description

The Siting Team developed a Study Area for the Project encompassing approximately 5.8 square miles in Washington County, Ohio (**Map 1, Attachment A**).

The Siting Team focused on the area between the Project endpoints: the proposed West Watertown Substation (western endpoint) and WEC's existing Watertown Station (eastern endpoint). The Study Area is bound to the north by Curry Road, mountainous terrain, and forested areas. This boundary maximizes the open and flatter parcels at the base of the steeper and forested area to the north. Steep slopes north of the Study Area present routing challenges and would add undue length to the Project. The eastern bounds of the Study Area roughly follow SR 339 from the Project's eastern endpoint: WEC's existing Watertown Station. The Study Area is bound to the south by parcel boundaries in line with Woodruff Road to minimize the transmission line's length. The western boundary of the Study Area follows parcel boundaries just west of the the proposed West Watertown Substation site.

The Study Area consists of large agricultural and forested parcels with sparse residential development throughout. The West Branch of Wolf Creek crosses the northwest portion of the Study Area, and the Southwest Fork and South Branch of Wolf Creek cross the eastern portion of the Study Area east of Reed Drive and southwest of the Town of Watertown.

3.3 Constraints and Opportunity Features

The Siting Team identified and mapped siting constraints and opportunity features within the Study Area as described below and shown on the Study Area map (**Map 1, Attachment A**).

Constraints

Constraints are specific areas that should be avoided to the extent practical during the route development process. Using readily available public data sources, the Siting Team initially identified large constraints during the beginning of the route development process including, but not limited to, the following:

- Populated areas, including the Town of Watertown
- Resources on the National Register of Historic Places (NRHP; listed and eligible)
- Streams, wetlands, and 100-year floodplain associated with the West Branch, Southwest Fork, and South Branch of Wolf Creek
- Large tracts of forested land
- Steep topography

Constraints within the Study Area include residential areas adjacent to the Town of Watertown; sparse residential development dispersed throughout the Study Area; 100-year floodplain associated with the West Branch, Southwest Fork, and South Branch of Wolf Creek; large tracts of forested land dispersed throughout the Study Area; and steep topography.

As the Siting Team developed Study Segments, smaller site-specific constraints were identified. Through the iterative process of route development (described in Section 2.0), the Study Segments were adjusted to avoid small constraints where feasible, including, but not limited to, the following:

- Individual residences (houses, mobile homes, and multi-family buildings)
- Commercial and industrial buildings
- Outbuildings and barns
- Cemeteries
- Designated historic and cultural resources
- Small wetlands

Opportunity Features

Opportunity features are typically existing corridors, areas, or edges where a transmission line would be compatible with the land use, or its impact would be reduced by an existing linear feature. Opportunity features typically considered include other linear infrastructure and utility corridors, rail lines, and roads, but may also include land cover edges, unused portions of industrial or commercial areas, or parcel boundaries. Siting opportunities identified within the Study Area are listed below and presented on the Study Area map (**Map 1, Attachment A**).

- Agricultural fields
- Local roads including SR 339 and Reed Drive
- Parcel boundaries
- Existing Corner-Wolf Creek 138 kV Transmission Line

Open agricultural fields provide routing opportunities along parcel boundaries for the Project by limiting impacts on residences and other land uses elsewhere in the Study Area. Paralleling existing local roads limits the amount of construction required for access roads and reduces associated land use impacts and construction costs.

3.4 Routing Concepts

The Siting Team focused study segment development on routing opportunities across open, agricultural fields and along parcel boundaries while avoiding areas of steep topography, particularly near the Southwest Fork South Branch Wolf Creek.

3.5 Study Segment Development

The Siting Team developed 35 Study Segments based on the route development process and criteria described in Section 2.0. **Map 2, Attachment A** shows the resulting network of Study Segments used to collect public and stakeholder input.

Segments 1, 7, 11 and 19 were developed to provide routing options north of the Town of Watertown. Segments 17 and 18 were developed at the junction of Segments 11 and 19 to provide an option that routes south along parcel boundaries, avoiding impacts to trees. Segments 2, 3, 6, 8, 9, and 10 were developed along Watertown Road and through agricultural fields to provide routing options that were still north of the Town of Watertown, but south of Segment 7. Segment 7 provides the northernmost routing option along parcel boundaries and through agricultural fields.

Segments 4 and 5 were developed as a southeast exit from WEC's existing Watertown Substation, to provide options for a route on the eastern boundary of the Town of Watertown. From Segment 5, Segment 14 provides a route south of the Town of Watertown. From Segment 5, Segments 12 and 13 provide a route north of the Town of Watertown and Segments 16, 33, 35, 34, and 25 use the open space adjacent to the SR 339 ROW to provide a routing option through the Town of Watertown.

Segment 15 was developed south of the Town of Watertown as a western routing option from the intersection of Segments 14 and 34. Segment 25 routes further south utilizing a portion of the State Route 339 corridor. Segments 23, 24, and 26 provide multiple routing options continuing west through open agricultural fields. From the junction of Segments 23, 24, and 26, Segments 20, 21, 22, and 30 provide northern routing options along parcel boundaries, while Segments 28 and 31 provide a middle routing option to the proposed West Watertown Substation. Finally, Segments 32 and 29 provide southern routing options to the proposed West Watertown Substation. The Study Segments were evaluated and refined after public and stakeholder input.

3.6 Public and Stakeholder Input

3.6.1 Public Communications and Open House

A public informational open house was held for the larger West Watertown Transmission Improvements Project in July 2022. The Siting Team set up stations at the meeting and provided information on engineering and design of the structures, environmental and forestry concerns, Project need, real estate and ROW issues, and the siting process. The community was notified about the time and location of the meeting through the following means:

1. Letters notifying landowners and public officials of the public information meeting were mailed via first class mail on July 13, 2022.
2. Meeting information was posted on the Project website (Section 3.6.2).
3. A public notice ran in the newspaper *Marietta Times* (Washington County) on July 13, 2022.

Printed maps were provided at the open house for the public to review and were used to record written comments concerning sensitive resources in their local environment. Members of the Siting Team greeted meeting attendees, answered questions about the Project, and aided attendees in locating their property or other features of concern on aerial maps showing the array of Study Segments under consideration. Participants were encouraged to document the location of their houses, places of business, property of concern, or other sensitive resources on the printed maps. After the public open house, handwritten comments were digitized and entered into a GIS database.

Comment sheets were distributed to meeting attendees. Attendees were asked to fill out the sheet, including contact information. The Siting Team reviewed the comment sheets, and scanned and stored them in the Project database as a record of meeting attendance and public comments. Thirty people attended the open house. Fifteen comment cards were collected, including nine specific to the Project.

3.6.2 Project Website and Virtual Open House

A website was created for the Project (https://aeptransmission.com/ohio/WestWatertown/) that provides a description, map, fact sheet, and timeline of the Project. The website also provides an online comment submission form to submit comments on the Project. Additionally, a contact number for AEP Ohio's Project Outreach Specialist was provided.

3.6.3 Consideration of Public and Stakeholder Input

Comments received at the public open house, and comments that the Company received via phone calls, U.S. mail, email, and the Project website were cataloged and reviewed. Two comment cards were received via U.S. mail or online. Comments included preferences for certain segments, concerns about impacts to agricultural land and existing agricultural operations, and concerns about property value and the impact of the Project. The Siting Team reviewed all the comments and, where applicable, incorporated the information when reviewing and revising the Study Segments, which is described in more detail in Section 3.7, below.

In addition to the public informational open house, a second open house was held on October 18, 2023. See Section 4.4 for more details.

3.7 Study Segment Evaluation and Refinement

Using public and stakeholder input and updated mapping, the Study Segments were evaluated and refined in an effort to avoid or minimize impacts to resources in the Study Area. As a result, some Study Segments were removed and modified throughout the siting process. **Map 3, Attachment A** shows the Refined Study Segments.

Based on public comments and Siting Team feedback, Segments 8 and 10 were removed from consideration to reduce impacts to nearby residences and active agricultural operations. Segment 8 routes between two residences off SR 339; the Siting Team determined that other segments in the Study Segment Network are less impactful to nearby residences. As a result of removing Segments 8 and 10, Segments 2, 3, 6, and 9 were removed from consideration due to their lack of connectivity to the rest of the Study Segment Network.

Segment 12 was removed from consideration due to terrain concerns and splitting a parcel with active agricultural operations. Segment 16 was removed from consideration due to engineering and permitting challenges related to the wide 100-year floodplain associated with the South Branch Wolf Creek near the intersection of SR 676 and SR 339. Due to the wide 100-year floodplain, crossing of SR 339, and steep terrain in the area, Segment 16 would require a structure to be placed in the 100-year floodplain. As a result of removing Segments 12 and 16, Segment 13 was removed from consideration due to lack of connectivity with the Study Segment Network. Segments 25, 34, and 33 were removed from consideration due to engineering challenges related to steep terrain along the west side of SR 339.

Upon removing Segment 25, Segments 26 and 27 were removed from consideration because Segment 25 connected Segments 26 and 27 to the rest of the Study Segment Network. Based on public comments and Siting Team feedback, Segments 19, 20, 21, and 28 were removed to reduce impacts on nearby residences and businesses.

Segments 23 and 24 were shifted to the southeast based on public comments and engineering challenges related to a nearby drainage feature. By slightly shifting Segments 23 and 24, the drainage feature can be avoided.

No new Study Segments were added to the Study Segment Network. Out of the 35 Study Segments reviewed at the open house, 17 Study Segments were retained and developed into four Alternative Routes to be further evaluated.

3.8 Alternative Routes

The Siting Team met frequently throughout the route development process, continually reviewing, modifying, and eliminating Study Segments based on field inspections, engineering requirements, and stakeholder input. At the end of the process, the Siting Team compiled the Study Segments into four Alternative Routes for analysis and comparison. These Alternative Routes are described in the following sections and are shown in more detail on **Map 4, Attachment A**.

3.8.1 Alternative Route A

Alternative Route A exits WEC's existing Watertown Station to the west/southwest, crossing Watertown Road, SR 339, and wetlands and 100-year floodplain associated with the South Branch Wolf Creek. Alternative Route A continues southwest through forested land and open agricultural fields, and along parcel boundaries. Alternative Route A routes west along parcel boundaries, crossing a wetland complex associated with an unnamed NHD stream. Alternative Route A turns south, paralleling Reed Drive, before crossing Reed Drive and connecting to the proposed West Watertown Substation. Alternative Route A is one of the northernmost Alternative Routes and provides a routing option north and west of the Town of Watertown, avoiding the developed and historic area.

3.8.2 Alternative Route B

Alternative Route B exits WEC's existing Watertown Station to the south and southwest through agricultural fields before crossing SR 676. Alternative Route B routes west through agricultural fields before crossing South Branch Wolf Creek and SR 339. Alternative Route B continues south/southwest through agricultural fields and forested land. Alternative Route B routes south along parcel boundaries before crossing a forested parcel and a stream and wetland complex associated with the Southwest Fork South Branch Wolf Creek in two different locations. Alternative Route B continues west before routing north to parallel Reed Drive. Alternative Route B crosses Reed Drive and connects to the proposed West Watertown Substation. Alternative Route B is the southernmost Alternative Route and provides a routing option south and east of the Town of Watertown, avoiding the developed and historic area.

3.8.3 Alternative Route C

Alternative Route C exits WEC's existing Watertown Station to the west/southwest, crossing Watertown Road, SR 339, and wetlands and 100-year floodplain associated with the South Branch Wolf Creek. Alternative Route C continues southwest through forested land and open agricultural fields, and along parcel boundaries. Alternative Route C routes south along parcel boundaries before crossing a forested parcel and a stream and wetland complex associated with the Southwest Fork South Branch Wolf Creek in two different locations. Alternative Route C continues west before routing north to parallel Reed Drive. Alternative Route C crosses Reed Drive and connects to the proposed West Watertown Substation. Alternative Route C provides a routing option north and west of the Town of Watertown, avoiding the developed and historic area, before continuing in the southern portion of the study area.

3.8.4 Alternative Route D

Alternative Route D exits WEC's existing Watertown Station to the south and southwest through agricultural fields before crossing SR 676. Alternative Route D routes west through agricultural fields before crossing South Branch Wolf Creek and SR 339. Alternative Route D continues southwest through open agricultural fields and forested land. Alternative Route D routes west along parcel boundaries, crossing a wetland complex associated with an unnamed NHD stream. Alternative Route D turns south, paralleling Reed Drive, before crossing Reed Drive and connecting to the proposed West Watertown Substation. Alternative Route D provides a routing option south and east of the Town of Watertown, avoiding the developed and historic area, before connecting to the proposed West Watertown Substation from the north.

4.0 ALTERNATIVE ROUTE COMPARISON

The Alternative Routes comparison provides a quantitative and qualitative analysis of potential impacts to local communities, the environment, and cultural resources as well as engineering and constructability concerns. The Alternative Routes were reviewed in detail and compared using a combination of information collected in the field, GIS data sources, public input, supporting documents, and the collective knowledge and experience of the Siting Team.

4.1 Natural Environment

The natural environment includes water, soil, sensitive species, and wildlife habitat. Potential impacts are based on publicly available maps and data and coordination with federal, state, and local agencies. The Siting Study goal is to avoid or minimize impacts on the natural environment to the extent practicable during construction, operation, and maintenance of the transmission facilities. A comparison of the natural environment considerations for the Alternative Routes is presented in **Table 1**.

Table 1. Natural Environment Evaluation Criteria

Alternative Route	Unit	A	B	C	D
General					
Length	miles	4.1	4.4	4.4	4.1
Water Resources					
Total streams crossed	count	8	7	7	8
Forested wetlands in the ROW (NWI)	acres	0.2	1.9	1.9	0.2
FEMA-designated floodplain crossed by ROW	acres	1.7	2.8	2.9	1.6
No springs, High/Exceptional/Special Protection streams, riparian buffers, PEM/PSS wetlands, or waterbody crossings were identified.					
Geological and Soil Resources					
Prime and unique farmland soil in the ROW[a]	acres	15.6	10.7	12.1	14.1
No farmland of statewide importance, Karst topography, or known caves or mines were identified.					
Wildlife and Habitat					
Tree clearing required in the ROW (digitized based on aerial photography)	acres	18.6	15.2	18.7	15.3
No length of clearing parallel to existing linear infrastructure or designated natural areas were identified.					

[a] Prime farmland is land that has the best combination of physical and chemical characteristics for producing crops.

FEMA = Federal Emergency Management Agency
NWI = National Wetlands Inventory

4.1.1 Geological, Soil, and Water

Resource Characteristics

The Study Area is characterized by rolling topography, large areas of forest cover, agricultural land, wetland complexes, and 100-year floodplain associated with streams and creeks. The South Branch Wolf Creek runs north-south through the Town of Watertown in the northeastern and southeastern portions of the study area. The Southwest Fork of the South Branch Wolf Creek runs north-south to the east of Reed Drive and southwest of the Town of Watertown, in the southern portion of the study area. Prime farmland, as designated by the United States Department of Agriculture's Natural Resources Conservation Service web soil survey (WSS), is common throughout the Study Area. Wetlands are abundant throughout the Study Area, particularly along the streams and creeks. Federal Emergency Management (FEMA) 100-year floodplain is present along the South Branch Wolf Creek and the Southwest Fork of the South Branch Wolf Creek. National Wetlands Inventory (NWI), NHD, FEMA, and WSS, were the data sources used for soil and water resources in the Route Alternatives assessment.

Alternative Route Comparison

Each Alternative Route has impacts to geological, soil and water resources in the Study Area as each route crosses multiple NHD streams, 100-year floodplain, NWI wetlands, and prime farmland soil. Alternative Routes B and C impact more forested wetlands in the ROW than the other Alternative Routes. Alternative Route A impacts the most prime farmland, while Alternative Route B impacts the least prime farmland. Direct impacts to geological, soil, and water resources will be minimized or avoided by spanning wetlands and streams where feasible, and by abutting parcel boundaries in open agricultural fields to reduce impacts to prime farmland and active agricultural operations.

4.1.2 Wildlife Habitat and Sensitive Species

Resource Characteristics

General habitat in the Study Area includes agricultural land, pasture, mature forests, and stream/wetland areas. Based on consultation with the USFWS in November 2023, four federally endangered, threatened, proposed endangered or candidate species may occur within the Study Area (**Attachment C**). The list of species includes the following:

- Indiana bat (*Myotis sodalis*) – Endangered
- Northern long-eared bat (*Myotis septentrionalis*) – Endangered
- Tricolored bat (*Perimyotis subflavus*) – Proposed endangered
- Monarch Butterfly (*Danaus plexippus*) – Candidate

Alternative Route Comparison

Potential impacts to wildlife habitat and sensitive species within the Study Area can be assessed by comparing each Alternative Route with respect to the anticipated impacts to forest and stream habitat. Based on review of aerial imagery, Alternative Routes A and C could result in a greater impact to the Indiana bat, northern long-eared bat, and tri-colored bat habitats due to higher amounts of tree clearing required along the route compared to the other Alternative Routes. There are no known underground mines or Karst areas in the Project area where sensitive species habitat may occur. Wildlife and habitat resources are identified in **Table 2**.

Table 2. Threatened and Endangered Species

Species Name	Status	Habitat Type	Note
Indiana Bat (*Myotis sodalis*)	State and Federal Endangered status	Trees greater than 3 inches diameter at breast height, caves, abandoned mines, wooded areas with loose tree bark or dead or dying trees.	Habitat observed in Project area.
Northern long-eared bat (*Myotis septentrionalis*)	State and Federal Endangered status	Roots in cavities or in crevices of both live trees and snags; Hibernate in caves and mines with constant temperatures, high humidity, and no air currents.	Habitat observed in Project area.
Tri Tricolored bat (*Perimyotis subflavus*)	State and Federal Endangered status	Roots in cavities or in crevices of both live trees and snags; Hibernate in caves and mines with constant temperatures, high humidity, and no air currents.	Habitat observed in Project area.

4.2 Human Environment

The human use of the land and activities at a given location is comprised of agricultural, forestry, residential, industrial, mining, commercial, institutional, scenic assets, and recreational uses. The Siting Study goal is to avoid or minimize conflicts with existing and proposed land uses that are not compatible with a new transmission line. A comparison of the human environment considerations for the Alternative Routes is in **Table 3.**

4.2.1 Existing Land Use

Resource Characteristics

The Study Area primarily consists of single-family residential structures on large lots west of the Town of Watertown, single-family structures on small lots within Watertown, and agricultural land use and forested areas dispersed throughout the Study Area. SR 676 runs east-west through the middle of the Study Area. SR 339 runs north-south through Watertown on the east side of the Study Area. There are no known planned developments for the area.

Alternative Route Comparison

Study segments developed for the Project were routed across agricultural fields or adjacent to parcel boundaries to avoid the built environment. There are no major developed use differences between the Alternative Routes. The Alternative Routes have comparable numbers of residences within the ROW and within 100 feet of centerline. Alternative Route D has the highest number of residences within 250 feet of centerline and Alternative Routes C and A have the lowest. Alternative Route C has the highest number of residences within 500 feet of centerline and Alternative Route A has the lowest. The Alternative Routes do not impact businesses or commercial buildings within the ROW. Alternative Route A and D cross the least number of parcels and Alternative Route A crosses the least number of landowners within the ROW.

4.2.2 Agricultural and Forestry Resources

Resource Characteristics

Agricultural land uses and forested areas are dispersed throughout the Study Area. Agricultural fields in the Study Area are primarily used for row crops and hay production.

Alternative Comparison

All of the Alternative Routes impact agricultural land and forested areas. Based on National Land Cover Database (NLCD) data, there are no major differences in the acres of pasture/rangeland crossed by the ROWs of Alternative Routes. The acreage of cropland crossed in ROW for Alternative Routes A and D are comparable and the lowest of the Alternative Routes. The acreage of cropland crossed in ROW for Alternative Routes B and C are comparable and the highest. Alternative Routes B and D would have a greater impact to agricultural operations because these routes cut more through the middle of agricultural fields. Alternative Routes A and C minimize agricultural impacts by paralleling parcel boundaries.

Table 3. Human Environment Evaluation Criteria

Alternative Route	Unit	A	B	C	D
General					
Length	miles	4.1	4.4	4.4	4.1
Number of parcels[a] crossed	count	27	33	32	27
Landowners within ROW	count	18	23	20	21
Municipalities, Counties, and Townships Crossed					
Palmer Township	miles	0	0	0	0
Watertown Township	miles	4.1	4.4	4.4	4.1
Residential					
Barns, outbuildings, sheds, garages, and silos in the ROW (excludes abandoned features)	count	0	1	0	1
Residences/single-family dwellings within ROW	count	0	1	0	1
Residences/single-family dwellings within 100 feet of centerline	count	0	1	0	1
Residences/single-family dwellings within 250 feet of centerline	count	5	8	4	9
Residences/single-family dwellings within 500 feet of centerline	count	15	22	31	17
No multi-family dwellings within ROW, within 250 or 500 feet were identified. No businesses/commercial buildings are within the ROW. No mining areas or quarries are crossed by the Alternative Routes.					
Agricultural					
Pasture/rangeland crossed in ROW (based on NLCD data)	acres	26.6	25.9	18.9	8.6
Cropland crossed in ROW (based on NLCD data)	acres	3.7	6.8	17.8	25
No tree farms/orchards or agricultural easements are crossed by the ROW.					
Community/Recreational Facilities					

Table 3. Human Environment Evaluation Criteria

Alternative Route	Unit	A	B	C	D
No schools or designated places of worship are within 1,000 feet of the Alternative Routes. No cemeteries, hospitals or assisted living facilities are within 250 feet of the Alternative Routes. No parks, recreation areas or scenic byways are crossed by the ROW.					
Protected Land					
No federal or state land, conservation easements or local public lands are crossed by the ROW.					
Cultural Resources					
NRHP-listed Historic Districts within 1 mile of the centerline	count	1	1	1	1
No NRHP listed and eligible architectural resources or National Historic Landmarks are within 1 mile of the Alternative Routes. No NRHP-listed and eligible archaeological sites are within the ROW.					

[a] The number of parcels crossed refers to the number of individual plots of owned land recorded by each county. The number of landowners within the ROW represent the number of individual landowners, who each may own one or more parcels.

4.2.3 Historic and Archaeological Resources

Resource Characteristics

As part of the due diligence review, the Siting Team investigated the presence of historic and archaeological resources within the Study Area. The Siting Team conducted a records search using the records available through the OHPO online GIS database. The literature review focused on identifying previously inventoried archaeological sites, historic structures or resources, cemeteries, and other cultural resources. The review included a search of the National Historic Landmarks list, NRHP, previous Cultural Resources Management reports, and various Ohio databases.

The Watertown Historic District is in the northeastern portion of the Study Area, in the Town of Watertown. There are 36 architectural resources within the Study Area. There are no previously identified archaeological sites within the Study Area. There are three cemeteries within the Study Area, two in the northeastern portion and one in the southern portion. The cemeteries include Watertown Cemetery (14239), North Watertown Cemetery (12575), and Green-Woodruff Cemetery (12571).

NRHP-eligible resources identified within the within 1 mile of the Alternative Routes centerline are identified in **Table 4.**

Table 4. Historic Architectural Resources within 1 mile (NRHP Listed and Eligible)

Resource No.	Resource Name	Distance from Alternative Route A	Distance from Alternative Route B	Distance from Alternative Route C	Distance from Alternative Route D	NRHP Status
2014WAS28156	SOH3840 Watertown	0.5 mile	0.1 mile	0.5 mile	0.1 mile	Eligible
86000728	Watertown Historic District	0.5 mile	0.3 mile	0.5 mile	0.1 mile	Listed

Alternative Route Comparison

Based on the general location of the Project near the Watertown Historic District, all route alternatives have the potential to impact cultural resources. All Alternative Routes avoid crossing the Watertown Historic District; the southern routes, Alternative Routes B and D are closer to the Watertown Historic District than the northern routes, Alternative Route A and C, which could cause a greater visual impact. The Woodruff Bridge historic structure in the southwestern corner of the Study Area is not impacted by any Alternative Route. There are no cemeteries within 250 feet of centerline of the Alternative Routes.

4.3 Constructability

Constructability is the ability to efficiently and cost effectively engineer, acquire ROW, construct, operate, and maintain the proposed transmission line. Major factors include safety, steep topography, condensed ROWs, heavy angles, access, ability to parallel or use existing ROWs, features, and proximity to major highways. A comparison of the constructability considerations for the Alternative Routes is in **Table 5.**

Table 5. Constructability Evaluation Criteria

Alternative Route	Unit	A	B	C	D
General					
Length	miles	4.1	4.4	4.4	4.1
Transportation Resources					
Interstate highways crossed	count	0	0	0	0
U.S. highways crossed	count	0	0	0	0
State highways crossed	count	2	2	2	2
Local roads and streets crossed	count	3	3	3	3
Railroads crossed	count	0	0	0	0
Airports within one mile of the centerline	count	0	0	0	0
Utility Resources					
Oil and gas pipelines crossed	count	2	2	2	2
Oil and gas wells within 250 feet from edge of ROW	count	14	6	11	7
Communication towers within 1,000 feet of the centerline	count	1	0	1	0
Steep slopes crossed by ROW (>20%), percent of total length	miles	23.5%	18.2%	22.3%	20.0%
Heavy angles, greater than 30 degrees	count	7	7	9	5
Rights-of-Way Rebuild/Parallel					
Existing 138 kV transmission lines paralleled	miles	0	0	0	0
Oil and Gas Pipeline paralleled	miles	0.5	0.2	0.2	0.5
Interstate highways, U.S. highways, State highways, and local roads	miles	0.5	0.2	0.2	0.5
No existing transmission lines are rebuilt and no railroad are rebuilt.					

4.3.1 Engineering

Potential engineering and construction challenges are important to consider when siting a transmission line as these elements could ultimately require extensive or non-standard engineering and lead to increases in impacts and overall cost. The proximity to existing roadway, transmission, and gas pipeline infrastructure could also pose potential engineering and construction challenges. The Siting Team attempted to minimize engineering challenges during route development.

Within the Study Area, there were few constraints that would limit the construction of a transmission line. Flat agricultural land observed throughout the Study Area is conducive to transmission line development because this landscape allows the transmission line to be sited along straight alignments with few heavy angles, or natural features that need to be avoided. Study segments were developed to minimize steep topography in the northern portions of the study area. South Branch Wolf Creek, Southwest Fork South Branch Wolf Creek, and unnamed tributaries run through the Study Area and need to be crossed. SR 339 and SR 676 run through the Study Area and provide an opportunity to parallel existing utility assets and condense linear infrastructure.

Alternative Comparison

The Alternative Routes have similar engineering and constructability challenges. All of the Alternative Routes cross the same number of state highways and local roads and streets. None of the Alternative Routes cross an interstate highway, U.S. highway, or railroad. Alternative Routes A and C have the highest percentage of steep slopes (slopes greater than 20 percent) crossed by the ROW because Alternative Routes A and C route through an area north of the Southwest Fork South Branch Wolf Creek that is characterized by rolling topography, whereas Alternative Routes B and D route around this area to the south. The Alternative Routes have a similar number of heavy angles (greater than 30 degrees).

4.3.2 Access Roads

All access roads for the Project would be temporary. Routes that traverse agricultural fields would require new access roads. Developing these access roads would add to project development costs and have a greater impact on farming operations compared to roadside routes.

In contrast, roadside construction would not result in disturbance across farm fields during construction. Challenges associated with access using existing roads are tied to traffic management and potential road closures for short periods of time. Despite these temporary disturbances to traffic flow, roadside construction would lessen the impact on farming and agricultural productivity in the area during the construction phase. Paralleling existing roads also limits the amount of construction and associated impacts and reduces construction costs.

Alternative Routes Comparison

The Alternative Routes parallel a similar length of local roads, therefore would require a similar number of access roads.

4.3.3 Right-of-Way

The Siting Team attempted to minimize route length, number of parcels crossed, and ROW acquisition. Where possible and practical, the Siting Team considered paralleling roadway infrastructure and existing transmission ROW.

Alternative Comparison

All of the Alternative Routes will require new easements for the entire length of the routes. All of the Alternative Routes parallel Reed Drive on the east side and the existing Corner-Wolf Creek 138 kV Transmission Line is on the west side of Reed Drive, therefore the Alternative Routes do not parallel this existing transmission ROW. All of the Alternative Routes parallel a gas pipeline for a short distance; Alternative Routes A and D parallel the pipeline the longest for 0.5 mile. Land use impacts are reduced by paralleling existing linear features, such as an existing gas pipeline.

4.3.4 Final Alternative Routes

The Siting Team reviewed the four Alternative Routes based on quantitative data, landowner comments, and preliminary engineering design to determine which routes had less impact on environmental and land use resources. Ultimately, Alternative Route A and Alternative Route B were further considered as these two alternatives present two distinct routes with only a short common segment while maintaining the most feasible sections of the four routes under consideration. The two Alternative Routes were presented during the second open house to gather public feedback (**Map 5, Attachment A**).

4.4 Second Open House

A second open house was held on October 18, 2023 to present the Project's two Alternative Routes. The open house was held at the Waterford Elementary School Cafeteria at 19701 SR 339 in Waterford. Similar to the first public open house, the Siting Team set up stations and provided information on engineering and design of the structures, environmental and forestry concerns, Project need, real estate and ROW issues, and the overall siting process. The community was notified about the time and location of the meeting through the following means:

1. Letters notifying landowners and public officials of the public information meeting were mailed on September 22, 2022.
2. Meeting information was posted on the Project website (Section 3.6.2).
3. A public notice ran in the *Marietta Times* (Washington County) on September 29, 2022.

Printed maps were provided at the open house for the public to review and were used to record written comments concerning sensitive resources in their local community. Members of the Siting Team greeted meeting attendees, answered questions about the Project, and aided attendees in locating their property or other features of concern on aerial maps showing the two Alternative Routes. Participants were encouraged to document the location of their houses, places of business, property of concern, or other sensitive resources on the printed maps. After the public open house, handwritten comments were digitized and entered into a GIS database.

Comment sheets were distributed to meeting attendees. Attendees were asked to fill out the sheet, including contact information. The Siting Team reviewed the comment sheets, scanned, and stored them in the Project database as a record of meeting attendance and public comments. Thirty-four people attended the open house, and five comment cards were collected.

Comments from the second open house, and comments that the Company received via phone calls, U.S. mail, email, and Project website were cataloged and reviewed. Eight comment cards were received via U.S. mail or online and one email was received. The Siting Team reviewed all comments and, where applicable, incorporated the information when evaluating the Alternative Routes.

Based on landowner feedback gathered during the second open house, the Siting Team adjusted Alternative Route A near the intersection of SR 676 and Reed Drive. Landowners expressed opposition to Alternative Route A routing in front of their residence off SR 676 because the Corner-Wolf Creek 138 kV Transmission Line routes north-south to the west of their residence. Based on the landowner feedback and an engineering review, the Siting Team adjusted Alternative Route A near the intersection of SR 676 and Reed Drive to route south then west before connecting with the existing Corner-Wolf Creek 138 kV Transmission Line and double circuiting that line for two spans before connecting to the proposed West Watertown Substation. While minimizing colocation with existing transmission lines was preferred, landowner feedback in this area warranted the Company to make this concession. This adjustment removes a stream crossing and shifts the transmission line away from residences so that there is no longer a residence within 100 feet of centerline, only 3 residences within 250 feet of centerline, and 10 residences within 500 feet of centerline. This adjustment adds two turn angles to the route.

5.0 PROPOSED ROUTE IDENTIFICATION

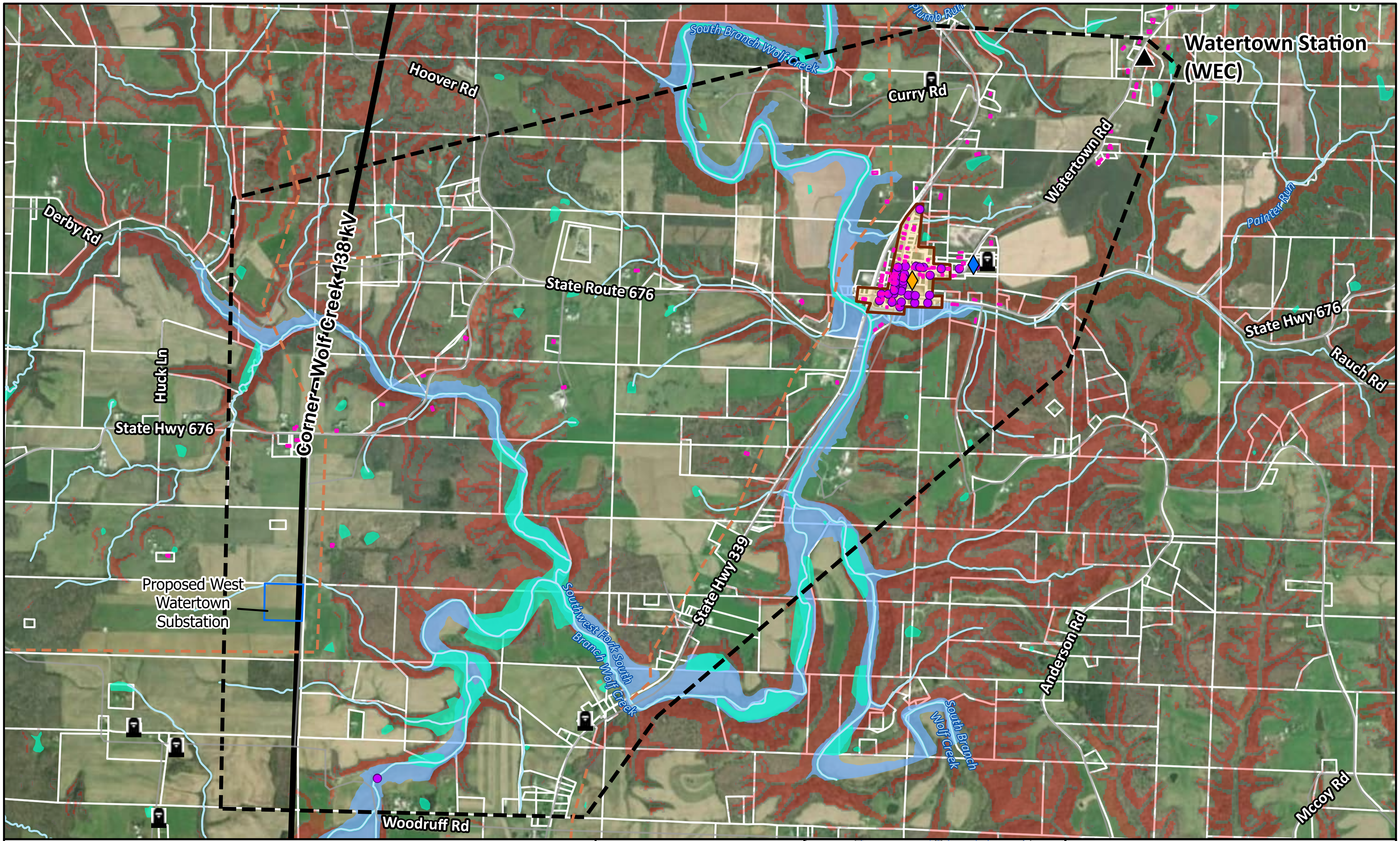
The goal in selecting a suitable route for the Project is to minimize overall impacts on natural and human environments while avoiding indirect routes, unreasonable costs, and special design requirements. However, in practice, it is not usually possible to optimally minimize all potential impacts. There are often inherent tradeoffs in potential impacts to every siting decision. For example, in heavily forested study areas, the route that avoids the most developed areas will likely require the greatest amount of forest clearing, while the route that has the least impact on vegetation and wildlife habitats often impacts more residences or farmlands. Thus, an underlying goal of a siting study is to reach a reasonable balance between minimizing potential impacts on one resource versus increasing the potential impacts on another.

Following an extensive data gathering, route development, comparative analysis process, and public input, the Siting Team identified Alternative Route A as the Proposed Route. As shown in **Map 6, Attachment A**, minor adjustments were made to Alternative Route A for the Proposed Route due to ROW discussions with landowners. The minor adjustments do not impact the comparison of the Alternative Routes or the proposed route selection. The following summarizes the rationale for the Siting Team selecting the Proposed Route as the route that best minimizes and balances the overall impacts of the Project. The decision is based on the accumulated siting decisions made throughout the process, the knowledge and experience of the Siting Team, comments from the public, and the comparative analysis of potential impacts presented in this Siting Study.

Alternative Route A routes north of the Town of Watertown before using open agricultural fields and parcel boundaries to route towards the proposed West Watertown Substation. Alternative Route B introduces greater impacts to residences and the Watertown Historic District than Alternative Route A because it is closer to the Town of Watertown. Alternative Route A crosses steeper topography than Alternative Route B, but impacts fewer ecological resources than Alternative Route B. Additionally, Alternative Route A is a shorter route, crosses fewer parcels, and fewer landowners within the ROW. By selecting the shorter route, construction and maintenance costs are reduced.

Collectively, the Siting Team believes the Proposed Route is (1) most consistent with the siting guidelines; (2) reasonably minimizes adverse impacts on area land uses and the natural and cultural environment; (3) minimizes special design requirements and unreasonable costs; and (4) can be constructed and operated in a safe, timely, and reliable manner.

Attachment A: Maps



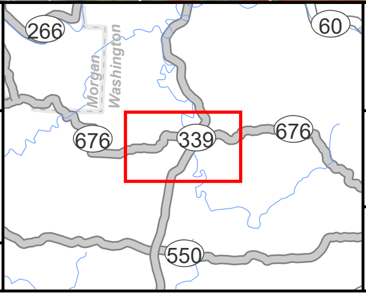
Legend

- Study Area
- ▲ Existing Substation
- Existing Transmission Line
- Pipeline
- ◆ NR Listings
- ◆ Determinations of Eligibility
- ● Historic Structures
- OGS Cemeteries
- West Watertown Historic District
- NHD Flowline
- Wetlands
- 100-Year Floodplain
- Residence
- Parcel Boundary
- Slope Greater than 20%

Base Map: Source: ESRI World Imagery

Coordinate System: State Plane Ohio South FIPS 3402
Datum: NAD 1983
Scale: 1:26,000

March 10, 2025

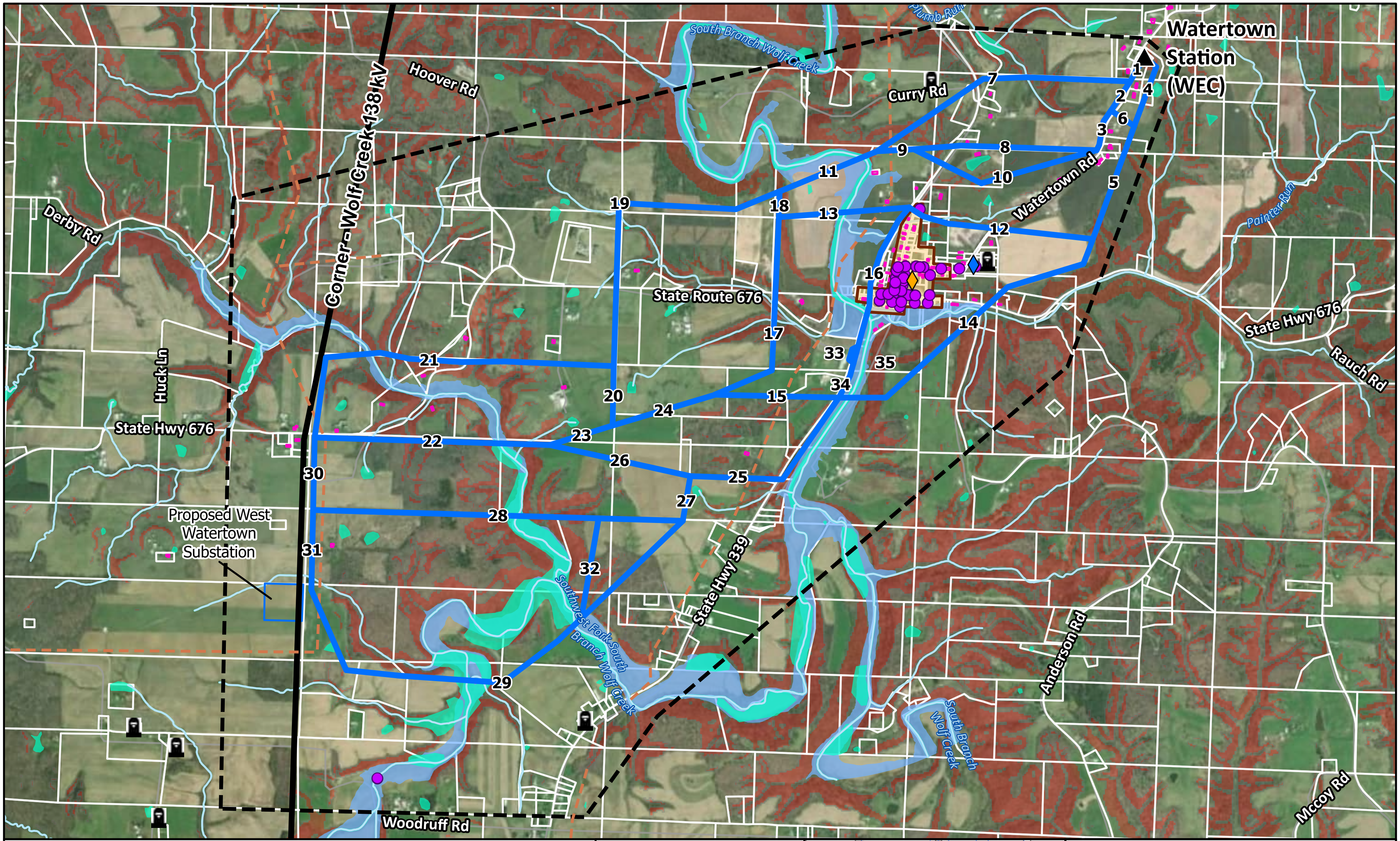


Map 1
Study Area

AEP OHIO
An AEP Company

West Watertown 138 kV Transmission Line Project
Washington County, OH

0 2,500 5,000
Feet



Legend

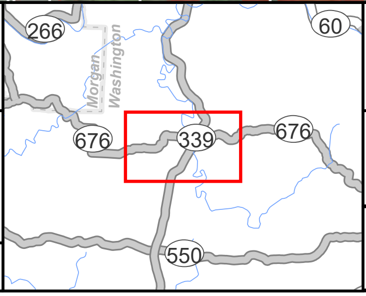
- ▬ Study Segments
- ▭ Study Area
- ▲ Existing Substation
- ▬ Existing Transmission Line
- ╌ Pipeline
- ◆ NR Listings
- ◆ Determinations of Eligibility
- ● Historic Structures
- OGS Cemeteries
- ▭ West Watertown Historic District
- ─ NHD Flowline
- 🟩 Wetlands
- 🟦 100-Year Floodplain
- ▭ Residence
- ▭ Parcel Boundary
- 🟥 Slope Greater than 20%

Base Map: Source:
ESRI World Imagery

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:24,000

N

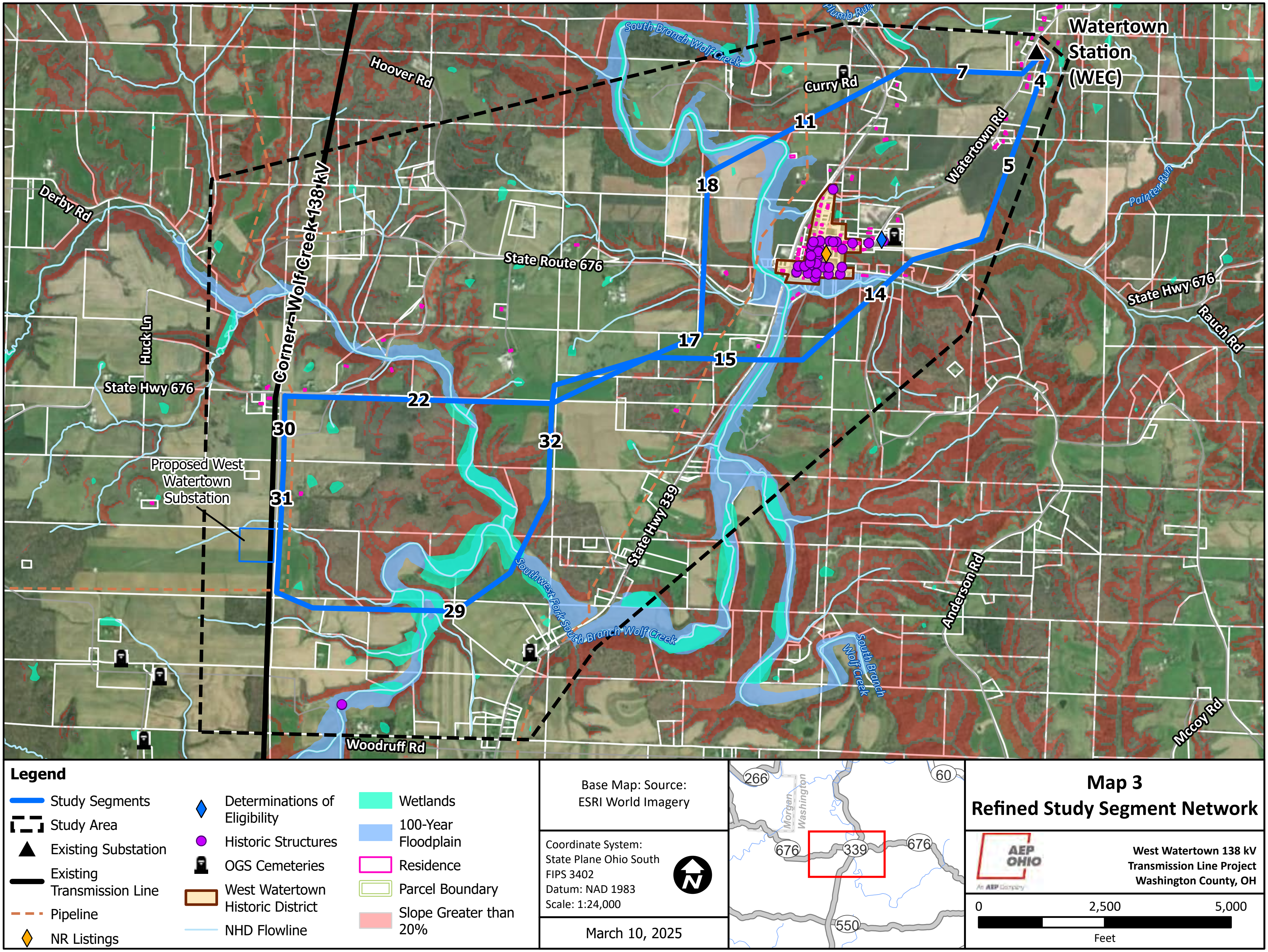
March 10, 2025



Map 2
Study Segment Network

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 2,500 5,000
Feet



Map 3
Refined Study Segment Network

Legend

- ▬ Study Segments
- ⌐ ¬ Study Area
- ▲ Existing Substation
- ▬ Existing Transmission Line
- - - Pipeline
- ◆ NR Listings
- ◆ Determinations of Eligibility
- ● Historic Structures
- OGS Cemeteries
- ▭ West Watertown Historic District
- NHD Flowline
- 🟩 Wetlands
- 🟦 100-Year Floodplain
- ▭ Residence
- ▭ Parcel Boundary
- 🟥 Slope Greater than 20%

Base Map: Source:
ESRI World Imagery

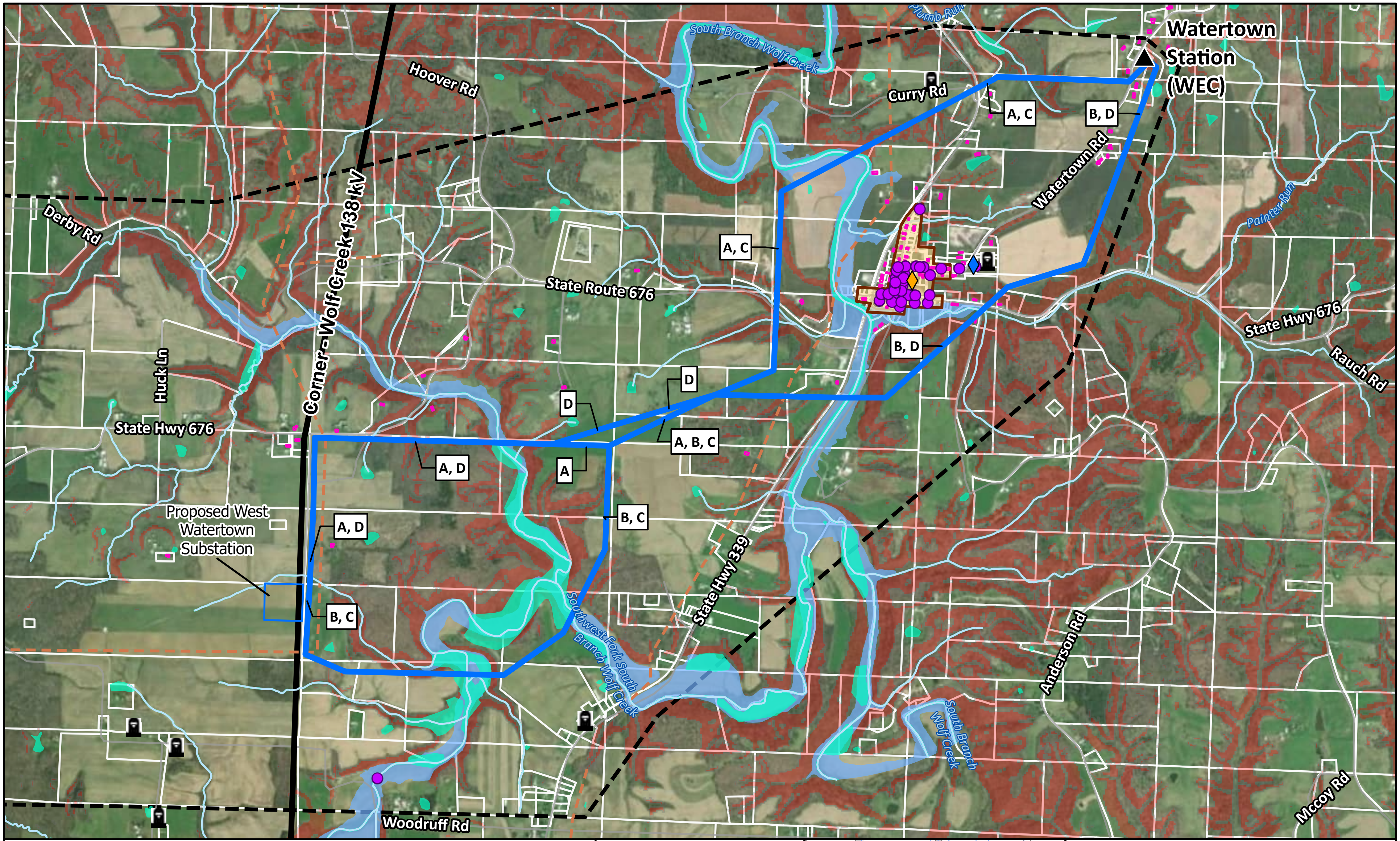
Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:24,000

March 10, 2025

AEP OHIO
An AEP Company

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 2,500 5,000
Feet



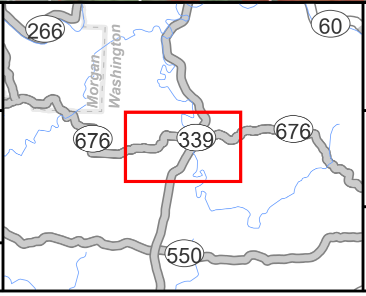
Legend

▬	Alternative Route
▬ ▬	Study Area
▲	Existing Substation
▬	Existing Transmission Line
- -	Pipeline
◆	NR Listings
◆	Determinations of Eligibility
●	Historic Structures
▮	OGS Cemeteries
▭	West Watertown Historic District
—	NHD Flowline
🟩	Wetlands
🟦	100-Year Floodplain
☐	Residence
☐	Parcel Boundary
🟥	Slope Greater than 20%

Base Map: Source:
ESRI World Imagery

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:24,000

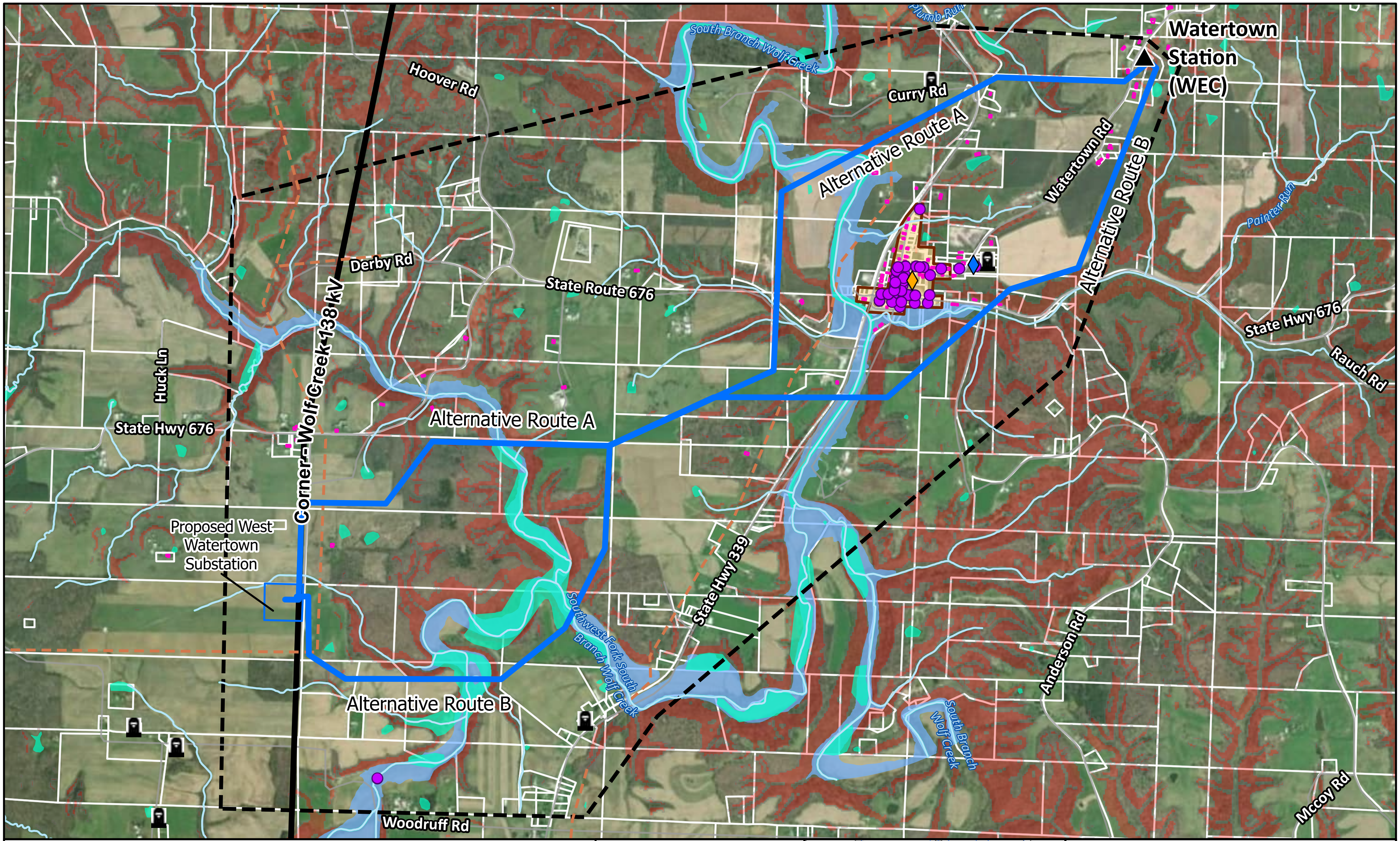
March 10, 2025



Map 4
Preliminary Routes

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 2,500 5,000
Feet



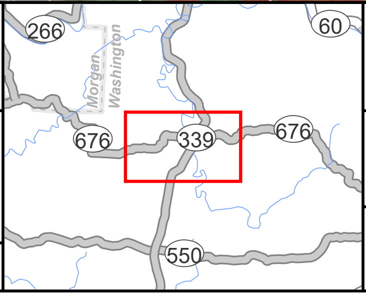
Legend

━ Alternative Route	◆ Determinations of Eligibility	🟦 100-Year Floodplain
▬ ▬ Study Area	● Historic Structures	🟩 Wetlands
▲ Existing Substation	OGS Cemeteries	▭ Residence
━ Existing Transmission Line	▭ West Watertown Historic District	▭ Parcel Boundary
- - Pipeline	― NHD Flowline	🟥 Slope Greater than 20%
◆ NR Listings		

Base Map: Source:
ESRI World Imagery

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:26,000

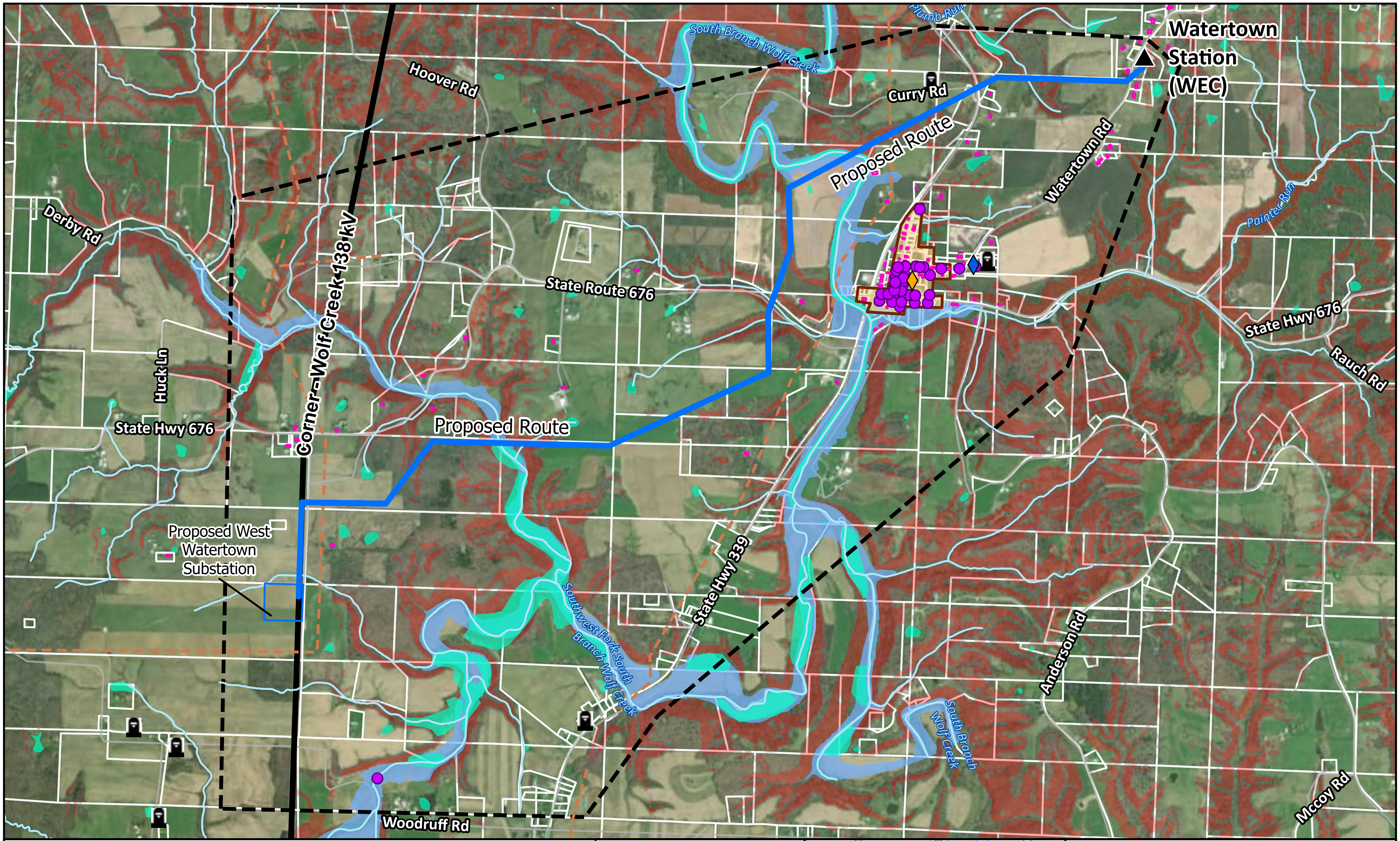
March 10, 2025



Map 5
Final Alternative Routes

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 2,500 5,000
Feet



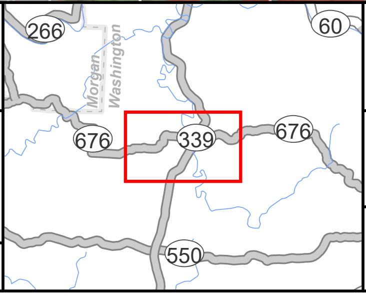
Legend

- ▬ Proposed Route
- ▬ ▬ Study Area
- ▬ Existing Transmission Line
- ‐ ‐ Pipeline
- ◆ NR Listings
- ◆ Determinations of Eligibility
- ● Historic Structures
- OGS Cemeteries
- ▭ West Watertown Historic District
- ― NHD Flowline
- 🟩 Wetlands
- 🟦 100-Year Floodplain
- ▭ Residence
- ▭ Parcel Boundary
- 🟥 Slope Greater than 20%

Base Map: Source:
ESRI World Imagery

Coordinate System:
State Plane Ohio South
FIPS 3402
Datum: NAD 1983
Scale: 1:26,000

March 10, 2025



Map 6
Proposed Route

AEP OHIO
An AEP Company

West Watertown 138 kV
Transmission Line Project
Washington County, OH

0 2,500 5,000
Feet

Attachment B: GIS Data Sources

Attachment B. GIS Data Sources

Siting Criteria	Source	Description
Land Use		
Number of parcels crossed by the ROW	Washington County, OH, 2023	Count of the number of parcels crossed by the ROW
Number of residences within the ROW and within 100 feet, 250 feet, and 500 feet of the route centerline	Digitized from Ohio Geographically Referenced Information Program (OGRIP), 2022 and field verified from points of public access	Count of the number of residences within the ROW and within 100 feet, 250 feet, and 500 feet of potential routes
Number of commercial buildings within the ROW	Digitized from Ohio Geographically Referenced Information Program (OGRIP), 2022 and field verified from points of public access	Count of the number of commercial buildings within the ROW
Land use acreage and distance crossed by the ROW	National Land Cover Database (NLCD), 2021	The NLCD 2021 (NLCD 2021) compiled by the Multi-Resolution Land Characteristics (MRLC) Consortium includes 15 classes of land cover from Landsat satellite imagery
Acres of conservation easements crossed	National Conservation Easement Database (NCED) 2021	Private conservation easements crossed by the routes from the NCED which is comprised of voluntarily reported conservation easement information from land trusts and public agencies
Acres of agricultural district land crossed	Washington County, OH, 2023	Protected land that is devoted exclusively to agricultural production or devoted to and qualified for compensation under a federal land retirement or conservation program that is at least 10 acres in size, or produces an average yearly gross income of at least $2,500 during a 3-year period
Number of archeological resources within the ROW and within 1 mile	Ohio State Historic Preservation Office, 2023	Previously identified archeological resources listed or eligible on the National Register of Historic Places (NRHP) acquired through the Ohio SHPO
Number of historic architectural resources within the ROW and within 1 mile	Ohio State Historic Preservation Office, 2023	Previously identified historic architectural resource sites and districts listed or eligible on the NRHP acquired through the Ohio SHPO

Attachment B. GIS Data Sources		
Siting Criteria	**Source**	**Description**
Institutional uses (schools, places of worship and cemeteries) within the ROW	U.S. Geological Survey's GNIS, 2023 Homeland Infrastructure Foundation-Level Data (HIFLD), 2021	This dataset includes the locations of cemeteries, churches, hospitals, parks, and schools.
Airfield and heliports within 1 miles of the route centerline	U.S. Geological Survey's GNIS, 2023 and the Federal Aviation Administration (FAA) database, 2023	Distance from airfields and heliports
Natural Environment		
Forest clearing within the ROW	Digitized based on Ohio Geographically Referenced Information Program (OGRIP), 2022	Acres of forest within the ROW
Number of National Hydrography Dataset (NHD) stream and waterbody crossings within the ROW	U.S. Geological Survey (USGS) 2023	The NHD is a comprehensive set of digital spatial data prepared by the USGS that contains information about surface water features such as lakes, ponds, streams, rivers, springs and wells
Acres of National Wetland Inventory (NWI) wetland crossings within the ROW	U.S. Fish and Wildlife Service (USFWS) 2023	The NWI produces information on the characteristics, extent, and status of the Nation's wetlands and deepwater habitats
Acres of 100-year floodplain crossing within the ROW	U.S. Federal Emergency and Management Agency (FEMA) 2023	Acres of 100-year floodplain within the ROW
Miles of public lands crossed by the route	The Protected Areas Database of the United States (PAD-US) 2022	Miles of federal, state and local lands crossed by the ROW
Threatened, endangered, rare or sensitive species occurrence within the Project vicinity	U.S. Fish and Wildlife Service (USFWS) 2023	Known occurrences; locations of potential habitat based on land use

Attachment B. GIS Data Sources		
Siting Criteria	**Source**	**Description**
Percent of hydric soils within the ROW	United States Department of Agriculture (USDA-NRCS), Natural Resources Conservation Service Soil Survey Geographic (SSURGO) Database 2023	Percent of soil associations crossed by the ROW characterized as hydric, predominantly hydric, partially hydric and non-hydric
Percent of prime farmland soils and soils of statewide importance within the ROW	USDA-NRCS SSURGO Database 2023	Percent of soil associations crossed by the ROW characterized as prime farmland or farmland of statewide importance
Technical		
Route length	Measured in GIS	Length of route in miles
Number and severity of angled structures	Developed in GIS	Anticipated number of angled structures less than 3 degrees, 3 to 45 degrees and more than 45 degrees based on preliminary design
Number of road crossings	Environmental Systems Research Institute (ESRI) road file 2023	Count of federal, state and local roadway crossings
Number of pipeline crossings	U.S. Department of Transportation National Pipeline Mapping System Need Penwell Citation	Number of known pipelines crossed by the transmission ROW
Number of transmission line crossings	AEP Ohio	Number of high voltage (100 kV or greater) transmission lines crossed by the ROW
Distance of steep slopes crossed	Derived from seamless Digital Elevation Models (DEMs) obtained from the U.S. Geologic Survey, 2023	Miles of slope greater than 20 percent crossed by the routes
Length of transmission line parallel	AEP Ohio	Miles of the route parallel to existing high voltage transmission lines
Length of pipeline parallel	U.S. Department of Transportation National Pipeline Mapping System	Miles of the route parallel to existing pipelines

Attachment B. GIS Data Sources		
Siting Criteria	**Source**	**Description**
Length of road parallel	ESRI road file 2023	Miles of the route parallel to existing roadways

Attachment C: Agency Correspondence

OHIO
HISTORY
CONNECTION

In reply, refer to
2023-WAS-59664

December 4, 2023

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

RE: West Watertown-Watertown 138kV Greenfield Project, Palmer and Watertown Townships, Washington County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received November 14, 2023 regarding the proposed West Watertown-Watertown 138kV Greenfield Project, Palmer and Watertown Townships, Washington County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4 & 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 Archaeological Investigations for the 14 km (8.67 mi) West Watertown-Watertown 138kV Greenfield Project in Palmer and Watertown Township, Washington County, Ohio* by Ryan J. Weller (Weller & Associates, Inc. 2023).

A literature review, visual inspection, surface collection, shovel probe and shovel test unit excavation was completed as part of the investigations. No previously identified archaeological sites are located within the project area and no new archaeological sites were identified during survey. Our office agrees no additional archaeological survey is needed.

The following comments pertain to the *History/Architecture Investigations for the 14 km (8.67 mi) West Watertown-Watertown 138kV Greenfield Project in Palmer and Watertown Township, Washington County, Ohio* by Scott McIntosh (Weller & Associates, Inc. 2023).

A literature review and field survey were conducted as part of the investigations. A total of twenty-five (25) extant resources, including one Determination of Eligibility (DOE) resource, were identified in the Area of Potential Effects (APE). Based on the information provided, the project as proposed will have no direct effect on the historic resource.

Based on the information provided, we agree the project as proposed will have no adverse effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted. If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrocks@ohiohistory.org or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1100606-1100607

OHIO
HISTORY
CONNECTION

In reply, refer to
2023-WAS-59664

August 21, 2024

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

RE: West Watertown-Watertown 138kV Greenfield Project, Palmer and Watertown Townships, Washington County, Ohio – Addendum 3

Dear Mr. Weller:

This letter is in response to the correspondence received July 23, 2024, regarding the proposed West Watertown-Watertown 138kV Greenfield Project, Palmer and Watertown Townships, Washington County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4 & 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 letter report titled *Addendum 3: Additional Investigations for a Reroute Associated with the West Watertown-Watertown 138kV Greenfield Project in Palmer and Watertown Townships, Washington County, Ohio* by Ryan J. Weller (Weller and Associates, Inc. 2024). Weller & Associates, Inc. has completed three previous surveys related to this transmission line corridor easement and two addendum projects. This addendum survey was conducted for an approximately 0.67-mile (3,538-foot) long reroute with a 60.96-meter (200-foot) wide corridor that was outside the boundaries of previous surveys. A literature review, visual inspection, surface collection, and shovel test unit excavations were completed as part of the investigations. Visual inspection noted areas of soil disturbance and steep slopes within the proposed addendum project area. No previously identified archaeological sites are located within this third addendum project area and no new archaeological sites were identified through this survey. Our office agrees no additional archaeological survey is needed. No additional historic structures were identified by the addendum project.

Based on the information provided, we continue to agree the project, as proposed, will have no adverse effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional archaeological resources are discovered during 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
Resource Protection and Review
State Historic Preservation Office

RPR Serial No: 1104114

Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR
MARY MERTZ, DIRECTOR

Office of Real Estate
Tara Paciorek, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6661
Fax: (614) 267-4764

December 5, 2023

Kristen Vonderwish
GAI Consultants
5399 Lauby Road, Suite 120
North Canton, Ohio 44720

Re: 23-1350_AEP- West Watertown-Watertown 138kV Transmission Line

Project: The proposed project involves the construction of a greenfield 138kV transmission line as part of the expansion of electric transmission infrastructure.

Location: The proposed project is located in Watertown and Palmer townships, Washington 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 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 species of bats

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the following listed mussel species:
Federally Endangered
fanshell (*Cyprogenia stegaria*)
sheepnose (*Plethobasus cyphyus*)
pink mucket (*Lampsilis orbiculata*)
snuffbox (*Epioblasma triquetra*)

State Endangered
butterfly (*Ellipsaria lineolata*)
Ohio pigtoe (*Pleurobema cordatum*)
elephant-ear (*Elliptio crassidens*)
pyramid pigtoe (*Pleurobema rubrum*)
long-solid (*Fusconaia maculata maculata*)
sharp-ridged pocketbook (*Lampsilis ovata*)
monkeyface (*Quadrula metanevra*)
washboard (*Megalonaias nervosa*)

State Threatened
Salamander Mussel (*Simpsonaias ambigua*)

This project must not have an impact on native mussels. This applies to both listed and non-listed species, as all species of mussel are protected in Ohio. Per the Ohio Mussel Survey Protocol (2022), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any

stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. If there is no in-water work proposed, impacts to mussels are not likely.

The project is within the range of the following listed fish species:
State Endangered
goldeye (*Hiodon alosoides*)
pugnose minnow (*Opsopoeodus emiliae*)
northern madtom (*Noturus stigmosus*)
western banded killifish (*Fundulus diaphanus menona*)
Ohio lamprey (*Ichthyomyzon bdellium*)

State Threatened
American eel (*Anguilla rostrata*)
mountain madtom (*Noturus eleutherus*)
blue sucker (*Cycleptus elongatus*)
paddlefish (*Polyodon spathula*)
channel darter (*Percina copelandi*)
river darter (*Percina shumardi*)

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

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. This long-lived, entirely aquatic salamander inhabits perennial streams with large flat rocks. In-water work in hellbender streams can reduce availability of large cover rocks and can destroy hellbender nests and/or kill adults and juveniles. The contribution of additional sediment to hellbender streams can smother large cover rocks and gravel/cobble substrate (used by juveniles), making them unsuitable for refuge and nesting. Projects that contribute to altered flow regimes (e.g., by increasing areas of impervious surfaces or modifying the floodplain) can also adversely affect hellbender habitat. Due to the location, this project is not likely to impact this species.

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

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

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

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

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

Mike Pettegrew
Environmental Services Administrator

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

November 7, 2023

Project Code: 2024-0006355

Dear Kristen L. Vonderwish:

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

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

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

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

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

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

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

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

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

Sincerely,

Scott Hicks

Scott Hicks
Acting Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Eileen Wyza, ODNR-DOW

Appendix D Form Easement

Line Name:
Line No.:
Easement No.:

EASEMENT AND RIGHT OF WAY

On this ______ day of __________________, 202__, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and the covenants hereinafter set forth, __[landowner name and marital status]__, whose address is _______________________________ ("Grantor"), whether one or more persons, hereby grants, sells, conveys, and warrants to Ohio Power Company an Ohio corporation, a unit of American Electric Power, whose principal business address is 1 Riverside Plaza, Columbus, Ohio 43215 ("AEP"), and its successors and affiliates, a permanent easement and right of way ("Easement") for a single electric transmission line, not to exceed 138 kV, and for internal communication purposes related to the supply of electricity (the "Transmission Line"), being, in, on, over, under, through and across the following described lands of Grantor, situated in the State of Ohio, County of ____________, and Township of ______________ and being a part of ___[abbreviated legal description]____ ("Grantor's Property").

Contingent provision: [Spouse of Grantor, if any] join herein for the purpose of releasing all dower rights in regard to the Easement.

Grantor claims title by ___[name of vesting instrument]___ dated ________ from ___[name of first grantor]___, recorded on ___________ at ___[record volume, page]___ in the ___________ County Recorder's Office.

Auditor/Key/Tax Number: ____[Tax Parcel 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, inspect, patrol, protect, repair, remove, replace, upgrade and relocate within the Easement Area, structures and appurtenant equipment necessary for the Transmission Line.

The right, in AEP's discretion, now or in the future, to cut down, trim or remove, and otherwise control, any and all trees, overhanging branches, vegetation or brush situated within the Easement Area and any temporary access roads or temporary workspaces identified on Exhibit "A" outside the Easement Area. Provided, however, that AEP shall not use herbicides or similar products for these purposes on any portions of the Grantor's Property maintained for residential or agricultural use. AEP shall also have the right to cut down, trim or remove trees situated on Grantor's Property which adjoin the Easement Area within the Tree Protection Zone when in the reasonable opinion of AEP those trees are dead, dying, diseased, leaning, or structurally defective and 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 Tree Protection Zone extends eighty feet on all sides of the Easement Area depicted in Exhibit A.

AEP shall also have the right of reasonable ingress and egress over, across and upon the Easement Area only, unless additional access routes are depicted in the attached Exhibit A. Provided, however, that in the event access over, across and upon the Easement Area – and access routes, if any, shown in Exhibit A – shall become blocked or otherwise rendered unsafe or hazardous for use, AEP may temporarily access the Easement Area from other points across Grantor's Property, so long as that access is both reasonable and limited to the duration of the interference or safety hazard. AEP shall return the access area to its preexisting condition or pay damages to Grantor.

AEP shall also have the right to use temporary workspaces and temporary access roads outside the Easement Area, if any are shown on Exhibit A, in connection with its initial construction of the Transmission Line. AEP may shift the location of such temporary workspaces, if any, up to twenty (20) feet in any direction, and also shift the location of such temporary access roads, if any, up to twenty (20) feet in any direction, as field conditions or other requirements dictate. Upon completion of the overall Transmission Line project, but in no event later than two (2) years following the start of construction on Grantor's Property, AEP shall remove its equipment from all such temporary workspaces and temporary access roads outside the Easement Area, and AEP's temporary rights outside of the Easement Area shall automatically cease, terminate and revert to Grantor. AEP shall return any such areas to their preexisting condition or pay damages to Grantor as soon as practicable.

THIS GRANT IS SUBJECT TO THE FOLLOWING CONDITIONS:

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 Grantor's Property encumbered by this Easement in any way not inconsistent with the rights herein granted. In no event, however, shall Grantor, its heirs, successors, affiliates 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 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.

Pursuant to R.C. 163.02, Grantor possesses a right of repurchase pursuant to R.C. 163.211 if AEP decides not to use Grantor's Property for the purpose stated in the appropriation petition and Grantor provides timely notice of a desire to repurchase.

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, affiliates, heirs, executors, and administrators.

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(s) for signature(s).

IN WITNESS WHEREOF, said Grantor hereunto set their hand(s) and seal(s) as of the last date set forth below.

GRANTOR

SIGNATURE BLOCK FOR A BUSINESS ENTITY / TRUST:

[name of entity/trust & kind of business association identified]

By:_____________________________________
Print name:_______________________________
Its Authorized Signer

State of Ohio §
§ SS:
County of ___________ §

This instrument was acknowledged before me on this _________ day of _____________, 202__ by __________________________, the _________[title]________________ of ___[name of entity/trust]___, a/an ___[state of incorporation and type of entity/trust]____, on behalf of ___[name of entity/trust]___.

____
Notary

SIGNATURE BLOCK FOR AN INDIVIDUAL:

____
____[Typed name of individual]____

State of Ohio §
§ SS:
County of __________ §

This instrument was acknowledged before me on this _______ day of _____________________, 202__ by ___[name of individual]____.

____
Notary

This instrument prepared by Marland Turner, 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 Smith's Mill Road, New Albany, OH 43054.

Appendix E Agency Coordination Letters

OHIO
HISTORY
CONNECTION

In reply, refer to
2023-WAS-59664

December 4, 2023

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

RE: West Watertown-Watertown 138kV Greenfield Project, Palmer and Watertown Townships, Washington County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received November 14, 2023 regarding the proposed West Watertown-Watertown 138kV Greenfield Project, Palmer and Watertown Townships, Washington County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4 & 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 Archaeological Investigations for the 14 km (8.67 mi) West Watertown-Watertown 138kV Greenfield Project in Palmer and Watertown Township, Washington County, Ohio* by Ryan J. Weller (Weller & Associates, Inc. 2023).

A literature review, visual inspection, surface collection, shovel probe and shovel test unit excavation was completed as part of the investigations. No previously identified archaeological sites are located within the project area and no new archaeological sites were identified during survey. Our office agrees no additional archaeological survey is needed.

The following comments pertain to the *History/Architecture Investigations for the 14 km (8.67 mi) West Watertown-Watertown 138kV Greenfield Project in Palmer and Watertown Township, Washington County, Ohio* by Scott McIntosh (Weller & Associates, Inc. 2023).

A literature review and field survey were conducted as part of the investigations. A total of twenty-five (25) extant resources, including one Determination of Eligibility (DOE) resource, were identified in the Area of Potential Effects (APE). Based on the information provided, the project as proposed will have no direct effect on the historic resource.

Based on the information provided, we agree the project as proposed will have no adverse effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted. If you have any questions, please contact me at (614) 298-2022, or by e-mail at khorrocks@ohiohistory.org or Joy Williams at jwilliams@ohiohistory.org. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager
Resource Protection and Review

RPR Serial No: 1100606-1100607

OHIO
HISTORY
CONNECTION

In reply, refer to
2023-WAS-59664

August 21, 2024

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

RE: West Watertown-Watertown 138kV Greenfield Project, Palmer and Watertown Townships, Washington County, Ohio – Addendum 3

Dear Mr. Weller:

This letter is in response to the correspondence received July 23, 2024, regarding the proposed West Watertown-Watertown 138kV Greenfield Project, Palmer and Watertown Townships, Washington County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4 & 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 letter report titled *Addendum 3: Additional Investigations for a Reroute Associated with the West Watertown-Watertown 138kV Greenfield Project in Palmer and Watertown Townships, Washington County, Ohio* by Ryan J. Weller (Weller and Associates, Inc. 2024). Weller & Associates, Inc. has completed three previous surveys related to this transmission line corridor easement and two addendum projects. This addendum survey was conducted for an approximately 0.67-mile (3,538-foot) long reroute with a 60.96-meter (200-foot) wide corridor that was outside the boundaries of previous surveys. A literature review, visual inspection, surface collection, and shovel test unit excavations were completed as part of the investigations. Visual inspection noted areas of soil disturbance and steep slopes within the proposed addendum project area. No previously identified archaeological sites are located within this third addendum project area and no new archaeological sites were identified through this survey. Our office agrees no additional archaeological survey is needed. No additional historic structures were identified by the addendum project.

Based on the information provided, we continue to agree the project, as proposed, will have no adverse effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional archaeological resources are discovered during 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

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

RPR Serial No: 1104114

Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR
MARY MERTZ, DIRECTOR

Office of Real Estate
Tara Paciorek, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6661
Fax: (614) 267-4764

December 5, 2023

Kristen Vonderwish
GAI Consultants
5399 Lauby Road, Suite 120
North Canton, Ohio 44720

Re: 23-1350_AEP- West Watertown-Watertown 138kV Transmission Line

Project: The proposed project involves the construction of a greenfield 138kV transmission line as part of the expansion of electric transmission infrastructure.

Location: The proposed project is located in Watertown and Palmer townships, Washington 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 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 species of bats

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the following listed mussel species:
Federally Endangered
fanshell (*Cyprogenia stegaria*)
sheepnose (*Plethobasus cyphyus*)
pink mucket (*Lampsilis orbiculata*)
snuffbox (*Epioblasma triquetra*)

State Endangered
butterfly (*Ellipsaria lineolata*)
Ohio pigtoe (*Pleurobema cordatum*)
elephant-ear (*Elliptio crassidens*)
pyramid pigtoe (*Pleurobema rubrum*)
long-solid (*Fusconaia maculata maculata*)
sharp-ridged pocketbook (*Lampsilis ovata*)
monkeyface (*Quadrula metanevra*)
washboard (*Megalonaias nervosa*)

State Threatened
Salamander Mussel (*Simpsonaias ambigua*)

This project must not have an impact on native mussels. This applies to both listed and non-listed species, as all species of mussel are protected in Ohio. Per the Ohio Mussel Survey Protocol (2022), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any

stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. If there is no in-water work proposed, impacts to mussels are not likely.

The project is within the range of the following listed fish species:
State Endangered
goldeye (*Hiodon alosoides*)
pugnose minnow (*Opsopoeodus emiliae*)
northern madtom (*Noturus stigmosus*)
western banded killifish (*Fundulus diaphanus menona*)
Ohio lamprey (*Ichthyomyzon bdellium*)

State Threatened
American eel (*Anguilla rostrata*)
mountain madtom (*Noturus eleutherus*)
blue sucker (*Cycleptus elongatus*)
paddlefish (*Polyodon spathula*)
channel darter (*Percina copelandi*)
river darter (*Percina shumardi*)

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

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. This long-lived, entirely aquatic salamander inhabits perennial streams with large flat rocks. In-water work in hellbender streams can reduce availability of large cover rocks and can destroy hellbender nests and/or kill adults and juveniles. The contribution of additional sediment to hellbender streams can smother large cover rocks and gravel/cobble substrate (used by juveniles), making them unsuitable for refuge and nesting. Projects that contribute to altered flow regimes (e.g., by increasing areas of impervious surfaces or modifying the floodplain) can also adversely affect hellbender habitat. Due to the location, this project is not likely to impact this species.

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

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

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

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

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

Mike Pettegrew
Environmental Services Administrator

United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

November 7, 2023

Project Code: 2024-0006355

Dear Kristen L. Vonderwish:

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

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

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

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

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

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

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

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

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

Sincerely,

Scott Hicks

Scott Hicks
Acting Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Eileen Wyza, ODNR-DOW

Appendix F Federal and State Listed Endangered Species

Agency	Status	Species Type	Listed Species	Scientific Name	Impacts Anticipated
USFWS	Federally endangered	Bat	Indiana bat	*Myotis sodalis*	No[1]
USFWS	Federally endangered	Bat	Northern long-eared bat	*Myotis septentrionalis*	No[1]
ODNR-DOW	Federally and State endangered	Bat	Indiana bat	*Myotis sodalis*	No[2]
ODNR-DOW	Federally and State endangered	Bat	northern long-eared bat	*Myotis septentrionalis*	No[2]
ODNR-DOW	State endangered	Bat	Little brown bat	*Myotis lucifugus*	No[2]
ODNR-DOW	State endangered	Bat	Tricolored bat	*Perimyotis subflavus*	No[2]
ODNR-DOW	Federally endangered	Mussel	Fanshell	*Cyprogenia stegaria*	No
ODNR-DOW	Federally endangered	Mussel	Sheepnose	*Plethobasus cyphyus*	No
ODNR-DOW	Federally endangered	Mussel	Pink mucket	*Lampsilis orbiculata*	No
ODNR-DOW	Federally endangered	Mussel	Snuffbox	*Epioblasma triquetra*);	No
ODNR-DOW	State endangered	Mussel	Butterfly	*Ellipsaria lineolata*	No
ODNR-DOW	State endangered	Mussel	Ohio pigtoe	*Pleurobema cordatum*),	No
ODNR-DOW	State endangered	Mussel	Elephant-ear	*Elliptio crassidens*	No
ODNR-DOW	State endangered	Mussel	Pyramid pigtoe	*Pleurobema rubrum*	No
ODNR-DOW	State endangered	Mussel	Long-solid	*Fusconaia maculata maculata*	No
ODNR-DOW	State endangered	Mussel	Sharp-ridged pocketbook	*Lampsilis ovata*	No
ODNR-DOW	State endangered	Mussel	Monkeyface	*Quadrula metanevra*	No
ODNR-DOW	State endangered	Mussel	Washboard	*Megalonaias nervosa*	No

ODNR-DOW	State threatened	Mussel	Salamander mussel	*Simpsonaias ambigua*	No
ODNR-DOW	State endangered	Fish	Goldeye	*Hiodon alosoides*	No
ODNR-DOW	State endangered	Fish	Pugnose minnow	*Opsopoeodus emiliae*	No
ODNR-DOW	State endangered	Fish	Northern madtom	*Noturus stigmosus*	No
ODNR-DOW	State endangered	Fish	Western banded killifish	*Fundulus diaphanus menona*	No
ODNR-DOW	State endangered	Fish	Ohio lamprey	*Ichthyomyzon bdellium*	No
ODNR-DOW	State threatened	Fish	American eel	*Anguilla rostrata*	No
ODNR-DOW	State threatened	Fish	Mountain madtom	*Noturus eleutherus*	No
ODNR-DOW	State threatened	Fish	Blue sucker	*Cycleptus elongatus*	No
ODNR-DOW	State threatened	Fish	Paddlefish	*Polyodon spathula*	No
ODNR-DOW	State threatened	Fish	Channel darter	*Percina copelandi*	No
ODNR-DOW	State threatened	Fish	River darter	*Percina shumardi*	No
ODNR-DOW	State endangered	Snake	Timber rattlesnake	*Crotalus horridus*	No
ODNR-DOW	State and federal species of concern	Salamander	Eastern hellbender	*Cryptobranchus alleganiensis alleganiensis*	No
ODNR-DOW	State endangered	Toad	Eastern spadefoot toad	*Scaphiopus holbrookii*	No

[1] If the Project contains trees greater than or equal to 3 inches diameter at breast height (dbh), USFWS recommends avoiding tree removal whenever possible. If no caves or abandoned mines are present and trees greater than or equal to 3 inches dbh cannot be avoided, USFWS recommends removal only occur between October 1 and March 31. The Company anticipates the need to clear trees for the Project, which will occur within the USFWS recommendation for seasonal tree clearing between October 1 to March 31.

[2] If trees must be cut, ODNR-DOW recommended cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices holes or cavities, as well as trees with dbh ≥ 20 inches. ODNR-DOW also recommended that a desktop habitat assessment be conducted, followed by a field assessment if needed, to determine if there are potential hibernaculum(a) present within 0.25 miles of the Project area. The Company's consultant did not find record of any abandoned mine openings within 0.25-

mile of the Project centerline. In addition, no potential bat hibernacula were observed within the Project area during the field surveys. However, potentially suitable summer foraging and roosting habitat was observed within the Project area. The Company anticipates the need for tree clearing, which will be conducted between October 1 and March 31.

Appendix G Wetland Delineation Report

Ecological Survey Report

AEP Ohio Transmission Company
West Watertown-Watertown 138-kV Transmission Line Project
Washington County, Ohio

GAI Project Number: R200062.71, Task 003

November 2023

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

Prepared by:
GAI Consultants, Inc.
Canton Office
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Senior Project Environmental Specialist

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Table of Contents

1.0 Introduction

GAI Consultants, Inc. (GAI), on behalf of American Electric Power Ohio Transmission Company (AEP), completed an ecological field review for the West Watertown-Watertown 138 kilovolt (kV) Transmission Line Project (Project) located in Washington County, Ohio (OH). The proposed Project is currently in the planning stages and AEP has identified two (2) line route options. Further evaluation is needed before selection of a final line route.

An ecological field review was conducted between August 29 and September 1, 2023, and September 4 through September 7, 2023. The Project study area consisted of a 300-foot-wide corridor from the existing Watertown Station to the proposed West Watertown Station, as shown on Figure 1.

The Project study area is located within the South West Branch Wolf Creek (United States Geological Survey [USGS] Hydrologic Unit Code [HUC] 12 #050400040901) watershed; and the Plumb Run-South Branch Wolf Creek USGS HUC 12 #050400040903) watershed.

This report details the results of the ecological field review regarding the existence of aquatic resources within the Project study area (Figure 2). Photographs of the identified wetlands and streams are included in Appendix A. The United States Army Corps of Engineers (USACE) Wetland Determination Data Forms are provided in Appendix B. Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms are provided in Appendix C and Ohio Environmental Protection Agency (OEPA) Primary Headwater Habitat Evaluation (HHEI) and Qualitative Habitat Evaluation Index (QHEI) Data Forms are provided in Appendix D. The United States Fish and Wildlife Service (USFWS) correspondence letter regarding rare, threatened, and endangered species is provided in Appendix E.

2.0 Methods

2.1 Wetlands

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

2.1.1 Preliminary Data Gathering

Published data was compiled and reviewed to identify previously mapped wetlands and areas that warrant further inspection during the fieldwork. The preliminary data gathering included a review of the following:

- USGS 7.5-minute topographic maps for Fleming (1961) and Watertown (1976), OH (Figure 1);
- USFWS, National Wetlands Inventory (NWI) data (USFWS, 2022) (Figure 2);
- Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (FEMA, 2022) (Figure 2); and,
- United States Department of Agriculture, Natural Resources Conservation Service (Soil Survey Staff-NRCS-USDA, 2022) soil maps (Figure 3).

USGS topographic maps were used to identify mapped streams and the overall terrain of the landscape and to identify locations potentially supporting wetlands, such as floodplains and depressions. NWI data provided the location of potential wetlands and are based on the analysis of high-altitude imagery in conjunction with collateral data sources and limited fieldwork. USDA-NRCS soil maps identified the location and extent of mapped hydric soils that have a greater probability of containing wetlands.

2.1.2 Onsite Inspection

The methodology described in the Wetland Delineation Manual and Regional Supplement identifies areas meeting the definition of a wetland by evaluating three parameters: hydrology, vegetation, and soil. During the onsite fieldwork, GAI staff, trained in the USACE method, traversed the Project study area on foot to determine if indicators of wetlands were present, including hydrology, hydrophytic vegetation, and/or hydric soils. When indicators of wetlands were observed, an observation point was established, and a Regional Supplement Wetland Determination Data Form was completed to determine if each of the three wetland indicators were present.

The presence of wetland hydrology was determined by examining the observation point for primary and secondary indicators of wetland hydrology. The presence of one primary indicator or the presence of two or more secondary indicators signified the presence of wetland hydrology.

Vegetation was characterized by four or five different strata (dependent upon the Wetland Determination Data Form used). This included trees (more than three inches in diameter at breast height [DBH]), saplings/shrubs (less than three inches DBH and more than 3.28-foot tall), herbaceous (and woody plants less than 3.28-foot tall), and woody vines. The sample plot size varied for each stratum. Trees and woody vines were typically sampled within a 30-foot radius. Saplings and shrubs were typically sampled within a 15-foot radius. Herbaceous species were typically sampled within a five-foot radius. In some instances, the wetland boundary served as the sample plot.

When evaluating an area for the presence of hydrophytes (plants that grow either partially or totally submerged in water), classification of the indicator status of vegetation was based on *The National Wetland Plant List: 2020 Update of Wetland Ratings*, version 3.5 (USACE, 2020). The list of possible indicator statuses for plants is as follows (USACE, 2012b):

- Obligate (OBL) – Occur almost always under natural conditions in wetlands.
- Facultative Wetland (FACW) – Usually occur in wetlands but occasionally found in non-wetlands.
- Facultative (FAC) – Equally likely to occur in wetlands and non-wetlands.
- Facultative Upland (FACU) – Usually occur in non-wetlands but occasionally found in wetlands.
- Upland (UPL) – Occur in wetlands in another region but occur almost always under natural conditions in non-wetlands in the region specified.

The presence of dominant hydrophytic vegetation was then determined by using a Rapid Test, Dominance Test, or Prevalence Index, and where appropriate Morphological Adaptations (USACE, 2012a).

To determine the presence of hydric soils, soil data was collected by digging a soil pit up to 20-inches-deep. The soil profile was studied and described, while possible hydric indicators were examined. Soil indicators described in the Wetlands Delineation Manual and Regional Supplement were used to determine the presence of hydric soils. The presence of these indicators signified hydric soil.

If the parameters for wetland hydrology, a dominance of hydrophytic vegetation, and hydric soils were identified at a single observation point, the area was determined to be a wetland. Once a wetland was identified, the boundary was delineated.

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

Wetlands were then classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979) as modified for the NWI Mapping Convention. This system classifies wetlands based on topographic position and vegetation type. Palustrine system wetlands were classified as either Palustrine Emergent (PEM), Palustrine Scrub-Shrub (PSS), Palustrine Forested (PFO), or Palustrine Unconsolidated Bottom (PUB) based on aerial coverage of the vegetation community across the extent of the wetland boundary within the study area (Cowardin et al., 1979). Classification was based on the uppermost layer of vegetation that possessed an aerial coverage of 30 percent or greater (Cowardin, et al., 1979).

2.2 Waterbodies

Generally, waterbodies are defined as environmental features that have defined beds and banks, an ordinary high-water mark (OHWM), and contain flowing or standing water for at least a portion of the year.

2.2.1 Preliminary Data Gathering

USGS 7.5-minute topographic mapping was examined for the presence of mapped waterbodies including perennial and intermittent streams. In addition, the topographic mapping was used to identify areas likely to contain unmapped waterbodies including ephemeral streams (USGS, 1961; 1976) (Figure 1).

The OEPA 401 Water Quality Certification for the 2021 Nationwide Permits Stream Eligibility Web Map (OEPA, 2023) was used to determine eligibility for coverage under the Clean Water Act (CWA) Section 401 Water Quality Certification (WQC) for the 2021 Nationwide Permits (NWPs). Furthermore, the map was used to identify ineligible areas that may require a CWA Section 401 individual permit from the OEPA should stream impacts occur within the Project study area (Figure 3).

2.2.2 Onsite Inspection

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

When a waterbody is identified, field measurements are collected. The measurements include top of bank width, top of bank depth, pool depth, water depth, and the lateral extent of the OHWM. A description of substrate composition is also recorded. The OHWM defines the lateral extent of non-tidal aquatic resources in the absence of adjacent wetlands. The federal regulatory definition of the OHWM, 33 CFR 328.3(c)(7), states the OHWM is “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.” The USACE *National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams* (USACE, 2022) was used to define the lateral extent of the OHWM. Waterbodies are then delineated using white flagging marked with the GAI stream code (e.g., S001). The tops-of-bank for streams wider than 10 feet are delineated, while the centerline of smaller streams is delineated. The locations of the flags are recorded using a sub-meter-capable hand-held GPS unit.

2.3 Rare, Threatened, and Endangered Species

GAI conducts a literature review of the potential for rare, threatened, and endangered (RTE) species in the vicinity of the Project study area. Potential habitat for RTE species is noted during the ecological field review.

2.3.1 Preliminary Data Gathering

A request for review of the OH Natural Heritage Database is submitted to the ODNR to determine if state-listed threatened or endangered species are known to or could occur within a one-mile radius of the Project study area. A request is also submitted to the USFWS Ohio Ecological Services Field Office to determine if federally listed threatened or endangered species are known to or could occur within the vicinity of the Project study area.

2.3.2 Onsite Inspection

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

3.0 Results

3.1 Wetlands

3.1.1 Preliminary Data Gathering

A desktop review of available USFWS NWI digital data for the Project indicated several NWI mapped wetlands within the Project Study Area (USFWS, 2022).

3.1.2 Onsite Inspection

Sixteen (16) PEM wetlands were identified and delineated within the Project study area. Information on the delineated wetlands can be found in Table 1 and photographs of the wetlands are included in Appendix A. To document site conditions, USACE Wetland Determination Data Forms were completed for each wetland and upland reference, and are included in Appendix B.

3.1.3 Regulatory Discussion

A USACE Jurisdictional Determination in accordance with current guidance and policy would determine which of the identified wetlands are regulated at the federal level. Wetlands that do not fall within the jurisdiction of the USACE could be regulated at the state level by the OEPA through their Isolated Wetland Program.

As regulated by Ohio Administrative Code (OAC) rules 3745-1-50 through 3745-1-54, wetlands were evaluated using the ORAM to determine the appropriate wetland category. A wetland with a score within a gray zone between categories was scored one of two ways. Either the wetland was assigned to the higher of the two categories or it was assessed using a non-rapid method to determine its quality (Mack, 2001). Wetlands were assigned a category based on their ORAM score and current OEPA guidance (Mack, 2000). The category assigned to a particular wetland determines the requirement, if any, for additional levels of protection administered by the OEPA. Wetland ORAM data forms are provided in Appendix C.

NWI Disposition Table

NWI Code	NWI Description	Figure Number, Sheet Number	Related Field Inventoried Resource (Wetland ID/Stream ID)	Comments
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Figure 2, Sheet 2	S001	UNT to Southwest Fork South Branch Wolf Creek
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Figure 2, Sheet 3	S021	UNT to Southwest Fork South Branch Wolf Creek
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	Figure 2, Sheet 3	S023	UNT to Southwest Fork South Branch Wolf Creek
PFO1/SS1A	Palustrine, Forested, Broad-leaved Deciduous, Scrub-shrub, Broad-leaved Deciduous, Temporary Flooded	Figure 2, Sheet 3	N/A	Soil Test Pit was taken with the NWI boundary, and it was determined that no wetland occurs within the study area boundary.
PFO1/SS1A	Palustrine, Forested, Broad-leaved Deciduous, Scrub-shrub, Broad-leaved Deciduous, Temporary Flooded	Figure 2, Sheet 3	N/A	Soil Test Pits were taken with the NWI boundary, and it was determined that no wetland occurs within the study area boundary.
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	Figure 2, Sheet 6	S010	Southwest Fork South Branch Wolf Creek
PFO1C	Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded	Figure 2, Sheet 6	N/A	Soil Test Pits were taken with the NWI boundary, and it was determined that no wetland occurs within the study area boundary.
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Figure 2, Sheet 7	S005	UNT to Southwest Fork South Branch Wolf Creek
R5UBH	Riverine, Unknown Perennial, Unconsolidated Bottom, Permanently Flooded	Figure 2, Sheet 7	S006	Southwest Fork South Branch Wolf Creek
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Figure 2, Sheet 9	S004	UNT to Southwest Fork South Branch Wolf Creek
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Figure 2, Sheet 12	S057	UNT to Painter Run
R2UBH	Riverine, Lower Perennial, Unconsolidated Perennial, Permanently Flooded	Figure 2, Sheet 12	S056	Painter Run

PUBGx	Palustrine, Unconsolidated Bottom, Intermittently Exposed, Excavated	Figure 2, Sheet 15	Pond 001	Maintained Residential Pond
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Figure 2, Sheet 16	S045	UNT to Plumb Run
R2UBH	Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded	Figure 2, Sheets 17 and 18	S040	South Branch Wolf Creek
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Figure 2, Sheet 20	S059	UNT to South Branch Wolf Creek
R4SBC	Riverine, Intermittent, Streambed, Seasonally Flooded	Figure 2, Sheet 20	S060	UNT to South Branch Wolf Creek

According to the USDA-NRCS soil mapping, a total of 36 soil map units are located within the Project study area (Figure 2). No soil map units are classified as hydric. Two soils are known to contain hydric inclusions (Mos1AF– Moshannon silt loam, 0 to 3 percent slopes, Melvin component; New1AF– Newark silt loam, 0 to 3 percent slopes, Melvin component).

3.2 Waterbodies

3.2.1 Preliminary Data Gathering

Desktop review of the available USGS topographic mapping revealed fifteen previously mapped stream segments located within the Project study area (Figure 1). Desktop review of OEPA’s Stream Eligibility Web Map revealed the Project is located within watersheds categorized as “Eligible” for automatic 401 WQC coverage (Figure 3).

3.2.2 Onsite Inspection

Sixty (60) stream segments were identified and mapped within the Project study area. Ten (10) stream segments were classified as having a perennial flow regime, twenty (20) were classified as intermittent, and thirty (30) were classified as ephemeral. Twenty-six stormwater erosional features (SWEs), ten ditches and sixteen drainages, were also identified within the Project study area. The SWEs did not appear to meet the criteria of a stream and have an OHWM. Information on the identified stream segments and their classifications can be found in Table 2, and photographs of the identified stream segments are included in Appendix A.

3.2.3 Regulatory Discussion

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

Streams are generally defined as environmental features that have defined beds and banks, an OHWM, and contain flowing or standing waters for at least a portion of the year (USACE, 2022). Streams were classified as perennial, intermittent, or ephemeral based upon presence of flow, estimated duration of flow, stream bed characteristics, and presence of aquatic biota.

As regulated by OAC Chapter 3745-1-24, streams were assessed according to OEPA guidance using either the HHEI for watersheds less than one square mile in size, or the

Qualitative Habitat Evaluation Index (QHEI) for watersheds between one and 20 square miles in size (OEPA, 2018; OEPA, 2006). Streams specifically identified in the OAC Water Quality Standards were not evaluated with either the HHEI or QHEI method. One of the identified streams was evaluated with the QHEI method. Stream HHEI and QHEI data forms are provided in Appendix D.

Whereby the USACE should not take jurisdiction over an ephemeral stream, the OEPA considers ephemeral streams as “waters of the state” (Ohio Revised Code, Section 6111), and thus regulated according to the Ohio’s 401 Water Quality Standards.

3.3 Rare, Threatened, and Endangered Species

3.3.1 Preliminary Data Gathering

A desktop review of ODNR, Division of Wildlife’s (DOW) Ohio’s Listed Species for Washington County identified 42 wildlife species as endangered, threatened, and species of concern (ODNR, 2023).

A review of the USFWS Environmental Conservation Online System Information for Planning and Consultation (IPaC) website identified four federally endangered, threatened, proposed endangered, or candidate species that may occur within the Project study area. The list of species includes the following:

- Indiana bat (*Myotis sodalis*) – Endangered;
- Northern long-eared bat (*Myotis septentrionalis*) – Endangered;
- Tricolored bat (*Perimyotis subflavus*) – Proposed Endangered;
- Monarch Butterfly (*Danaus plexippus*) – Candidate.

According to the Project’s IPaC report, there are no critical habitats within the Project area under the jurisdiction of the USFWS.

The ODNR and USFWS consultation letters were submitted on November 6, 2023. A response from the USFWS was received on November 7, 2023 (Project Code: 2024-0006355) and is included in Appendix E.

A response from the ODNR has not yet been received. An addendum to this report will be prepared to provide the ODNR response when it is received.

3.3.2 Onsite Inspection

Potential habitat for RTE species was preliminarily evaluated within the Project study area. In general, the habitat encountered within the study area consisted of mixed deciduous forest/woods, agricultural land, wetland (PEM), and rural residential properties.

The deciduous trees in the Project study area would be potential habitat for listed bat species and cutting the trees during the winter months would avoid impacts to the bats. Impacts to listed fish and mussel species are not anticipated because in-water work in perennials streams not planned.

A list of RTE species identified by the ODNR and USFWS is included in the table below.

ODNR and USFWS RTE Species and Habitat Review Results

Species	State Listed Status[1]	Federal Listed Status[1]	Typical Habitat	Habitat Observed	Impacts to Habitat/Species Anticipated?	Potential Impacts and Avoidance Dates
Amphibians						
Eastern spadefoot[2] *Scaphiopus holbrookii*	E	-	Sandy soils that are associated with river valleys; breeding habitats may include flooded agricultural fields or other water holding depressions	No	No; No know habitat is within project area	-
Eastern Hellbender[2] *Cryptobranchus alleganiensis*	E	-	Perennial streams with large flat rocks.	No	No; In-stream work is not proposed in perennial streams	-
Bats						
Indiana bat[3] *Myotis sodalis*	E	E	Trees >3" dbh, caves abandoned mines, wooded areas with loose tree bark or dead or dying trees.	Yes	No; Avoided with winter tree clearing	April 1 to September 30
Northern long-eared bat[3] *Myotis septentrionalis*	E	E	Roost in cavities or in crevices of both live trees and snags; Hibernate in caves and mines with constant temperatures, high humidity, and no air currents.	Yes	No; Avoided with winter tree clearing	April 1 to September 30
Tricolored bat[3] *Perimyotis subflavus*	E	Proposed E	Roost in cavities or in crevices of both live trees and snags; Hibernate in caves and mines with constant temperatures, high humidity, and no air currents.	Yes	No; Avoided with winter tree clearing	April 1 to September 30
Birds						
Cerulean Warbler[2] *Setophaga cerulea*	SC	-	Mature forested areas with large, tall trees of broad-leaved, deciduous species and relatively little undergrowth	No	No; habitat is not present	-
Fish						
American Eel[2] *Anguilla rostrata*	T	-	Occur most often in moderate or large rivers with continuous flow and moderately clear water	No	No; In-stream work is not proposed in perennial streams	-
Blue Sucker[2] *Cycleptus elongatus*	T	-	Inhabitant of deep swiftly flowing chutes or channels of large rivers; fast gravel bottomed chutes	No	No; In-stream work is not proposed in perennial streams	-
Tippecanoe Darter[2] *Etheostoma tippecanoe*	SC	-	Found in medium to larger streams and rivers in the Ohio River drainage in Ohio; found in riffles of moderate current with a substrate of gravel and small cobble sized rocks	Yes	No; In-stream work is not proposed in perennial streams	-
Ohio Lamprey[2] *Ichthyomyzon bdellium*	E	-	Freshwater species inhabiting warmwater habitats in the Ohio River Basin; prefer slow areas with soft substrates and high detrital content	No	No; In-stream work is not proposed in perennial streams	-

Species	State Listed Status[1]	Federal Listed Status[1]	Typical Habitat	Habitat Observed	Impacts to Habitat/Species Anticipated?	Potential Impacts and Avoidance Dates
Fish (continued)						
Mountain Madtom[2] *Noturus eleutherus*	T	-	Found in deep swift riffles of large rivers; usually found in and around cobbles and boulders	No	No; In-stream work is not proposed in perennial streams	-
Northern Madtom[2] Noturus stigmosus	E	-	Found in deep swift riffles of large rivers; usually found in and around cobbles and boulders	No	No; In-stream work is not proposed in perennial streams	-
Channel Darter[2] *Percina copelandi*	T	-	Found in large coarse sand or fine gravel bars in large rivers or along the shore of Lake Erie	No	No; In-stream work is not proposed in perennial streams	-
Longnose Dace[2] *Rhinichthys cataractae*	SC	-	Found in rocky streams with extremely steep gradients and very swift currents; large lakes with rocky wave swept shorelines	No	No; In-stream work is not proposed in perennial streams	-
Insects						
Green-faced Clubtail[2] *Gomphus viridifrons*	T	-	Clean, medium-sized, rocky forest streams and small rivers with gravel/sand substrates and lightly silted rocks	No	No; In-stream work is not proposed in streams	-
Uhler's Sundragon[2] *Helocordulia uhleri*	E	-	Clean, sandy or gravely forest streams	No	No; In-stream work is not proposed in streams	-
Blue corporal[2] *Ladona deplanata*	SC	-	Ponds and lakes to slower sections of creeks and ditches	Yes	No; In-stream work is not proposed in streams	-
Allegheny River Cruiser[2] *Macromia alleghaniensis*	E	-	Small to medium, slow flowing streams and rivers	Yes	No; In-stream work is not proposed in streams	-
Smoky Shadowdragon[2] *Neurocordulia molesta*	E	-	Found at clean large rivers and sometimes large streams	No	No; In-stream work is not proposed in streams	-
Stygian Shadowdragon[2] Neurocordulia yamaskanensis	E	-	Large rivers with areas of shallow water without aquatic vegetation	No	No; In-stream work is not proposed in streams	-
Mussels						
Butterfly[2] *Ellipsaria lineolata*	E	-	Large rivers with swift currents in sand or gravel substrates	No	No; In-stream work is not proposed in perennial streams	-
Elktoe[2] *Alasmidonta marginata*	SC	-	Rivers, creeks, and large lakes in stable sand and cobble	No	No; In-stream work is not proposed in perennial streams	-
Purple Wartyback[2] *Cyclonaias tuberculate*	SC	-	Inhabits larger rivers in areas with moderate current and gravel substrates	No	No; In-stream work is not proposed in perennial streams	-
Fanshell[2] *Cyprogenia stegaria*	E	E	A riverine species, occasionally in large creeks, in stable cobble and sand	No	No; In-stream work is not proposed in perennial streams	-
Elephant-ear[2] *Elliptio crassidens*	E	-	Primarily inhabits large rivers in mud, sand, or fine gravel	No	No; In-stream work is not proposed in perennial streams	-

Species	State Listed Status[1]	Federal Listed Status[1]	Typical Habitat	Habitat Observed	Impacts to Habitat/Species Anticipated?	Potential Impacts and Avoidance Dates
Mussels (continued)						
Long-solid[2] *Fusconaia subrotunda*	E	-	Shows a preference for sand and gravel in streams and small rivers; but also may be found in coarse gravel in larger rivers	No	No; In-stream work is not proposed in perennial streams	-
Pink Mucket[2] *Lampsilis abrupta*	E	E	Found inn mud and sand and in shallow riffles and shoals swept free of silt in major rivers and tributaries	No	No; In-stream work is not proposed in perennial streams	-
Pocketbook[2] *Lampsilis ovata*	E	-	Found in larger rivers with loose to firmly-packed sand, gravel-sand, or silty sand substrates	No	No; In-stream work is not proposed in perennial streams	-
Creek Heelsplitter[2] *Lasmigona compressa*	SC	-	Typically lives in creeks, small rivers, and the upstream parts of large rivers	No	No; In-stream work is not proposed in perennial streams	-
Black Sandshell[2] *Ligumia recta*	SC	-	Found in rivers, lakes, and large streams, usually in riffles or raceways with good current	No	No; In-stream work is not proposed in perennial streams	-
Washboard[2] *Megalonaias nervosa*	E	-	Rivers, occasionally straying into large creeks, in muddy sand and cobble	No	No; In-stream work is not proposed in perennial streams	-
Threehorn Wartyback[2] *Obliquaria reflexa*	SC	-	Rivers and large lakes, in sand and cobble	No	No; In-stream work is not proposed in perennial streams	-
Round Hickorynut[2] *Obovaria subrotunda*	T	-	Preference for sand and gravel in riffle, run, and pool habitats in streams and rivers	No	No; In-stream work is not proposed in perennial streams	-
Sheepnose[2] *Plethobasus cyphyus*	E	E	Rivers, creeks, and large lakes in stable sand and cobble	No	No; In-stream work is not proposed in perennial streams	-
Ohio Pigtoe[2] *Pleurobema cordatum*	E	-	Medium to large rivers in sand or gravel in areas with moderate flow	No	No; In-stream work is not proposed in perennial streams	-
Pyramid Pigtoe[2] *Pleurobema rubrum*	E	-	A river species, very rarely in large creeks, in stable sand and cobble	No	No; In-stream work is not proposed in perennial streams	-
Round Pigtoe[2] *Pleurobema sintoxia*	SC	-	Rivers, creeks, and large lakes, in stable sand and cobble	No	No; In-stream work is not proposed in perennial streams	-
Salamander Mussel[2] *Simpsonaias ambigua*	T	-	This is a species of rivers, creeks and large lakes, often under large flat rocks with its host	No	No; In-stream work is not proposed in perennial streams	-
Monkeyface[2] *Theliderma metanevra*	E	-	Rivers, in stable sand and cobble	No	No; In-stream work is not proposed in perennial streams	-
Fawnsfoot[2] *Truncilla donaciformis*	SC	-	Rivers, large creeks, and large lakes in muddy sand and cobble	No	No; In-stream work is not proposed in perennial streams	-

Species	State Listed Status[1]	Federal Listed Status[1]	Typical Habitat	Habitat Observed	Impacts to Habitat/Species Anticipated?	Potential Impacts and Avoidance Dates
Mussels (continued)						
Deertoe[2] *Truncilla truncata*	SC	-	Rivers, large creeks, and large lakes in muddy sand and cobble	No	No; In-stream work is not proposed in perennial streams	-
Pondhorn[2] *Uniomerus tetralasmus*	T	-	Muddy sand in rivers, creeks, and large creeks	No	No; In-stream work is not proposed in perennial streams	-
Mammal						
Smoky Shrew[2] *Sorex fumes*	SC	-	Leaf litter of birch and hemlock forests	No	No; habitat is not present	-
Reptiles						
Woodland Box Turtle[2] *Terrapene carolina carolina*	SC	-	Found in woodlands throughout Ohio	Yes	Yes	-

Notes:

[1] E = state endangered; T = state threatened; SC = state species of concern; FE = federal endangered; FT = federal threatened; FSC = federal species of concern. FC = federal candidate.

[2] ODNR Washington County State Listed Species

[3] USFWS comments included in their response, dated November 7, 2023.

4.0 Conclusions

Ecological field reviews were conducted within the Project study area August 29 through September 1 and September 4 through September 7.

Sixty streams (10 perennial, 20 intermittent, 30 ephemeral) were identified within the Project study area. Sixteen wetlands were identified within the Project study area. Summaries of the delineated aquatic features are provided in Tables 1 and 2, and a map of their locations is depicted on Figure 2. Photographs of the wetland and stream features are included in Appendix A. Wetland Determination Data Forms documenting the investigation are provided in Appendix B, with HHEI and ORAM Data Forms are provided in Appendix C, and HHEI and QHEI forms are provided in Appendix D.

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

5.0 References

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TABLES

Table 1. Wetlands Identified Within the Project Study Area

Wetland ID[1]	Location[2]		Habitat Type[3]	Delineated Area (acre)[4]	ORAM		Nearest Structure # (Existing)	Existing Structure # in Wetland	Proposed Structure # In Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude			Score[5]	Category[6]					Temporary Matting Area (acre)	Permanent Impact Area (acre)
W001-PEM-CAT1	39.454245	-81.670997	PEM	0.046	24.5	1	N/A	None	TBD	TBD	TBD	TBD
W002-PEM-CAT1	39.453886	-81.671556	PEM	0.206	16.5	1	N/A	None	TBD	TBD	TBD	TBD
W003-PEM-CAT1	39.453550	-81.671465	PEM	0.061	13.5	1	N/A	None	TBD	TBD	TBD	TBD
W004-PEM-CAT1	39.452336	-81.671669	PEM	0.182	20	1	N/A	None	TBD	TBD	TBD	TBD
W005-PEM-CATMOD2	39.459136	-81.661784	PEM	0.012	35	Modified 2	N/A	None	TBD	TBD	TBD	TBD
W006-PEM-CAT2	39.460014	-81.646937	PEM	0.010	32	2	N/A	None	TBD	TBD	TBD	TBD
W007-PEM-CAT1	39.462184	-81.641932	PEM	0.011	25	1	N/A	None	TBD	TBD	TBD	TBD
W008-PEM-CAT1	39.476357	-81.619515	PEM	0.269	25	1	N/A	None	TBD	TBD	TBD	TBD
W009-PEM-CAT1	39.476157	-81.622381	PEM	0.041	28.5	1	N/A	None	TBD	TBD	TBD	TBD
W010-PEM-CAT1	39.476172	-81.622756	PEM	0.010	28.5	1	N/A	None	TBD	TBD	TBD	TBD
W011-PEM-CAT1	39.476540	-81.627192	PEM	0.141	28.5	1	N/A	None	TBD	TBD	TBD	TBD
W012-PEM-CATMOD2	39.476464	-81.616847	PEM	0.006	35	Modified 2	N/A	None	TBD	TBD	TBD	TBD
W013-PEM-CAT1	39.473576	-81.618726	PEM	0.116	19	1	N/A	None	TBD	TBD	TBD	TBD
W014-PEM-CAT1	39.461001	-81.637754	PEM	0.140	17	1	N/A	None	TBD	TBD	TBD	TBD
W015-PEM-CAT1	39.460482	-81.639733	PEM	0.003	23	1	N/A	None	TBD	TBD	TBD	TBD
W016-PEM-CAT1	39.460569	-81.640119	PEM	0.004	21	1	N/A	None	TBD	TBD	TBD	TBD
Pond 001	39.475766	-81.616858	N/A	0.120	N/A	N/A	N/A	None	TBD	TBD	TBD	TBD
TOTAL:				**1.379**						**TOTAL:**	**TBD**	**TBD**

Notes:

[1] GAI map designation.

[2] North American Datum, 1983.

[3] PEM - Palustrine Emergent, PSS – Palustrine Scrub-Shrub, PUB - Palustrine Unconsolidated Bottom, PFO - Palustrine Forested.

[4] Total acreage of wetland located within the Project study area.

[5] Interim scoring breakpoints for wetland regulatory categories for ORAM v 5.0 Score: Category 1 score of 0 - 29.9; Category 1 or 2 gray zone score of 30 - 34.9; Category modified 2 score of 35 - 44.9; Category 2 score of 45 - 59.9; Category 2 or 3 score of 60 - 64.9; Category 3 score of 65 - 100. OEPA Wetland Ecology Unit, Division of Surface Water. *ORAM v. 5.0 Qualitative Score Calibration.* Dated August 15, 2000. https://epa.ohio.gov/static/portals/35/401/oram50sc_s.pdf.

[6] OAC Rule 3745-1-54(C)(1) defines the wetland categories. Category 1 wetlands are defined as wetlands which "…support minimal wildlife habitat, and minimal hydrological and recreation functions," and as wetlands which have "…hydrologic isolation, low species diversity, a predominance of non-native species, no significant habitat or wildlife use, and limited potential to achieve beneficial wetland functions." Category 2 wetlands are defined as wetlands which "...support moderate habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 3 wetlands are defined as wetlands which "…support superior habitat, or hydrological or recreational functions," and as wetlands which have "…high levels of diversity, a high proportion of native species, or high functional values."

Table 2. Waterbodies Identified Within the Project Study Area

Stream ID[1]	Location[2]		Stream Type	Stream Name	Delineated Length (feet)[3]	Bankfull Width (feet)[4]	OHWM Width (feet)	Field Evaluation			Ohio EPA 401 Eligibility[8]	Stream Crossing?	Proposed Impacts	
	Latitude	Longitude						Method	Score[5, 6]	Category[5] / Rating[6] / OAC Designation[7]			Fill Type	Length (LF)
S001	39.459036	-81.667137	Perennial	UNT to Southwest Fork South Branch Wolf Creek	384	9	8	HHEI	63	Class II PHW	Eligible	TBD	TBD	TBD
S002	39.459158	-81.667213	Intermittent	UNT to Southwest Fork South Branch Wolf Creek	103	3	2	HHEI	27	Modified Class I PHW	Eligible	TBD	TBD	TBD
S003	39.458764	-81.666819	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	206	2	2	HHEI	13	Class I PHW	Eligible	TBD	TBD	TBD
S004	39.452231	-81.671118	Perennial	UNT to Southwest Fork South Branch Wolf Creek	132	7	6	HHEI	63	Modified Class II PHW	Eligible	TBD	TBD	TBD
S005	39.447633	-81.664068	Perennial	UNT to Southwest Fork South Branch Wolf Creek	537	15	10	HHEI	63	Class II PHW	Eligible	TBD	TBD	TBD
S006	39.447351	-81.661080	Perennial	Southwest Fork South Branch Wolf Creek	335	50	45	Chapter 3745-1-24	-	EWH	Eligible	TBD	TBD	TBD
S007	39.446954	-81.659284	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	237	3	3	HHEI	22	Modified Class I PHW	Eligible	TBD	TBD	TBD
S008	39.449828	-81.654997	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	438	4	3	HHEI	33	Modified Class II PHW	Eligible	TBD	TBD	TBD
S009	39.449620	-81.655293	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	69	3	2	HHEI	13	Modified Class II PHW	Eligible	TBD	TBD	TBD
S010	39.450076	-81.654242	Perennial	Southwest Fork South Branch Wolf Creek	426	50	45	Chapter 3745-1-24	-	EWH	Eligible	TBD	TBD	TBD
S011	39.449837	-81.654408	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	88	3	2	HHEI	17	Class I PHW	Eligible	TBD	TBD	TBD
S012	39.451004	-81.653262	Intermittent	UNT to Southwest Fork South Branch Wolf Creek	1033	4	3	HHEI	35	Modified Class II PHW	Eligible	TBD	TBD	TBD
S013	39.451932	-81.652864	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	112	2	2	HHEI	14	Class I PHW	Eligible	TBD	TBD	TBD
S014	39.452675	-81.652338	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	381	4	2	HHEI	24	Class I PHW	Eligible	TBD	TBD	TBD
S015	39.456969	-81.652304	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	458	4	3	HHEI	33	Class II PHW	Eligible	TBD	TBD	TBD
S016	39.456439	-81.651979	Intermittent	UNT to Southwest Fork South Branch Wolf Creek	525	4	3	HHEI	47	Class II PHW	Eligible	TBD	TBD	TBD
S017	39.456047	-81.651857	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	243	4	3	HHEI	33	Class II PHW	Eligible	TBD	TBD	TBD
S018	39.455710	-81.652357	Intermittent	UNT to Southwest Fork South Branch Wolf Creek	138	5	4	HHEI	43	Class II PHW	Eligible	TBD	TBD	TBD
S019	39.453637	-81.651858	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	154	5	3	HHEI	37	Class II PHW	Eligible	TBD	TBD	TBD
S020	39.458989	-81.655648	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	90	4	2	HHEI	23	Modified Class I PHW	Eligible	TBD	TBD	TBD
S021	39.458782	-81.657003	Intermittent	UNT to Southwest Fork South Branch Wolf Creek	579	7	5	HHEI	64	Modified Class II PHW	Eligible	TBD	TBD	TBD
S022	39.458741	-81.656558	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	83	3	2	HHEI	13	Modified Class I PHW	Eligible	TBD	TBD	TBD
S023	39.458713	-81.658765	Perennial	UNT to Southwest Fork South Branch Wolf Creek	336	30	25	QHEI	47	Fair	Eligible	TBD	TBD	TBD

Stream ID[1]	Location[2]		Stream Type	Stream Name	Delineated Length (feet)[3]	Bankfull Width (feet)[4]	OHWM Width (feet)	Field Evaluation			Ohio EPA 401 Eligibility[8]	Stream Crossing?	Proposed Impacts	
	Latitude	Longitude						Method	Score[5, 6]	Category[5] / Rating[6] / OAC Designation[7]			Fill Type	Length (LF)
S024	39.458956	-81.664440	Intermittent	UNT to Southwest Fork South Branch Wolf Creek	389	9	8	HHEI	53	Class II PHW	Eligible	TBD	TBD	TBD
S025	39.458638	-81.663971	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	265	4	3	HHEI	34	Class II PHW	Eligible	TBD	TBD	TBD
S026	39.459109	-81.662073	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	125	2	2	HHEI	14	Class I PHW	Eligible	TBD	TBD	TBD
S027	39.458760	-81.659625	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	219	3	2	HHEI	13	Class I PHW	Eligible	TBD	TBD	TBD
S028	39.460006	-81.646929	Intermittent	UNT to South Branch Wolf Creek	127	4	3	HHEI	24	Modified Class I PHW	Eligible	TBD	TBD	TBD
S029	39.460048	-81.646744	Ephemeral	UNT to South Branch Wolf Creek	100	3	2	HHEI	13	Modified Class I PHW	Eligible	TBD	TBD	TBD
S030	39.460214	-81.646464	Ephemeral	UNT to South Branch Wolf Creek	195	4	2	HHEI	23	Modified Class I PHW	Eligible	TBD	TBD	TBD
S031	39.460292	-81.648083	Ephemeral	UNT to South Branch Wolf Creek	85	3	2	HHEI	13	Modified Class I PHW	Eligible	TBD	TBD	TBD
S032	39.460605	-81.644657	Ephemeral	UNT to South Branch Wolf Creek	50	2	2	HHEI	13	Modified Class I PHW	Eligible	TBD	TBD	TBD
S033	39.462221	-81.641135	Intermittent	UNT to South Branch Wolf Creek	272	4	3	HHEI	24	Modified Class I PHW	Eligible	TBD	TBD	TBD
S034	39.464145	-81.641307	Intermittent	UNT to South Branch Wolf Creek	368	7	5	HHEI	38	Class II PHW	Eligible	TBD	TBD	TBD
S035	39.474771	-81.630487	Ephemeral	UNT to South Branch Wolf Creek	252	5	4	HHEI	29	Class I PHW	Eligible	TBD	TBD	TBD
S036	39.474770	-81.631116	Ephemeral	UNT to South Branch Wolf Creek	306	5	4	HHEI	38	Class II PHW	Eligible	TBD	TBD	TBD
S037	39.474501	-81.632374	Ephemeral	UNT to South Branch Wolf Creek	42	5	3	HHEI	28	Class I PHW	Eligible	TBD	TBD	TBD
S038	39.474248	-81.632440	Ephemeral	UNT to South Branch Wolf Creek	314	5.5	3.5	HHEI	29	Class I PHW	Eligible	TBD	TBD	TBD
S039	39.473115	-81.636605	Ephemeral	UNT to South Branch Wolf Creek	126	5	4	HHEI	29	Class I PHW	Eligible	TBD	TBD	TBD
S040	39.472848	-81.636112	Perennial	South Branch Wolf Creek	453	50	45	Chapter 3745-1-24	-	EWH	Eligible	TBD	TBD	TBD
S041	39.471189	-81.640784	Ephemeral	UNT to South Branch Wolf Creek	311	4	3	HHEI	33	Class II PHW	Eligible	TBD	TBD	TBD
S042	39.466380	-81.641274	Intermittent	UNT to South Branch Wolf Creek	700	5	2.5	HHEI	34	Modified Class II PHW	Eligible	TBD	TBD	TBD
S043	39.476165	-81.622783	Intermittent	UNT to Plumb Run	316	3	2	HHEI	22	Class I PHW	Eligible	TBD	TBD	TBD
S044	39.476371	-81.623295	Intermittent	UNT to Plumb Run	388	7	6	HHEI	38	Class II PHW	Eligible	TBD	TBD	TBD
S045	39.476471	-81.625122	Intermittent	UNT to Plumb Run	358	7.5	5.5	HHEI	43	Class II PHW	Eligible	TBD	TBD	TBD
S046	39.476417	-81.625266	Ephemeral	UNT to Plumb Run	112	3	2	HHEI	23	Modified Class I PHW	Eligible	TBD	TBD	TBD
S047	39.476812	-81.626404	Ephemeral	UNT to Plumb Run	126	3	2	HHEI	14	Class I PHW	Eligible	TBD	TBD	TBD

Stream ID[1]	Location[2]		Stream Type	Stream Name	Delineated Length (feet)[3]	Bankfull Width (feet)[4]	OHWM Width (feet)	Field Evaluation			Ohio EPA 401 Eligibility[8]	Stream Crossing?	Proposed Impacts	
	Latitude	Longitude						Method	Score[5, 6]	Category[5] / Rating[6] / OAC Designation[7]			Fill Type	Length (LF)
S048	39.476604	-81.617130	Intermittent	UNT to Painter Run	395	3	2	HHEI	14	Class II PHW	Eligible	TBD	TBD	TBD
S049	39.472915	-81.618819	Intermittent	UNT to Painter Run	396	4	2	HHEI	45	Class II PHW	Eligible	TBD	TBD	TBD
S050	39.472529	-81.618677	Ephemeral	UNT to Painter Run	135	4	2	HHEI	30	Class II PHW	Eligible	TBD	TBD	TBD
S051	39.469565	-81.620718	Intermittent	UNT to Painter Run	745	6	4	HHEI	60	Class II PHW	Eligible	TBD	TBD	TBD
S052	39.469153	-81.620365	Ephemeral	UNT to Painter Run	162	3	2	HHEI	14	Class I PHW	Eligible	TBD	TBD	TBD
S053	39.467788	-81.620846	Ephemeral	UNT to Painter Run	80	4	2	HHEI	14	Class I PHW	Eligible	TBD	TBD	TBD
S054	39.466476	-81.623577	Intermittent	UNT to Painter Run	78	6	4	HHEI	42	Class II PHW	Eligible	TBD	TBD	TBD
S055	39.465965	-81.627464	Intermittent	UNT to Painter Run	654	4	2	HHEI	39	Modified Class II PHW	Eligible	TBD	TBD	TBD
S056	39.465171	-81.627884	Perennial	Painter Run	359	15	6	Chapter 3745-1-24	-	EWH	Eligible	TBD	TBD	TBD
S057	39.464762	-81.628108	Intermittent	UNT to Painter Run	300	4	2	HHEI	39	Class II PHW	Eligible	TBD	TBD	TBD
S058	39.460909	-81.639010	Intermittent	UNT to South Branch Wolf Creek	941	2	1	HHEI	35	Modified Class II PHW	Eligible	TBD	TBD	TBD
S059	39.464564	-81.641173	Perennial	UNT to South Branch Wolf Creek	316	15	3	HHEI	83	Class III PHW	Eligible	TBD	TBD	TBD
S060	39.465410	-81.641104	Perennial	UNT to South Branch Wolf Creek	421	15	6	HHEI	84	Class III PHW	Eligible	TBD	TBD	TBD
				TOTAL:	**18,068**								**TOTAL:**	**TBD**

Notes:

[1] GAI map designation.
[2] North American Datum, 1983.
[3] Total stream length (in feet) located within the Project study area.
[4] Width in feet from tops of stream bank

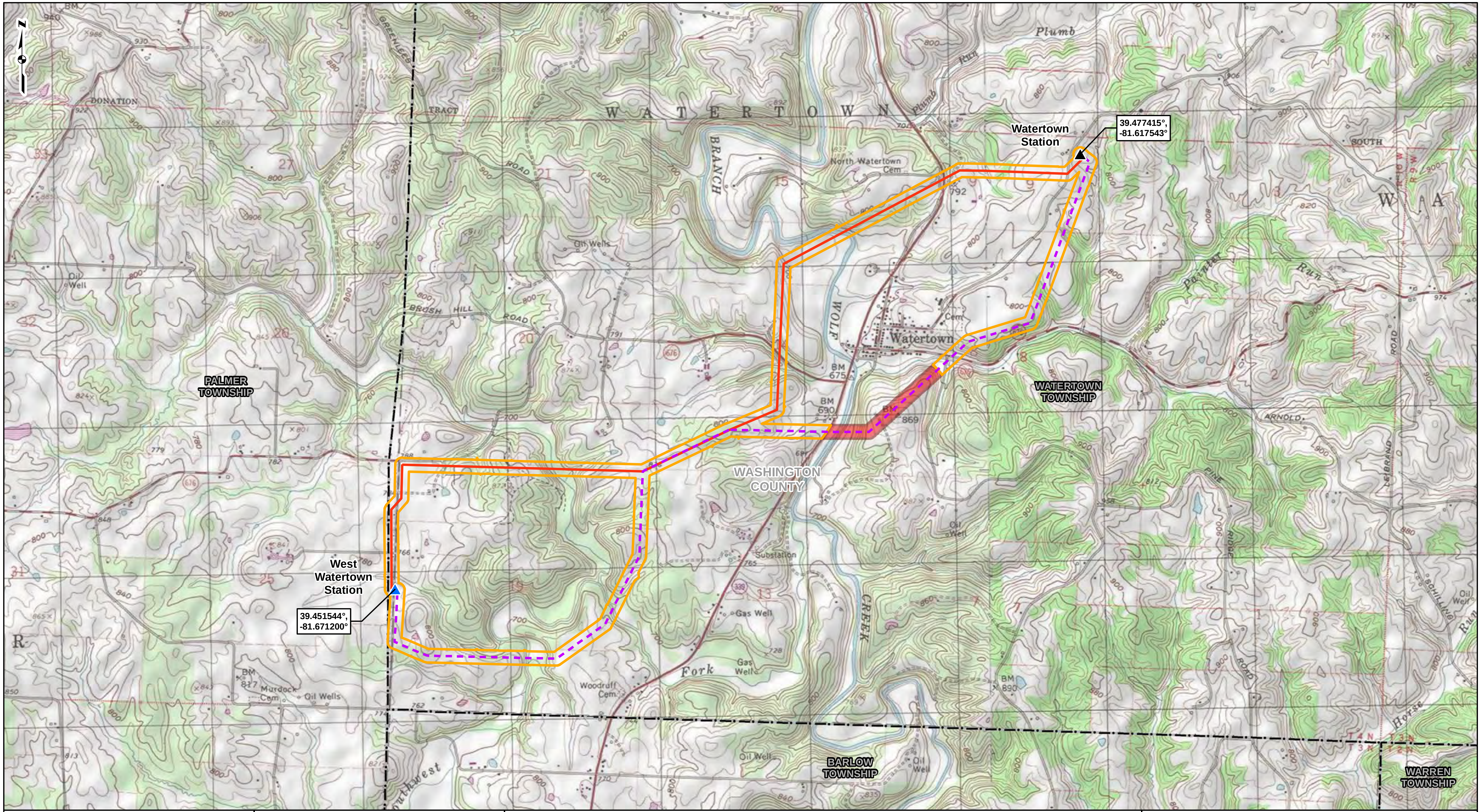
[5] Categorization for OEPA Headwater Habitat Evaluation Index (HHEI) Primary Headwater Habitats (PHWH). HHEI Score and comparison to HHEI Flow Chart places streams into six PHWH categories: Rheocrene, Class I (natural channel), Modified Class I (modified channel), Class II (natural channel), Modified Class II (modified channel), Class III. For streams with a Rheocrene designation a biological survey using Level 3 Assessment methods for amphibians and benthic macroinvertebrates was not completed.

[6] Narrative rating for headwater streams using the OEPA Qualitative Habitat Evaluation Index (QHEI). Excellent = ≥70; Good = 55 - 60; Fair = 43 - 54; Poor = 30 - 42; Very Poor = <30.

[7] As defined by Ohio Administrative Code (OAC) Chapter 3745-1-24 Water Quality Standards for Muskingum River tributaries effective May 22, 2017, Water use designations and statewide criteria are defined in OAC 3745-1-07. WWH – Warmwater Habitat. https://epa.ohio.gov/static/Portals/35/rules/01-all.pdf?ver=Eaa7s8hOK8IRHn1XA8nXDA%3d%3d.

[8] As defined by the Clean Water Act Section 401 Water Quality Certification (WQC) conditions for stream eligibility coverage under the 2021 NWP program. Streams located in Possibly Eligible areas are eligible for coverage if the pH is <6.5 or stream flow is ephemeral. Streams located in Possibly Eligible areas are also eligible for coverage if the HHEI score is <50, or if the HHEI score is between 50-69 and substrate composition is <10% coarse types (includes cumulative percentage of bedrock, boulders, boulder slabs, and cobble). Streams located in Possibly Eligible areas are also eligible for coverage if the QHEI score is <50 and the drainage area is <3.0 square miles or the score is <55 and the drainage area is ≥3.0 square miles.

FIGURES



PROJECT LOCATION

WASHINGTON COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: WATERTOWN (1976) AND FLEMING (1961), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2023.

LEGEND

- ▲ Existing Station
- ▲ Proposed Station
- ━ Proposed Preferred Transmission
- - - Proposed Alternate Transmission
- ▭ Study Area
- 🟥 No Access (Not Studied)
- ▭ Township Boundary

0 1,000 2,000 4,000 Feet

FIGURE 1
PROJECT LOCATION MAP

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP

DATE: 11/9/2023
APPROVED: KLV

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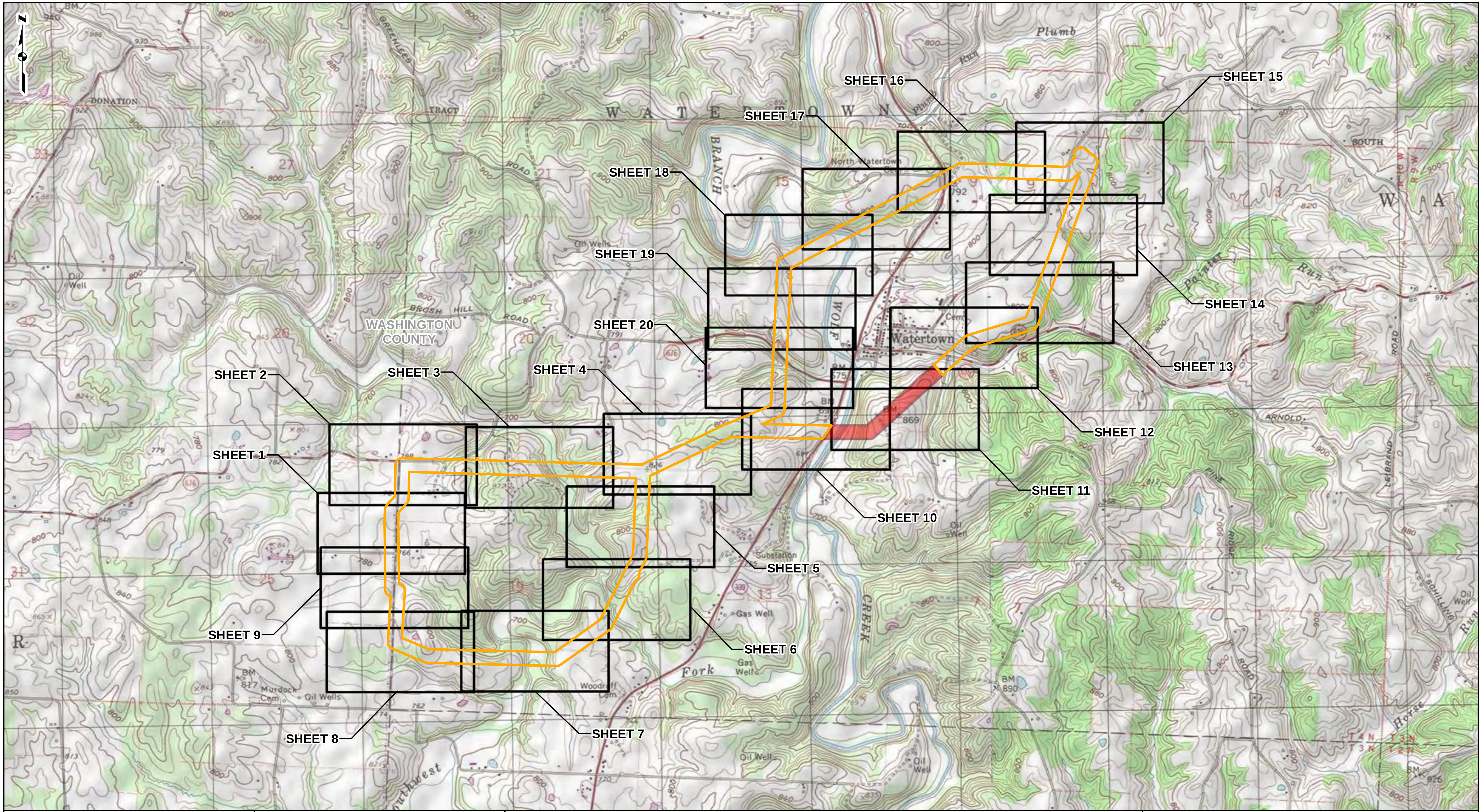

PROJECT LOCATION

WASHINGTON COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: WATERTOWN (1976) AND FLEMING (1961), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2023.

LEGEND

□	Study Area
🟥	No Access (Not Studied)
□	Sheet Index

0 1,000 2,000 4,000 Feet

FIGURE 2
RESOURCE LOCATION MAP SHEET INDEX

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
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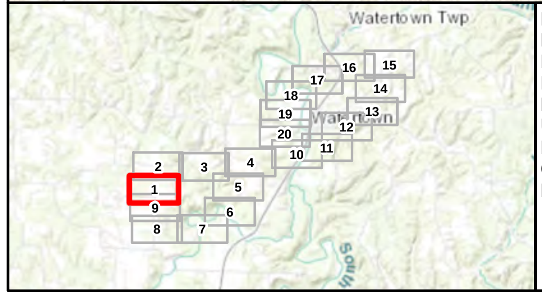

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LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Stormwater Feature

Stream Type:
⇢ Ephemeral
⇢ Intermittent
→ Perennial
┅ Open-Ended Boundary

▭ Pond
▭ Wetland
▭ Study Area
▭ No Access (Not Studied)

— 10-Ft Contour
-- NHD Stream
▨ NWI Wetland
▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 1 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

gai consultants

AMERICAN ELECTRIC POWER

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DATE: 11/9/2023
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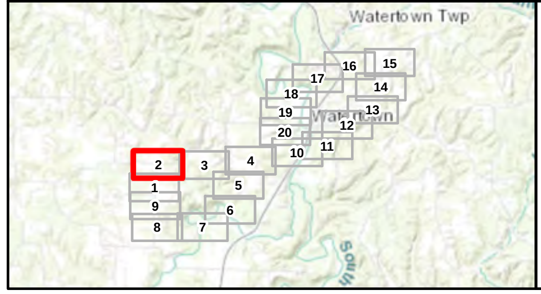

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- ― Stormwater Feature

Stream Type:
- ⇢ Ephemeral
- ⇢ Intermittent
- → Perennial
- ┅ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ▭ No Access (Not Studied)

- ― 10-Ft Contour
- ‐ ‐ NHD Stream
- ▨ NWI Wetland
- ▭ FEMA Floodplain

0 100 200 400 Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 2 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

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APPROVED: KLV

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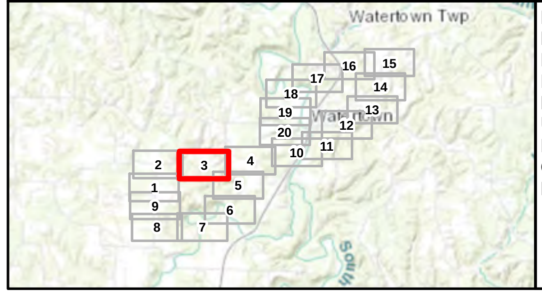

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LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Stormwater Feature

Stream Type:
- Ephemeral
- Intermittent
- Perennial
- Open-Ended Boundary

Pond
Wetland
Study Area
No Access (Not Studied)

10-Ft Contour
NHD Stream
NWI Wetland
FEMA Floodplain

0 100 200 400 Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 3 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
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DATE: 11/9/2023
APPROVED: KLV

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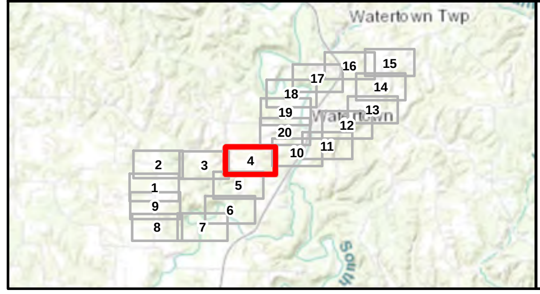

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- — Stormwater Feature

Stream Type:
- ⇢ Ephemeral
- ⇢ Intermittent
- → Perennial
- ⋯ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ▭ No Access (Not Studied)

- — 10-Ft Contour
- - - NHD Stream
- ▨ NWI Wetland
- ▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 4 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

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DATE: 11/9/2023
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APPROVED: KLV

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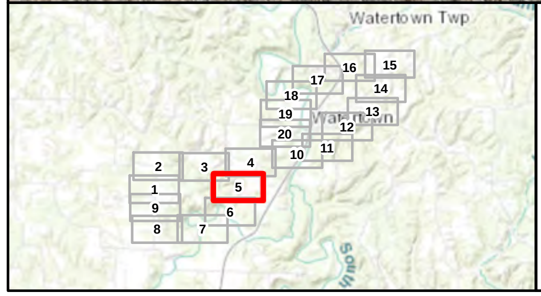

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- ─ Stormwater Feature

Stream Type:
- ┈▶ Ephemeral
- ╌▶ Intermittent
- ─▶ Perennial
- ┈┈ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ■ No Access (Not Studied)

- ─ 10-Ft Contour
- ╌ NHD Stream
- ▨ NWI Wetland
- ■ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 5 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

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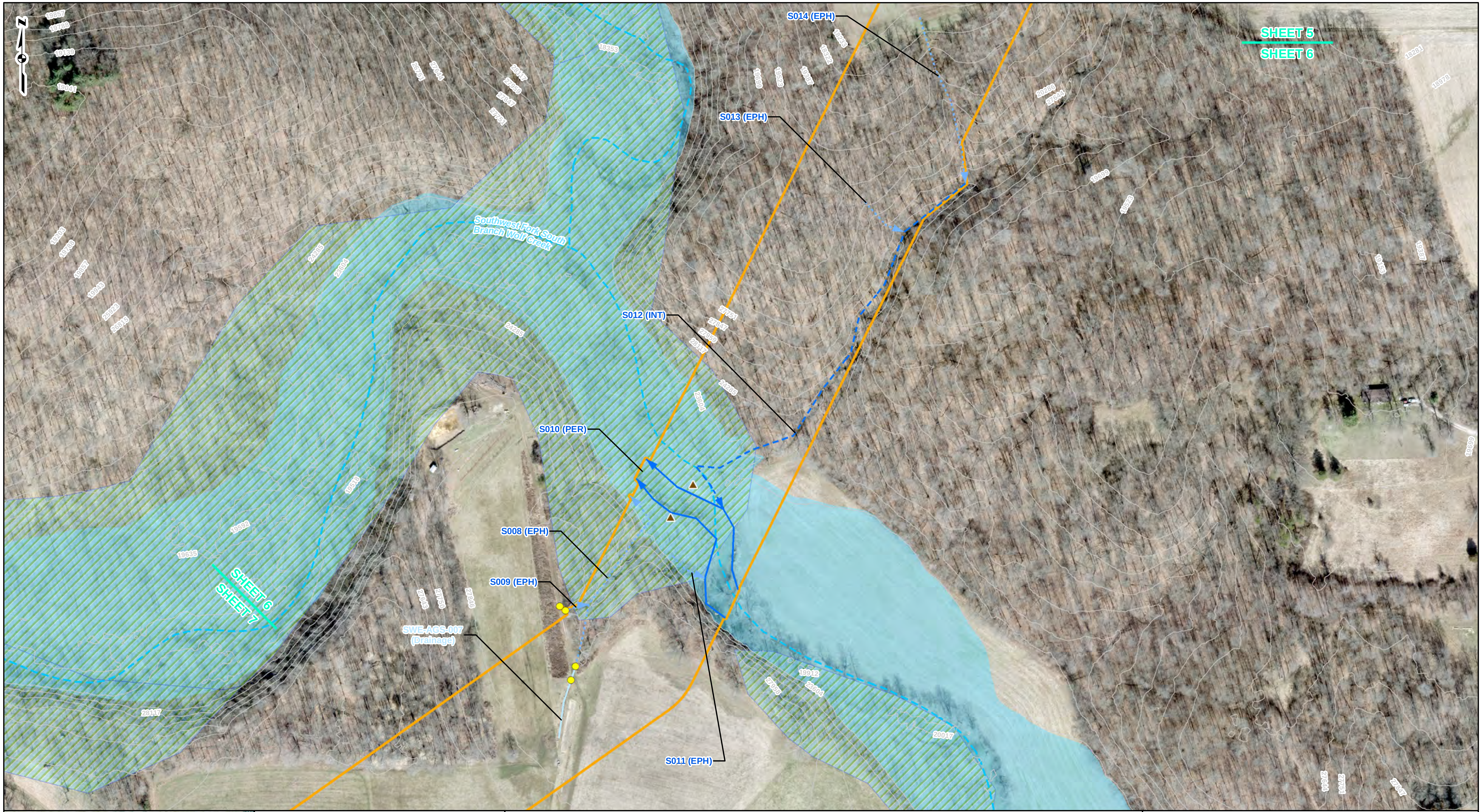

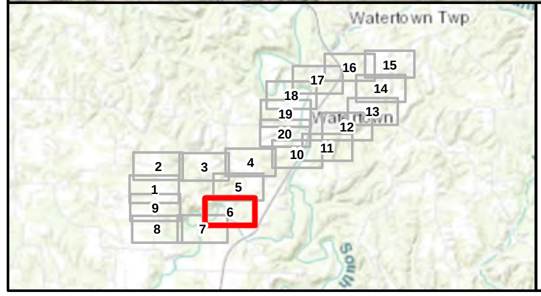

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- — Stormwater Feature

Stream Type:
- ┈► Ephemeral
- ╌► Intermittent
- —► Perennial
- ┈┈ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ▭ No Access (Not Studied)
- — 10-Ft Contour
- ╌ NHD Stream
- ▨ NWI Wetland
- ▭ FEMA Floodplain

0 100 200 400 Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 6 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

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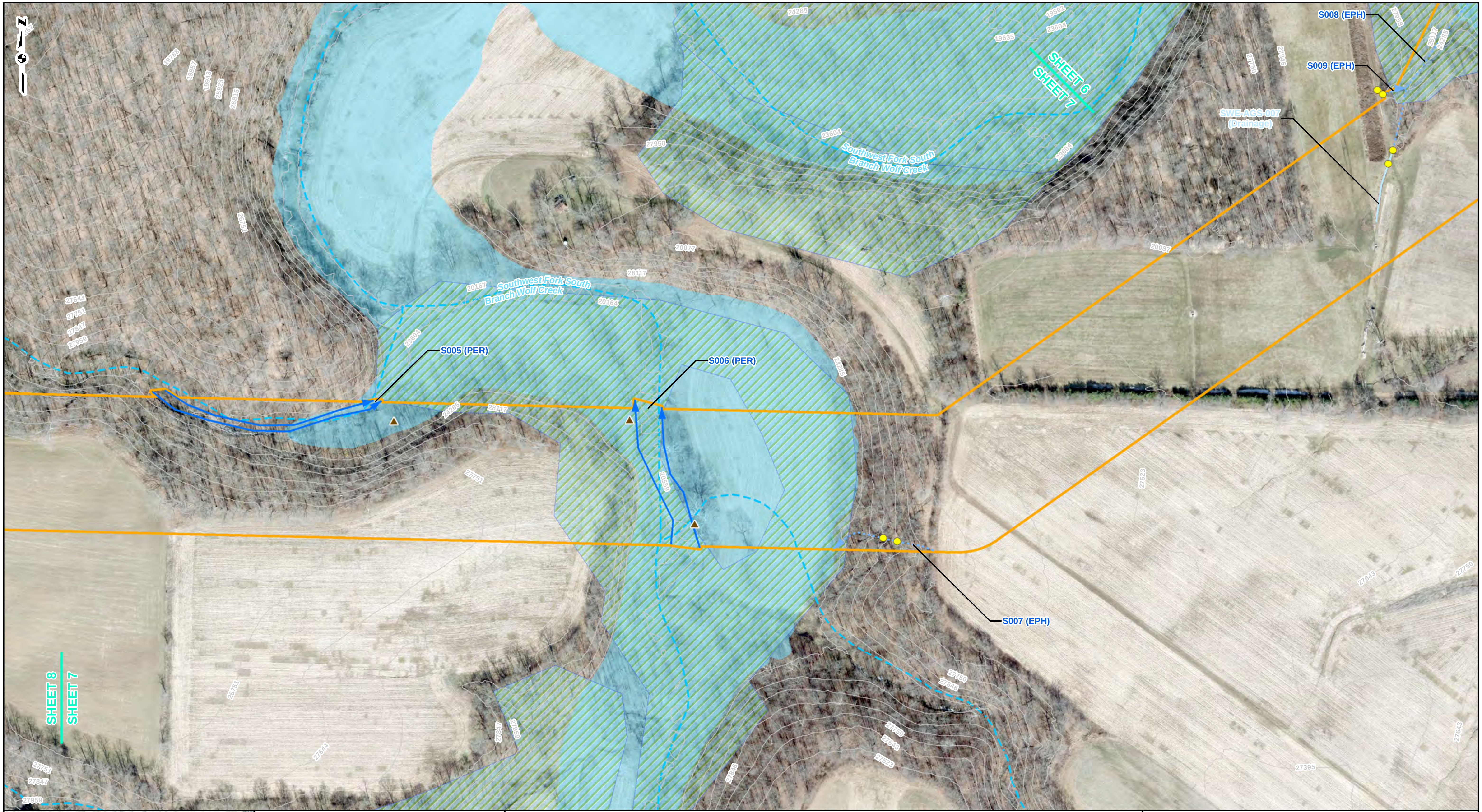

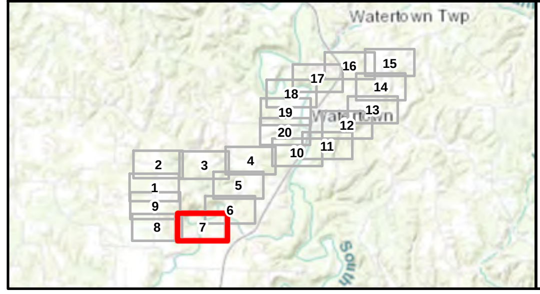

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- — Stormwater Feature

Stream Type:
- ┈▶ Ephemeral
- ‑ ‑▶ Intermittent
- ──▶ Perennial
- ┉┉ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ▭ No Access (Not Studied)
- — 10-Ft Contour
- ‑ ‑ NHD Stream
- ▨ NWI Wetland
- ▭ FEMA Floodplain

0 100 200 400 Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 7 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

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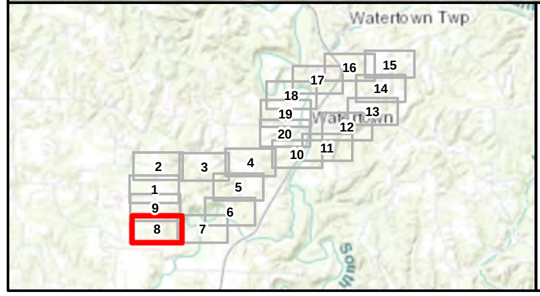

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LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Stormwater Feature

Stream Type:
⇢ Ephemeral
⇢ Intermittent
→ Perennial
┈ Open-Ended Boundary

▭ Pond
▭ Wetland
▭ Study Area
▭ No Access (Not Studied)

— 10-Ft Contour
-- NHD Stream
▨ NWI Wetland
▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 8 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG	DATE: 11/9/2023
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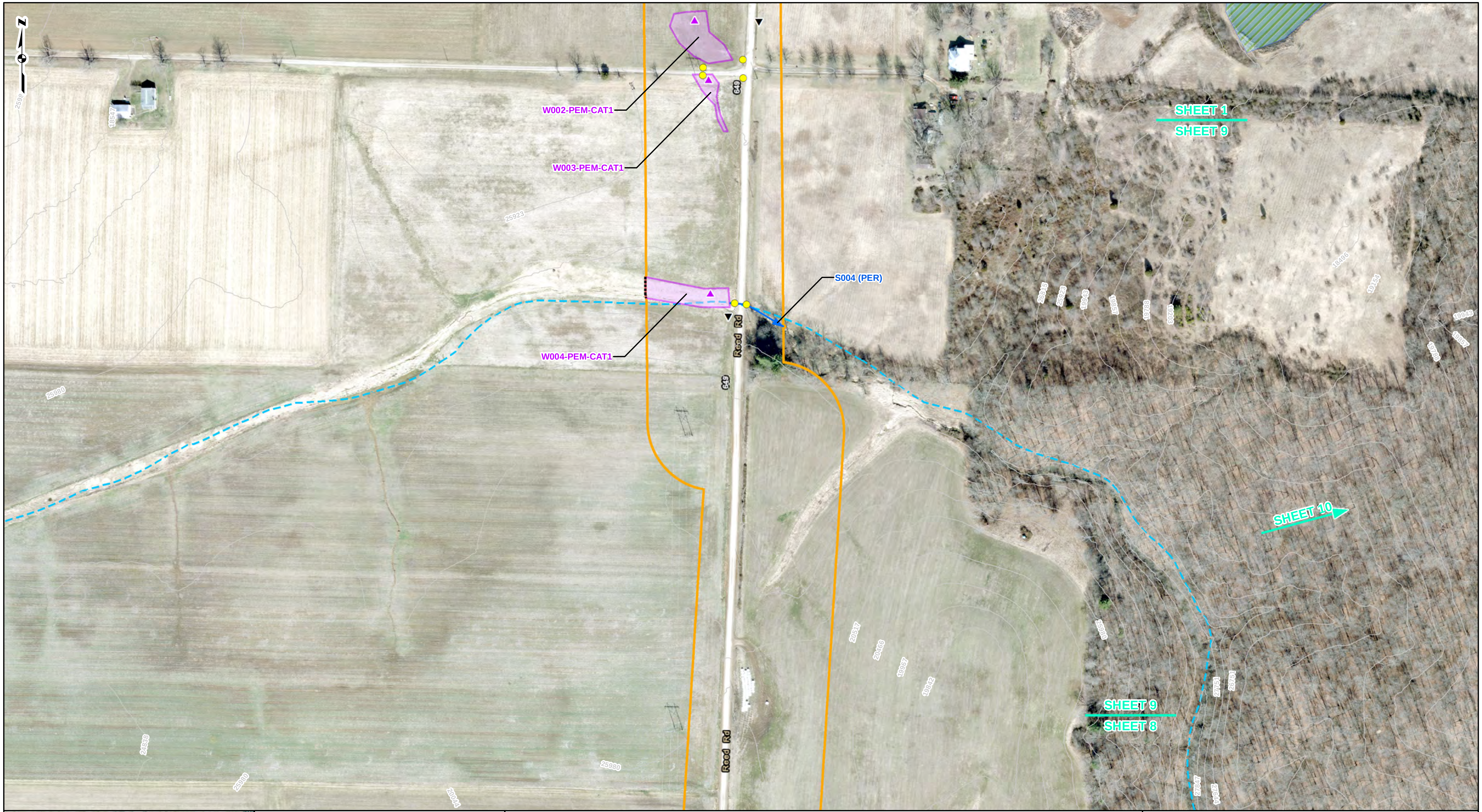

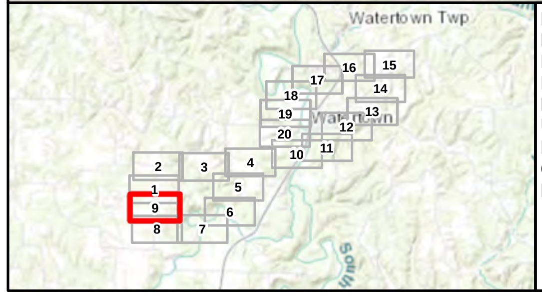

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LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Stormwater Feature

Stream Type:
⇢ Ephemeral
⇢ Intermittent
→ Perennial
┅ Open-Ended Boundary

▭ Pond
▭ Wetland
▭ Study Area
▭ No Access (Not Studied)

— 10-Ft Contour
-- NHD Stream
▨ NWI Wetland
▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 9 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
DATE: 11/9/2023
APPROVED: KLV

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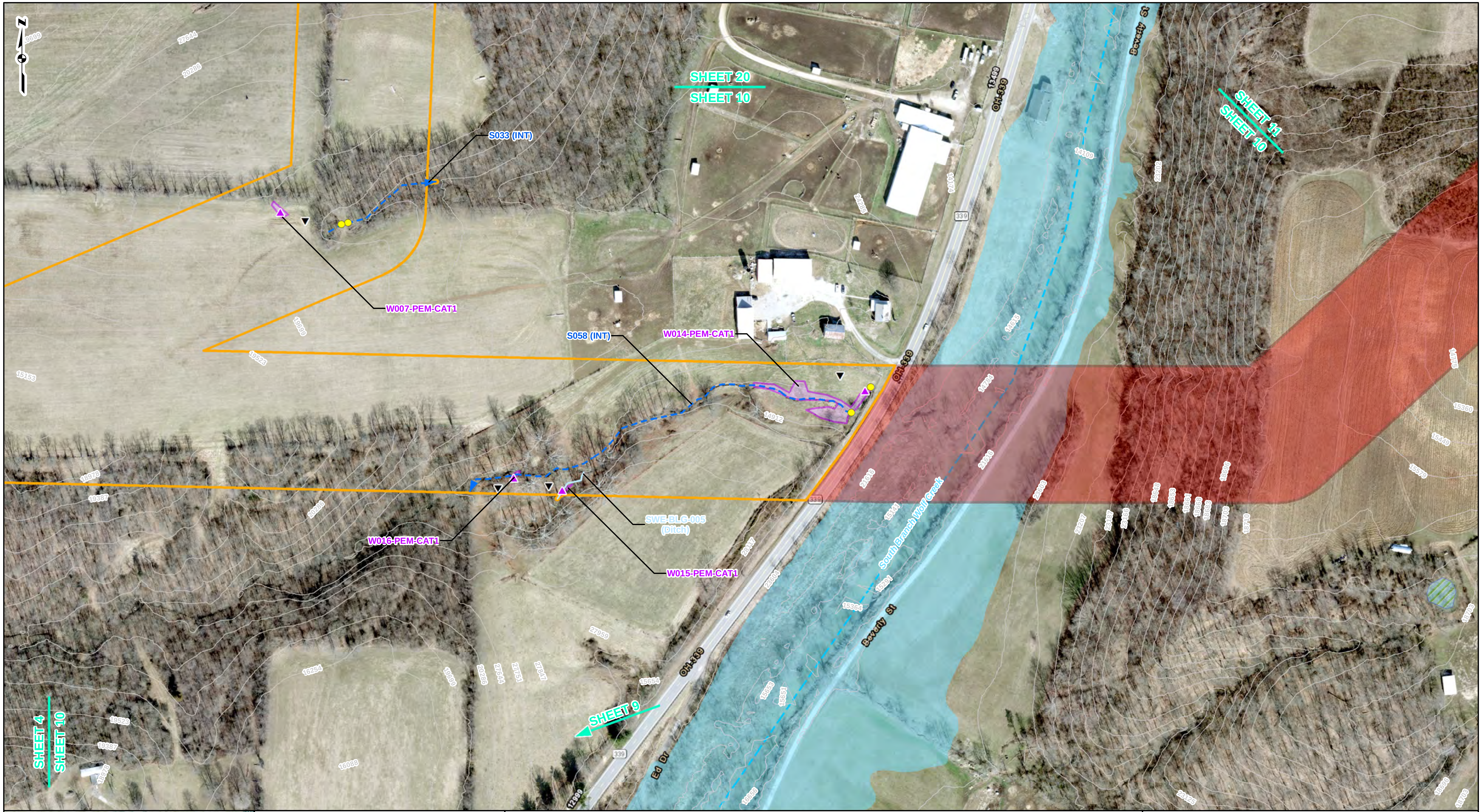

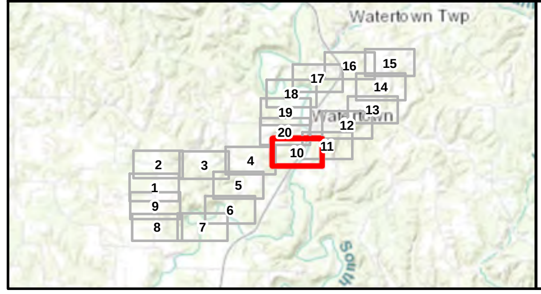

REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2022. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 11/2023. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2022. NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2022. 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2022. CONTOUR DATA, DERIVED FROM USGS DEMs, DOWNLOADED 2023.

LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Stormwater Feature

Stream Type:
┅▶ Ephemeral
- -▶ Intermittent
—▶ Perennial
┅┅ Open-Ended Boundary

☐ Pond
☐ Wetland
☐ Study Area
🟥 No Access (Not Studied)

— 10-Ft Contour
- - - NHD Stream
▨ NWI Wetland
▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 10 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
DATE: 11/9/2023
APPROVED: KLV

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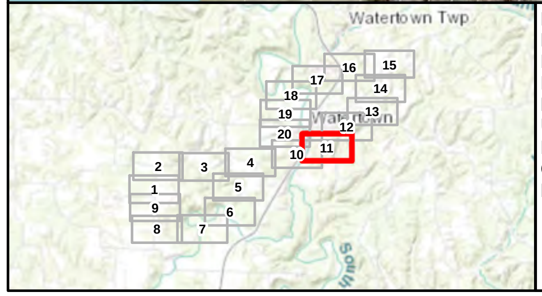

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LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Stormwater Feature

Stream Type:
→ Ephemeral
→ Intermittent
→ Perennial
-------- Open-Ended Boundary

▭ Pond
▭ Wetland
▭ Study Area
▭ No Access (Not Studied)

— 10-Ft Contour
- - NHD Stream
▨ NWI Wetland
▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 11 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
DATE: 11/9/2023
APPROVED: KLV

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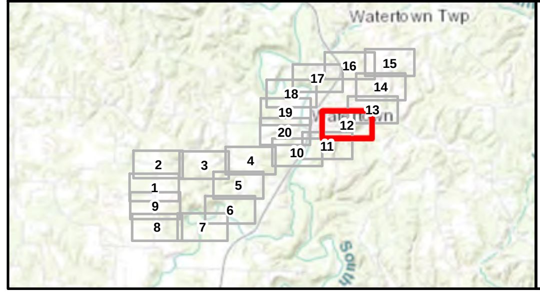

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LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Stormwater Feature

Stream Type:
→ Ephemeral
→ Intermittent
→ Perennial
┄ Open-Ended Boundary

▭ Pond
▭ Wetland
▭ Study Area
🟥 No Access (Not Studied)

— 10-Ft Contour
– – NHD Stream
▨ NWI Wetland
▭ FEMA Floodplain

0 100 200 400 Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 12 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
DATE: 11/9/2023
APPROVED: KLV

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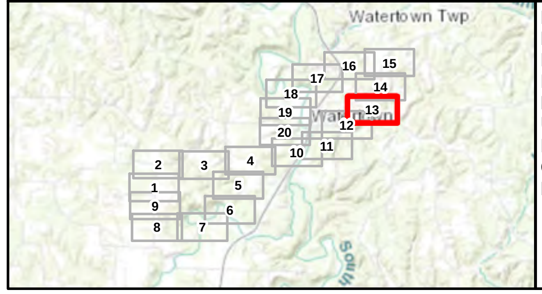

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- — Stormwater Feature

Stream Type:
- ┈► Ephemeral
- ╌► Intermittent
- —► Perennial
- ┅ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ▭ No Access (Not Studied)

- — 10-Ft Contour
- ╌ NHD Stream
- ▨ NWI Wetland
- ▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 13 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
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DATE: 11/9/2023
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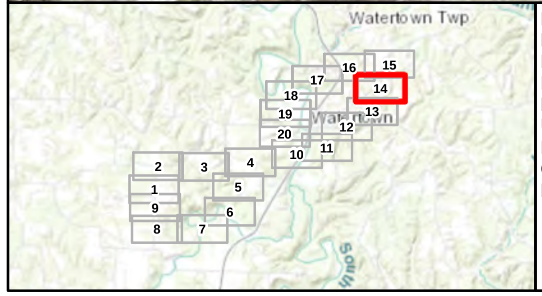

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ○ Existing Culvert
- — Stormwater Feature

Stream Type:
- ┄▶ Ephemeral
- ╌▶ Intermittent
- —▶ Perennial
- ┅┅ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ▭ No Access (Not Studied)

- — 10-Ft Contour
- ╌ NHD Stream
- ▨ NWI Wetland
- ▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 14 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
DATE: 11/9/2023
APPROVED: KLV

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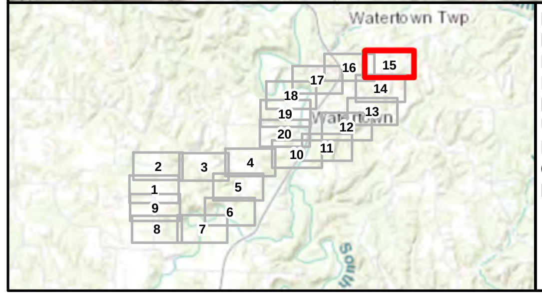

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LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Stormwater Feature

Stream Type:
- - -▶ Ephemeral
– –▶ Intermittent
—▶ Perennial
········ Open-Ended Boundary

🟦 Pond
🟪 Wetland
▭ Study Area
🟥 No Access (Not Studied)

— 10-Ft Contour
- - NHD Stream
▨ NWI Wetland
🟦 FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 15 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
DATE: 11/9/2023
APPROVED: KLV

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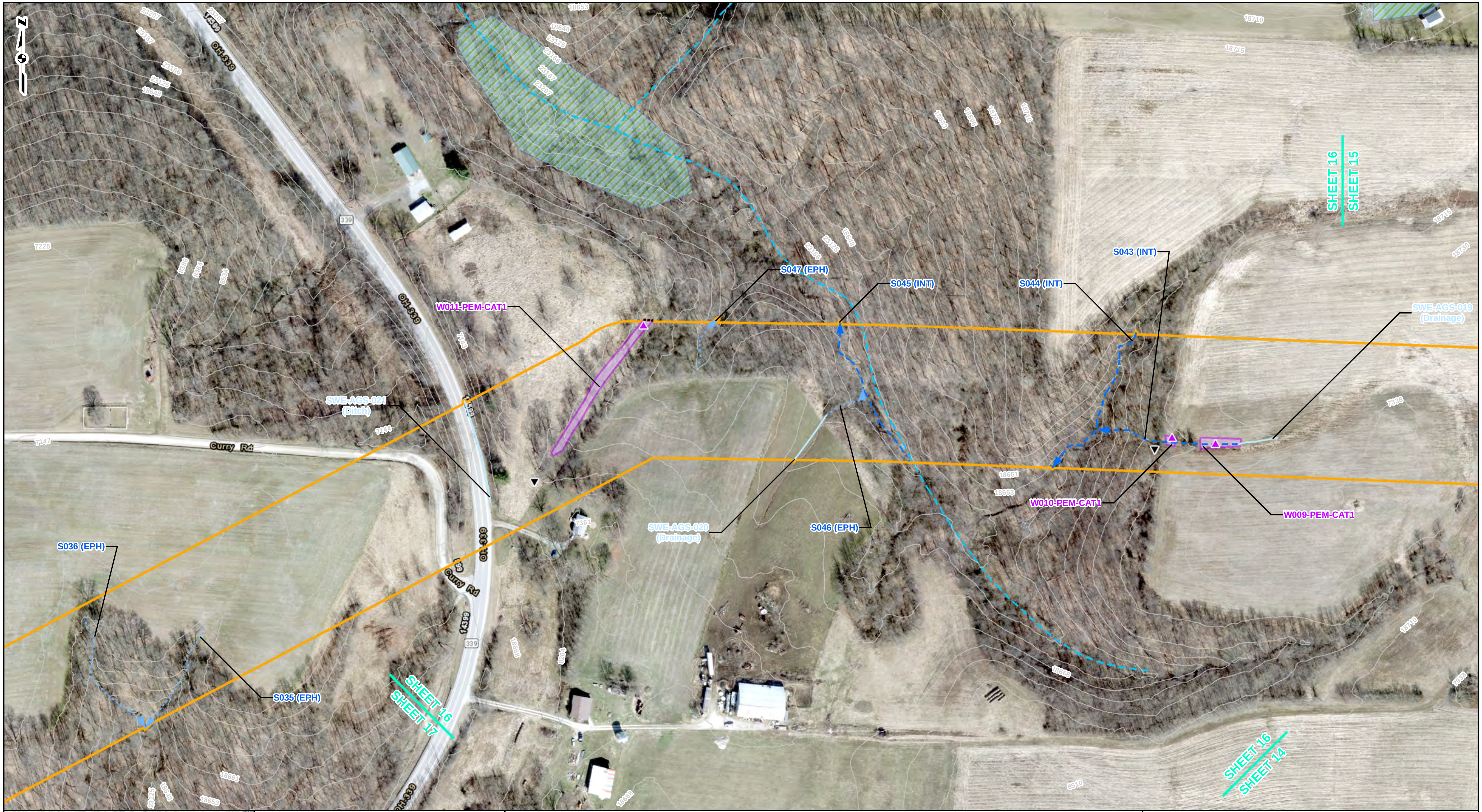

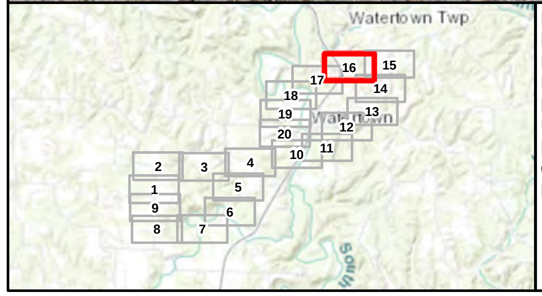

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- — Stormwater Feature

Stream Type:
- ┈► Ephemeral
- ╌► Intermittent
- ─► Perennial
- ┈ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ▭ No Access (Not Studied)

- — 10-Ft Contour
- ╌ NHD Stream
- ▨ NWI Wetland
- ▭ FEMA Floodplain

0 100 200 400 Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 16 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
DATE: 11/9/2023
APPROVED: KLV

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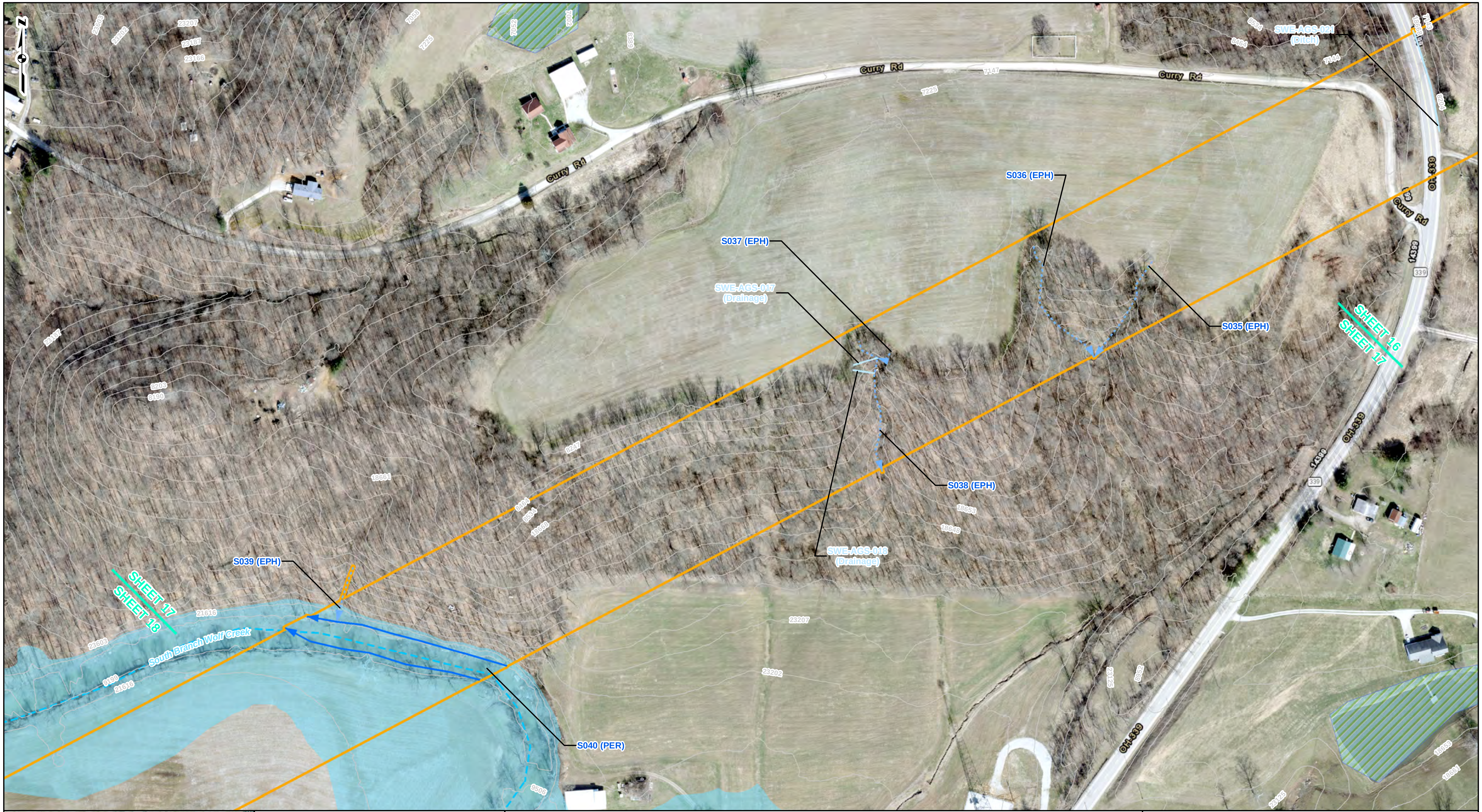

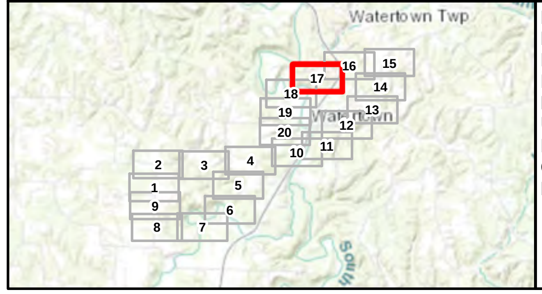

REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2022. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 11/2023. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2022. NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2022. 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2022. CONTOUR DATA, DERIVED FROM USGS DEMs, DOWNLOADED 2023.

LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Stormwater Feature

Stream Type:
┈► Ephemeral
╌► Intermittent
—► Perennial
┈ Open-Ended Boundary

▭ Pond
▭ Wetland
▭ Study Area
▭ No Access (Not Studied)

— 10-Ft Contour
╌ NHD Stream
▨ NWI Wetland
▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 17 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

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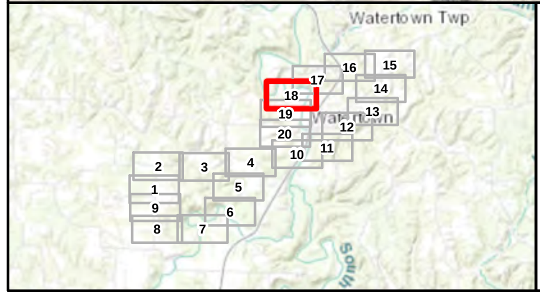

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- — Stormwater Feature

Stream Type:
- ┈► Ephemeral
- ╌► Intermittent
- —► Perennial
- ┈┈ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ▭ No Access (Not Studied)
- — 10-Ft Contour
- ╌ NHD Stream
- ▨ NWI Wetland
- ▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 18 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

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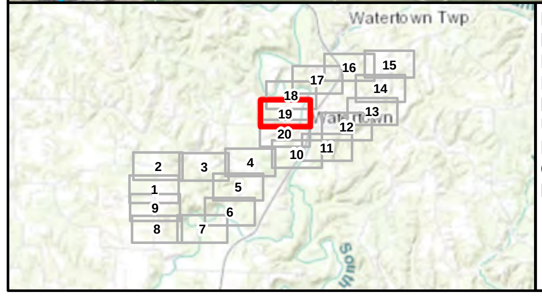

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- — Stormwater Feature

Stream Type:
- ···► Ephemeral
- - -► Intermittent
- ——► Perennial
- ······ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ▭ No Access (Not Studied)

- — 10-Ft Contour
- - - NHD Stream
- ▨ NWI Wetland
- ▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 19 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

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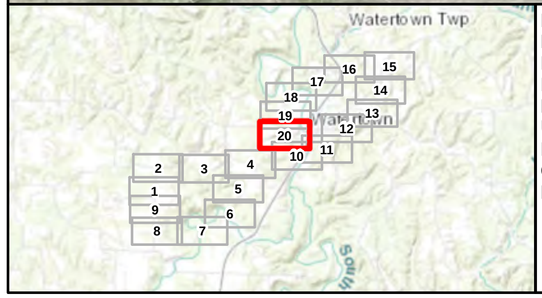

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LEGEND

- ▲ Soil Test Pit
- ▼ Upland Data Point
- ▲ Wetland Data Point
- ● Existing Culvert
- — Stormwater Feature

Stream Type:
- ┈▶ Ephemeral
- --▶ Intermittent
- —▶ Perennial
- ┈┈ Open-Ended Boundary

- ▭ Pond
- ▭ Wetland
- ▭ Study Area
- ■ No Access (Not Studied)

- — 10-Ft Contour
- - - NHD Stream
- ▨ NWI Wetland
- ■ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP
SHEET 20 OF 20

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

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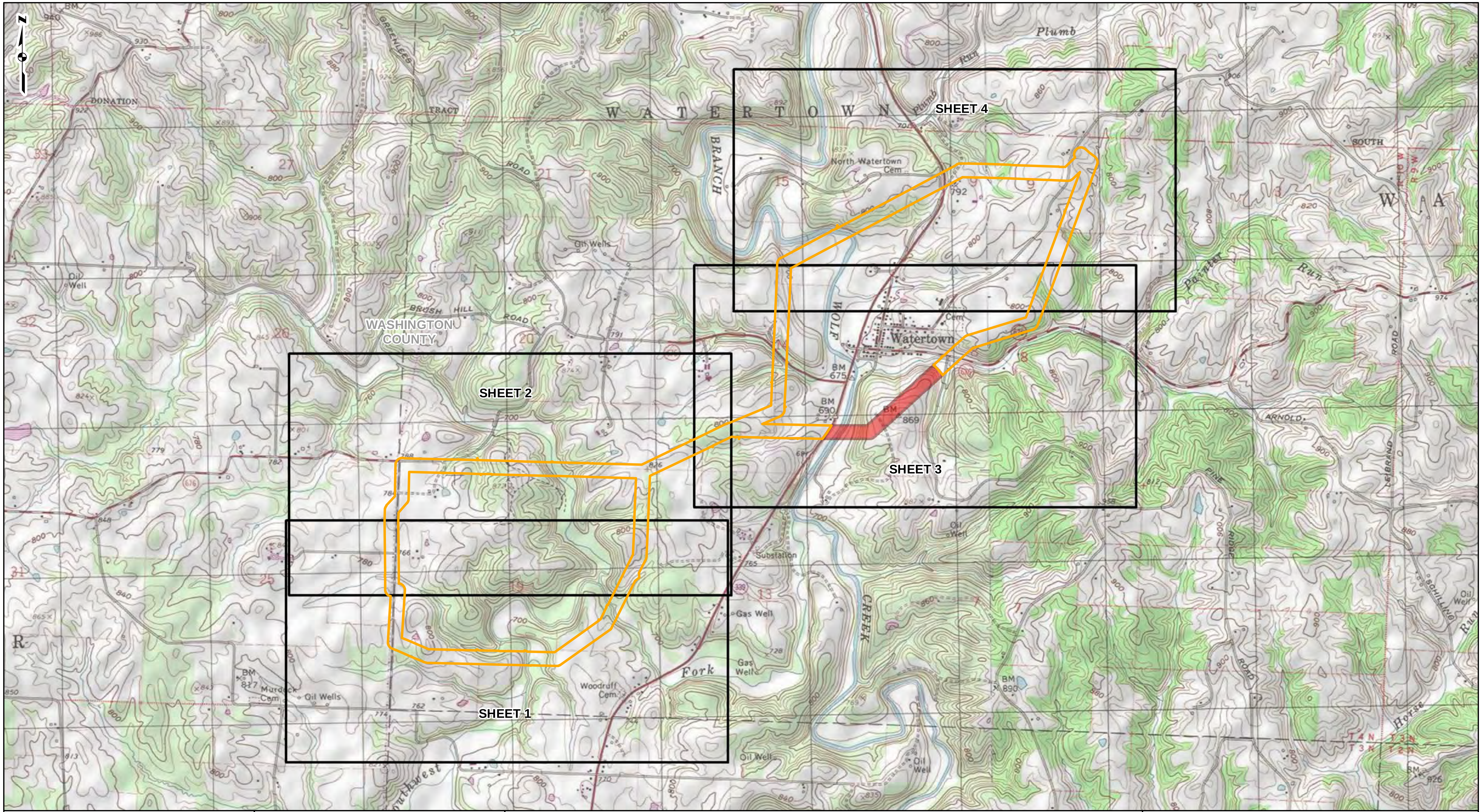

PROJECT LOCATION

WASHINGTON COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: WATERTOWN (1976) AND FLEMING (1961), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 11/2023.

LEGEND

- ▭ Study Area
- 🟥 No Access (Not Studied)
- ▭ Sheet Index

0 1,000 2,000 4,000 Feet

FIGURE 3
STREAM ELIGIBILITY MAP
SHEET INDEX

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
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APPROVED: KLV

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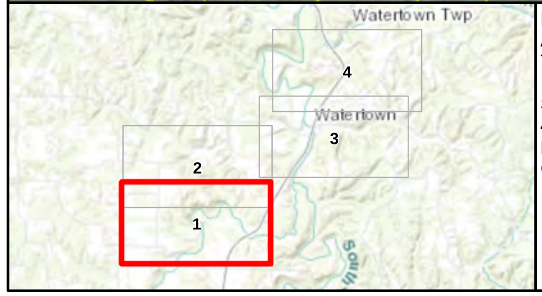

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LEGEND

Stream Type:
- ┈▶ Ephemeral
- ╌▶ Intermittent
- ─▶ Perennial
- ▭ Study Area

- 🟥 No Access (Not Studied)
- ╌ NHD Stream
- ─ Aquatic Life Use Stream

- ▭ Soil Type Boundary

OH EPA Stream Eligibilty:
- ▭ Eligible
- ▭ Ineligible
- ▭ Possibly Eligible

0 300 600 1,200 Feet

FIGURE 3
STREAM ELIGIBILITY MAP
SHEET 1 OF 4

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG	DATE: 11/9/2023
CHECKED: JAP	APPROVED: KLV

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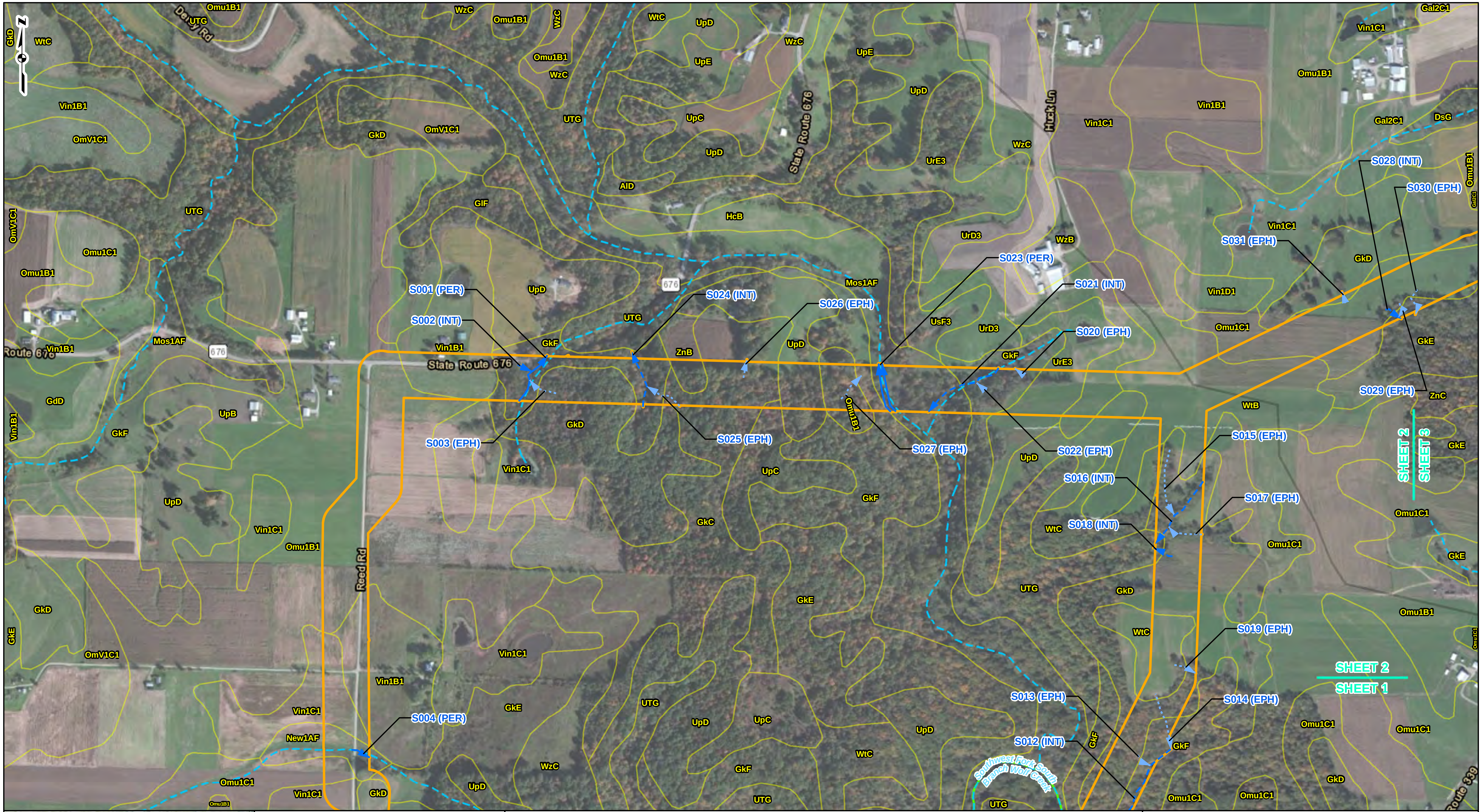

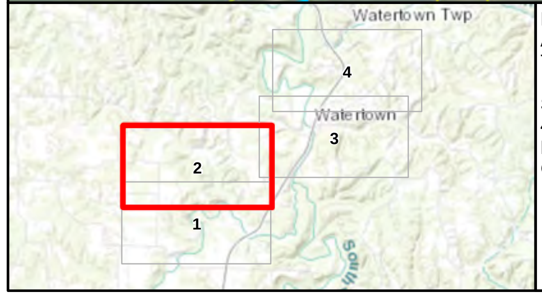

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LEGEND

Stream Type:
- Ephemeral
- Intermittent
- Perennial
- Study Area

- No Access (Not Studied)
- NHD Stream
- Aquatic Life Use Stream

- Soil Type Boundary

OH EPA Stream Eligibilty:
- Eligible
- Ineligible
- Possibly Eligible

0 300 600 1,200 Feet

FIGURE 3
STREAM ELIGIBILITY MAP
SHEET 2 OF 4

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
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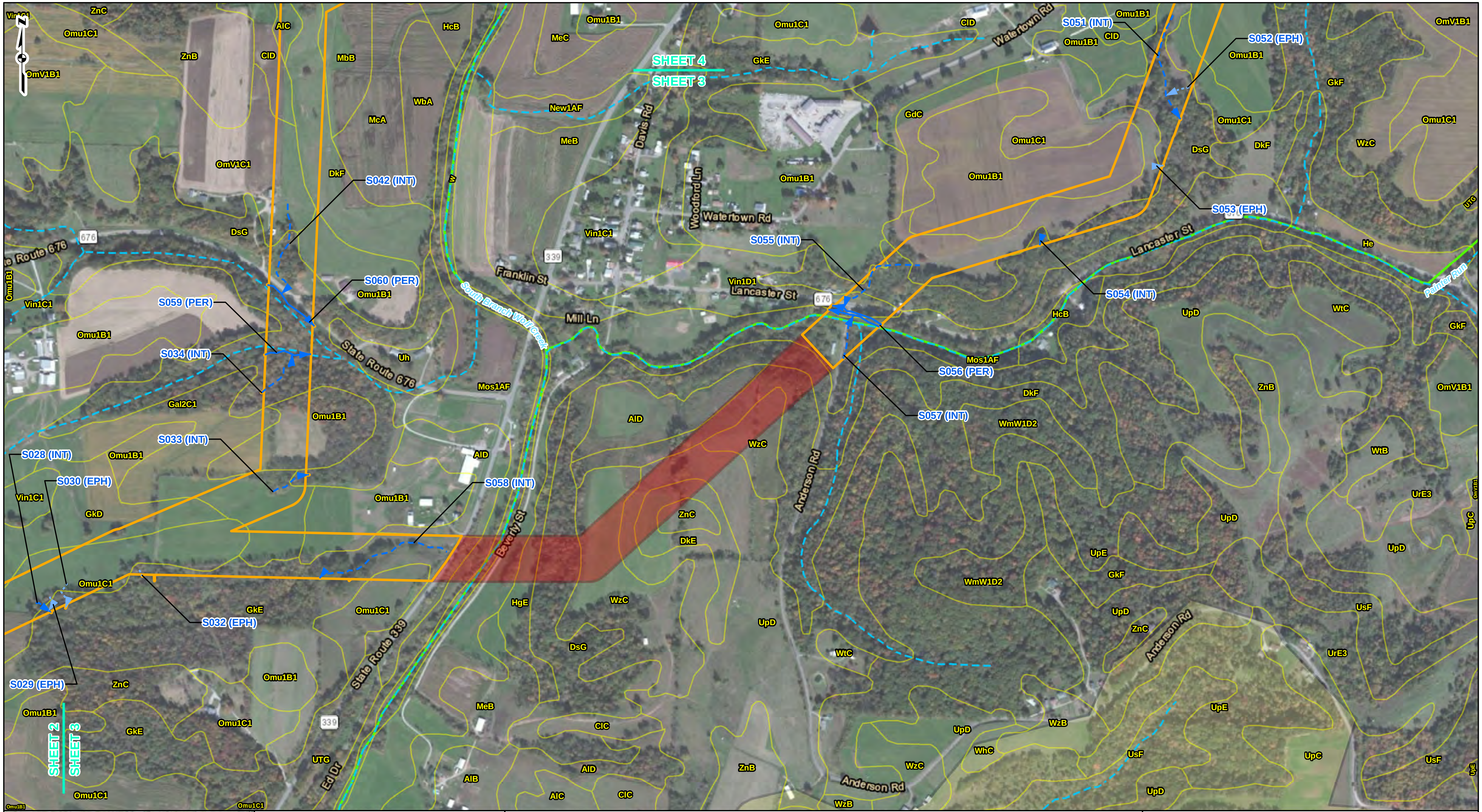

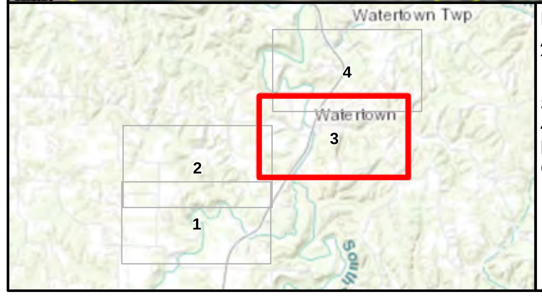

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LEGEND

Stream Type:
- Ephemeral
- Intermittent
- Perennial
- Study Area

- 🟥 No Access (Not Studied)
- NHD Stream
- Aquatic Life Use Stream

- Soil Type Boundary

OH EPA Stream Eligibilty:
- ☐ Eligible
- ☐ Ineligible
- ☐ Possibly Eligible

0 300 600 1,200 Feet

FIGURE 3
STREAM ELIGIBILITY MAP
SHEET 3 OF 4

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG	DATE: 11/9/2023
CHECKED: JAP	APPROVED: KLV

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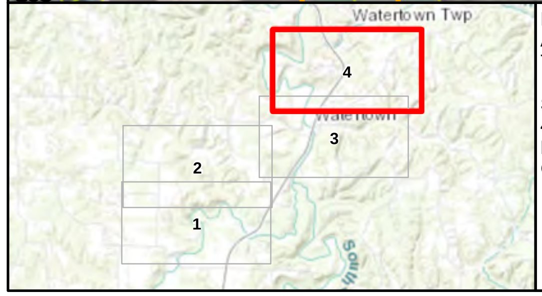

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FIGURE 3
STREAM ELIGIBILITY MAP
SHEET 4 OF 4

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
DATE: 11/9/2023
APPROVED: KLV

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APPENDIX A

Photographic Log

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

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

Photograph 3. Wetland W001-PEM-CAT1, Facing East

Photograph 4. Wetland W001-PEM-CAT1, Facing West

Photograph 5. Wetland W002-PEM-CAT1, Facing North

Photograph 6. Wetland W002-PEM-CAT1, Facing South

Photograph 7. Wetland W002-PEM-CAT1, Facing East

Photograph 8. Wetland W002-PEM-CAT1, Facing West

Photograph 9. Wetland W003-PEM-CAT1, Facing North

Photograph 10. Wetland W003-PEM-CAT1, Facing South

Photograph 11. Wetland W003-PEM-CAT1, Facing East

Photograph 12. Wetland W003-PEM-CAT1, Facing West

Photograph 13. Wetland W004-PEM-CAT1, Facing North

Photograph 14. Wetland W004-PEM-CAT1, Facing South

Photograph 15. Wetland W004-PEM-CAT1, Facing East

Photograph 16. Wetland W004-PEM-CAT1, Facing West

Photograph 17. Wetland W005-PEM-CATMOD2, Facing North

Photograph 18. Wetland W005-PEM-CATMOD2, Facing South

Photograph 19. Wetland W005-PEM-CATMOD2, Facing East

Photograph 20. Wetland W005-PEM-CATMOD2, Facing West

Photograph 21. Wetland W006-PEM-CAT2, Facing North

Photograph 22. Wetland W006-PEM-CAT2, Facing South

Photograph 23. Wetland W006-PEM-CAT2, Facing East

Photograph 24. Wetland W006-PEM-CAT2, Facing West

Photograph 25. Wetland W007-PEM-CAT1, Facing North

Photograph 26. Wetland W007-PEM-CAT1, Facing South

Photograph 27. Wetland W007-PEM-CAT1, Facing East

Photograph 28. Wetland W007-PEM-CAT1, Facing West

Photograph 29. Wetland W008-PEM-CAT1, Facing North

Photograph 30. Wetland W008-PEM-CAT1, Facing South

Photograph 31. Wetland W008-PEM-CAT1, Facing East

Photograph 32. Wetland W008-PEM-CAT1, Facing West

Photograph 33. Wetland W009-PEM-CAT1, Facing North

Photograph 34. Wetland W009-PEM-CAT1, Facing South

Photograph 35. Wetland W009-PEM-CAT1, Facing East

Photograph 36. Wetland W009-PEM-CAT1, Facing West

Photograph 37. Wetland W010-PEM-CAT1, Facing North

Photograph 38. Wetland W010-PEM-CAT1, Facing South

Photograph 39. Wetland W010-PEM-CAT1, Facing East

Photograph 40. Wetland W010-PEM-CAT1, Facing West

Photograph 41. Wetland W011-PEM-CAT1, Facing North

Photograph 42. Wetland W011-PEM-CAT1, Facing South

Photograph 43. Wetland W011-PEM-CAT1, Facing East

Photograph 44. Wetland W011-PEM-CAT1, Facing West

Photograph 45. Wetland W012-PEM-CATMOD2, Facing North

Photograph 46. Wetland W012-PEM-CATMOD2, Facing South

Photograph 47. Wetland W012-PEM-CATMOD2, Facing East

Photograph 48. Wetland W012-PEM-CATMOD2, Facing West

Photograph 49. Wetland W013-PEM-CAT1, Facing North

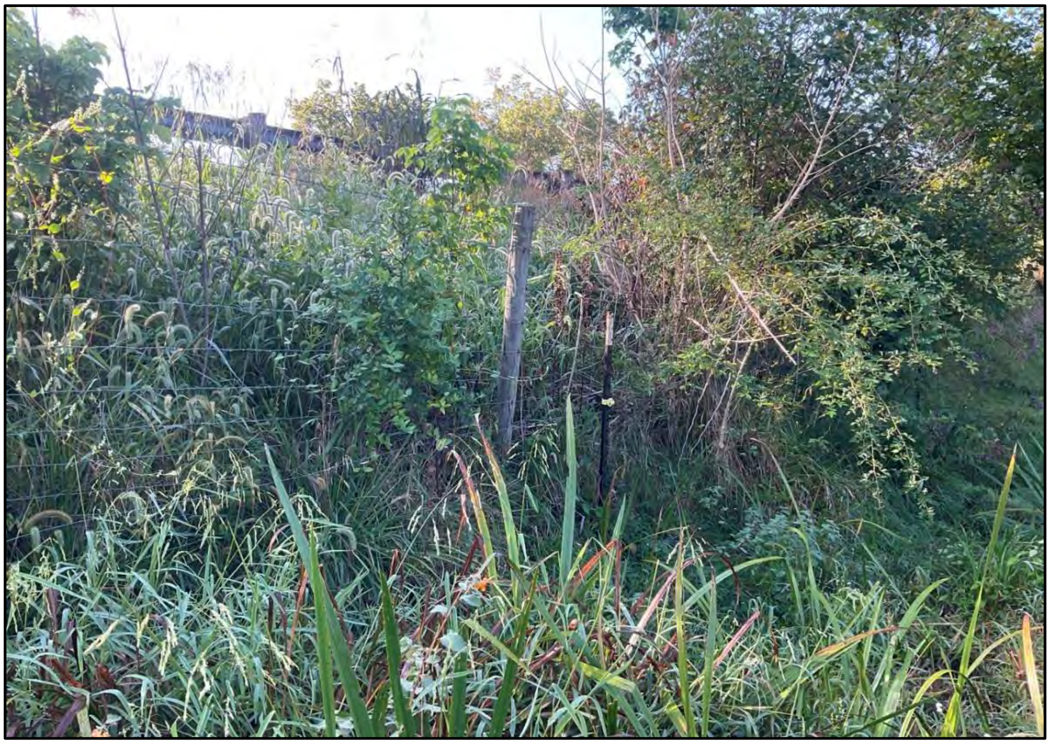
Photograph 50. Wetland W013-PEM-CAT1, Facing South

Photograph 51. Wetland W013-PEM-CAT1, Facing East

Photograph 52. Wetland W013-PEM-CAT1, Facing West

Photograph 53. Wetland W014-PEM-CAT1, Facing North

Photograph 54. Wetland W014-PEM-CAT1, Facing South



Photograph 55. Wetland W014-PEM-CAT1, Facing East

Photograph 56. Wetland W014-PEM-CAT1, Facing West

Photograph 57. Wetland W015-PEM-CAT1, Facing North

Photograph 58. Wetland W015-PEM-CAT1, Facing South

Photograph 59. Wetland W015-PEM-CAT1, Facing East

Photograph 60. Wetland W015-PEM-CAT1, Facing West

Photograph 61. Wetland W016-PEM-CAT1, Facing North

Photograph 62. Wetland W016-PEM-CAT1, Facing South

Photograph 63. Wetland W016-PEM-CAT1, Facing East

Photograph 64. Wetland W016-PEM-CAT1, Facing West

Photograph 65. Stream S001, Upstream, Facing South

Photograph 66. Stream S001, Downstream, Facing Northwest

Photograph 67. Stream S001, Crossing, Facing West

Photograph 68. Stream S001, Substrate

Photograph 69. Stream S002, Upstream, Facing West

Photograph 70. Stream S002, Downstream, Facing East

Photograph 71. Stream S002, Crossing, Facing West

Photograph 72. Stream S002, Substrate

Photograph 73. Stream S003, Upstream, Facing Southeast

Photograph 74. Stream S003, Downstream, Facing Northwest

Photograph 75. Stream S003, Crossing, Facing Northeast

Photograph 76. Stream S003, Substrate

Photograph 77. Stream S004, Upstream, Facing West

Photograph 78. Stream S004, Downstream, Facing Southeast

Photograph 79. Stream S004, Crossing, Facing Southeast

Photograph 80. Stream S004, Substrate

Photograph 81. Stream S005, Upstream, Facing West

Photograph 82. Stream S005, Downstream, Facing Northeast

Photograph 83. Stream S005, Crossing, Facing Southeast

Photograph 84. Stream S005, Substrate

Photograph 85. Stream S006 (Southwest Fork South Branch Creek), Upstream, Facing Northeast

Photograph 86. Stream S006 (Southwest Fork South Branch Creek), Downstream, Facing South

Photograph 87. Stream S006 (Southwest Fork South Branch Creek), Crossing, Facing North

Photograph 88. Stream S006 (Southwest Fork South Branch Creek), Substrate

Photograph 89. Stream S007, Upstream, Facing East

Photograph 90. Stream S007, Downstream, Facing Southwest

Photograph 91. Stream S007, Crossing, Facing East

Photograph 92. Stream S007, Substrate

Photograph 93. Stream S008, Upstream, Facing Southwest

Photograph 94. Stream S008, Downstream, Facing East

Photograph 95. Stream S008, Crossing, Facing Northeast

Photograph 96. Stream S008, Substrate

Photograph 97. Stream S009, Upstream, Facing Southwest

Photograph 98. Stream S009, Downstream, Facing Northeast

Photograph 99. Stream S009, Crossing, Facing East

Photograph 100. Stream S009, Substrate

Photograph 101. Stream S010 (Southwest Fork South Branch Creek), Upstream, Facing North

Photograph 102. Stream S010 (Southwest Fork South Branch Creek), Downstream, Facing South

Photograph 103. Stream S010 (Southwest Fork South Branch Creek), Crossing, Facing West

Photograph 104. Stream S010 (Southwest Fork South Branch Creek), Substrate

Photograph 105. Stream S011, Upstream, Facing Northwest

Photograph 106. Stream S011, Downstream, Facing Southeast

Photograph 107. Stream S011, Crossing, Facing West

Photograph 108. Stream S011, Substrate

Photograph 109. Stream S012, Upstream, Facing Northeast

Photograph 110. Stream S012, Downstream, Facing Southwest

Photograph 111. Stream S012, Crossing, Facing East

Photograph 112. Stream S012, Substrate

Photograph 113. Stream S013, Upstream, Facing Northwest

Photograph 114. Stream S013, Downstream, Facing Southeast

Photograph 115. Stream S013, Crossing, Facing Southeast

Photograph 116. Stream S013, Substrate

Photograph 117. Stream S014, Upstream, Facing East

Photograph 118. Stream S014, Downstream, Facing Southwest

Photograph 119. Stream S014, Crossing, Facing Northeast

Photograph 120. Stream S014, Substrate

Photograph 121. Stream S015, Upstream, Facing North

Photograph 122. Stream S015, Downstream, Facing South

Photograph 123. Stream S015, Crossing, Facing North

Photograph 124. Stream S015, Substrate

Photograph 125. Stream S016, Upstream, Facing Northeast

Photograph 126. Stream S016, Downstream, Facing Southwest

Photograph 127. Stream S016, Crossing, Facing North

Photograph 128. Stream S016, Substrate

Photograph 129. Stream S017, Upstream, Facing East

Photograph 130. Stream S017, Downstream, Facing Northwest

Photograph 131. Stream S017, Crossing, Facing South

Photograph 132. Stream S017, Substrate

Photograph 133. Stream S018, Upstream, Facing East

Photograph 134. Stream S018, Downstream, Facing South

Photograph 135. Stream S018, Crossing, Facing East

Photograph 136. Stream S018, Substrate

Photograph 137. Stream S019, Upstream, Facing Northwest

Photograph 138. Stream S019, Downstream, Facing Southeast

Photograph 139. Stream S019, Crossing, Facing West

Photograph 140. Stream S019, Substrate

Photograph 141. Stream S020, Upstream, Facing Southeast

Photograph 142. Stream S020, Downstream, Facing Northwest

Photograph 143. Stream S020, Crossing, Facing East

Photograph 144. Stream S020, Substrate

Photograph 145. Stream S021, Upstream, Facing Northeast

Photograph 146. Stream S021, Downstream, Facing Southwest

Photograph 147. Stream S021, Crossing, Facing East

Photograph 148. Stream S021, Substrate

Photograph 149. Stream S022, Upstream, Facing Southeast

Photograph 150. Stream S022, Downstream, Facing West

Photograph 151. Stream S022, Crossing, Facing Northwest

Photograph 152. Stream S022, Substrate

Photograph 153. Stream S023, Upstream, Facing South

Photograph 154. Stream S023, Downstream, Facing North

Photograph 155. Stream S023, Crossing, Facing South

Photograph 156. Stream S023, Substrate

Photograph 157. Stream S024, Upstream, Facing Sout

Photograph 158. Stream S024, Downstream, Facing North

Photograph 159. Stream S024, Crossing, Facing North

Photograph 160. Stream S024, Substrate

Photograph 161. Stream S025, Upstream, Facing East

Photograph 162. Stream S025, Downstream, Facing West

Photograph 163. Stream S025, Crossing, Facing East

Photograph 164. Stream S025, Substrate

Photograph 165. Stream S026, Upstream, Facing South

Photograph 166. Stream S026, Downstream, Facing Northwest

Photograph 167. Stream S026, Crossing, Facing North

Photograph 168. Stream S026, Substrate

Photograph 169. Stream S027, Upstream, Facing Southwest

Photograph 170. Stream S027, Downstream, Facing Northeast

Photograph 171. Stream S027, Crossing, Facing East

Photograph 172. Stream S027, Substrate

Photograph 173. Stream S028, Upstream, Facing Southeast

Photograph 174. Stream S028, Downstream, Facing Northwest

Photograph 175. Stream S028, Crossing, Facing East

Photograph 176. Stream S028, Substrate

Photograph 177. Stream S029, Upstream, Facing North

Photograph 178. Stream S029, Downstream, Facing South

Photograph 179. Stream S029, Crossing, Facing North

Photograph 180. Stream S029, Substrate

Photograph 181. Stream S030, Upstream, Facing North

Photograph 182. Stream S030, Downstream, Facing East

Photograph 183. Stream S030, Crossing, Facing North

Photograph 184. Stream S030, Substrate

Photograph 185. Stream S031, Upstream, Facing South

Photograph 186. Stream S031, Downstream, Facing Northwest

Photograph 187. Stream S031, Crossing, Facing South

Photograph 188. Stream S031, Substrate

Photograph 189. Stream S032, Upstream, Facing North

Photograph 190. Stream S032, Downstream, Facing Southeast

Photograph 191. Stream S032, Crossing, Facing North

Photograph 192. Stream S032, Substrate

Photograph 193. Stream S033, Upstream, Facing Southwest

Photograph 194. Stream S033, Downstream, Facing Northeast

Photograph 195. Stream S033, Crossing, Facing West

Photograph 196. Stream S033, Substrate

Photograph 197. Stream S034, Upstream, Facing West

Photograph 198. Stream S034, Downstream, Facing North

Photograph 199. Stream S034, Crossing, Facing North

Photograph 200. Stream S034, Substrate

Photograph 201. Stream S035, Upstream, Facing Northeast

Photograph 202. Stream S035, Downstream, Facing Southwest

Photograph 203. Stream S035, Crossing, Facing East

Photograph 204. Stream S035, Substrate

Photograph 205. Stream S036, Upstream, Facing Northwest

Photograph 206. Stream S036, Downstream, Facing Southeast

Photograph 207. Stream S036, Crossing, Facing North

Photograph 208. Stream S036, Substrate

Photograph 209. Stream S037, Upstream, Facing North

Photograph 210. Stream S037, Downstream, Facing South

Photograph 211. Stream S037, Crossing, Facing Southwest

Photograph 212. Stream S037, Substrate

Photograph 213. Stream S038, Upstream, Facing Northwest

Photograph 214. Stream S038, Downstream, Facing Southeast

Photograph 215. Stream S038, Crossing, Facing North

Photograph 216. Stream S038, Substrate

Photograph 217. Stream S039, Upstream, Facing North

Photograph 218. Stream S039, Downstream, Facing South

Photograph 219. Stream S039, Crossing, Facing North

Photograph 220. Stream S039, Substrate

Photograph 221. Stream S040 (South Branch Wolf Creek), Upstream, Facing East

Photograph 222. Stream S040 (South Branch Wolf Creek), Downstream, Facing West

Photograph 223. Stream S040 (South Branch Wolf Creek), Crossing, Facing Southeast

Photograph 224. Stream S040 (South Branch Wolf Creek), Substrate

Photograph 225. Stream S041, Upstream, Facing Northeast

Photograph 226. Stream S041, Downstream, Facing Southwest

Photograph 227. Stream S041, Crossing, Facing West

Photograph 228. Stream S041, Substrate

Photograph 229. Stream S042, Upstream, Facing North

Photograph 230. Stream S042, Downstream, Facing South

Photograph 231. Stream S042, Crossing, Facing South

Photograph 232. Stream S042, Substrate

Photograph 233. Stream S043, Upstream, Facing East

Photograph 234. Stream S043, Downstream, Facing West

Photograph 235. Stream S043, Crossing, Facing Southeast

Photograph 236. Stream S043, Substrate

Photograph 237. Stream S044, Upstream, Facing North

Photograph 238. Stream S044, Downstream, Facing Southwest

Photograph 239. Stream S044, Crossing, Facing South

Photograph 240. Stream S044, Substrate

Photograph 241. Stream S045, Upstream, Facing Southwest

Photograph 242. Stream S045, Downstream, Facing North

Photograph 243. Stream S045, Crossing, Facing West

Photograph 244. Stream S045, Substrate

Photograph 245. Stream S046, Upstream, Facing East

Photograph 246. Stream S046, Downstream, Facing West

Photograph 247. Stream S046, Crossing, Facing Southwest

Photograph 248. Stream S046, Substrate

Photograph 249. Stream S047, Upstream, Facing Southwest

Photograph 250. Stream S047, Downstream, Facing East

Photograph 251. Stream S047, Crossing, Facing Northwest

Photograph 252. Stream S047, Substrate

Photograph 253. Stream S048, Upstream, Facing East

Photograph 254. Stream S048, Downstream, Facing Southwest

Photograph 255. Stream S048, Crossing, Facing North

Photograph 256. Stream S048, Substrate

Photograph 257. Stream S049, Upstream, Facing North

Photograph 258. Stream S049, Downstream, Facing Southwest

Photograph 259. Stream S049, Crossing, Facing Northwest

Photograph 260. Stream S049, Substrate

Photograph 261. Stream S050, Upstream, Facing East

Photograph 262. Stream S050, Downstream, Facing Northwest

Photograph 263. Stream S050, Crossing, Facing West

Photograph 264. Stream S050, Substrate

Photograph 265. Stream S051, Upstream, Facing North

Photograph 266. Stream S051, Downstream, Facing Southwest

Photograph 267. Stream S051, Crossing, Facing West

Photograph 268. Stream S051, Substrate

Photograph 269. Stream S052, Upstream, Facing East

Photograph 270. Stream S052, Downstream, Facing West

Photograph 271. Stream S052, Crossing, Facing South

Photograph 272. Stream S052, Substrate

Photograph 273. Stream S053, Upstream, Facing Southwest

Photograph 274. Stream S053, Downstream, Facing East

Photograph 275. Stream S053, Crossing, Facing Northeast

Photograph 276. Stream S053, Substrate

Photograph 277. Stream S054, Upstream, Facing Northwest

Photograph 278. Stream S054, Downstream, Facing Southeast

Photograph 279. Stream S054, Crossing, Facing South

Photograph 280. Stream S054, Substrate

Photograph 281. Stream S055, Upstream, Facing Northeast

Photograph 282. Stream S055, Downstream, Facing South

Photograph 283. Stream S055, Crossing, Facing East

Photograph 284. Stream S055, Substrate

Photograph 285. Stream S056 (Painter Run), Upstream, Facing East

Photograph 286. Stream S056 (Painter Run), Downstream, Facing West

Photograph 287. Stream S056 (Painter Run), Crossing, Facing South

Photograph 288. Stream S056 (Painter Run), Substrate

Photograph 289. Stream S057, Upstream, Facing Southeast

Photograph 290. Stream S057, Downstream, Facing North

Photograph 291. Stream S057, Crossing, Facing East

Photograph 292. Stream S057, Substrate

Photograph 293. Stream S058, Upstream, Facing Northeast

Photograph 294. Stream S058, Downstream, Facing Southwest

Photograph 295. Stream S058, Crossing, Facing West

Photograph 296. Stream S058, Substrate

Photograph 297. Stream S059, Upstream, Facing Southwest

Photograph 298. Stream S059, Downstream, Facing Northeast

Photograph 299. Stream S059, Crossing, Facing East

Photograph 300. Stream S059, Substrate

Photograph 301. Stream S060, Upstream, Facing West

Photograph 302. Stream S060, Downstream, Facing East

Photograph 303. Stream S060, Crossing, Facing Southeast

Photograph 304. Stream S060, Substrate

Photograph 305. Pond 001, Facing North

Photograph 306. Pond 001, Facing Southeast

Photograph 307. Stormwater Erosion SWE-AGS-001, Facing East

Photograph 308. Stormwater Erosion SWE-AGS-001, Facing West

Photograph 309. Stormwater Erosion SWE-AGS-002, Facing East

Photograph 310. Stormwater Erosion SWE-AGS-002, Facing West

Photograph 311. Stormwater Erosion SWE-AGS-003, Facing North

Photograph 312. Stormwater Erosion SWE-AGS-003, Facing South

Photograph 313. Stormwater Erosion SWE-AGS-004, Facing North

Photograph 314. Stormwater Erosion SWE-AGS-004, Facing West

Photograph 315. Stormwater Erosion SWE-AGS-005, Facing East

Photograph 316. Stormwater Erosion SWE-AGS-005, Facing West

Photograph 317. Stormwater Erosion SWE-AGS-006, Facing East

Photograph 318. Stormwater Erosion SWE-AGS-006, Facing Northwest

Photograph 319. Stormwater Erosion SWE-AGS-007, Facing East

Photograph 320. Stormwater Erosion SWE-AGS-007, Facing West

Photograph 321. Stormwater Erosion SWE-AGS-008, Facing North

Photograph 322. Stormwater Erosion SWE-AGS-008, Facing South

Photograph 323. Stormwater Erosion SWE-AGS-009, Facing East

Photograph 324. Stormwater Erosion SWE-AGS-009, Facing West

Photograph 325. Stormwater Erosion SWE-AGS-010, Facing Southeast

Photograph 326. Stormwater Erosion SWE-AGS-010, Facing West

Photograph 327. Stormwater Erosion SWE-AGS-011, Facing East

Photograph 328. Stormwater Erosion SWE-AGS-011, Facing West

Photograph 329. Stormwater Erosion SWE-AGS-012, Facing Southwest

Photograph 330. Stormwater Erosion SWE-AGS-012, Facing Northeast

Photograph 331. Stormwater Erosion SWE-AGS-013, Facing North

Photograph 332. Stormwater Erosion SWE-AGS-013, Facing South

Photograph 333. Stormwater Erosion SWE-AGS-014, Facing North

Photograph 334. Stormwater Erosion SWE-AGS-014, Facing South

Photograph 335. Stormwater Erosion SWE-AGS-015, Facing North

Photograph 336. Stormwater Erosion SWE-AGS-015, Facing South

Photograph 337. Stormwater Erosion SWE-AGS-016, Facing East

Photograph 338. Stormwater Erosion SWE-AGS-016, Facing West

Photograph 339. Stormwater Erosion SWE-AGS-017, Facing North

Photograph 340. Stormwater Erosion SWE-AGS-017, Facing West

Photograph 341. Stormwater Erosion SWE-AGS-018, Facing East

Photograph 342. Stormwater Erosion SWE-AGS-018, Facing North

Photograph 343. Stormwater Erosion SWE-AGS-019, Facing North

Photograph 344. Stormwater Erosion SWE-AGS-019, Facing South

Photograph 345. Stormwater Erosion SWE-AGS-020, Facing North

Photograph 346. Stormwater Erosion SWE-AGS-020, Facing West

Photograph 347. Stormwater Erosion SWE-AGS-021, Facing North

Photograph 348. Stormwater Erosion SWE-AGS-021, Facing South

Photograph 349. Stormwater Erosion SWE-BLG-001, Facing East

Photograph 350. Stormwater Erosion SWE-BLG-001, Facing West

Photograph 351. Stormwater Erosion SWE-BLG-002, Facing East

Photograph 352. Stormwater Erosion SWE-BLG-002, Facing South

Photograph 353. Stormwater Erosion SWE-BLG-003, Facing Southeast

Photograph 354. Stormwater Erosion SWE-BLG-003, Facing West

Photograph 355. Stormwater Erosion SWE-BLG-004, Facing East

Photograph 356. Stormwater Erosion SWE-BLG-004, Facing West

Photograph 357. Stormwater Erosion SWE-BLG-005, Facing Northwest

Photograph 358. Stormwater Erosion SWE-BLG-005, Facing Southeast

Photograph 359. Representative Upland Habitat, Facing East

Photograph 360. Representative Upland Habitat, Facing East

Photograph 361. Representative Upland Habitat, Facing North

Photograph 362. Representative Upland Habitat, Facing West

APPENDIX B
Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 8/30/2023

Applicant/Owner: AEP State: OH Sampling Point: W001

Investigator(s): AGS/BLG Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Plain/Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR N Lat: 39.454285 Long: -81.670999 Datum: NAD 83

Soil Map Unit Name: Vin1B1; Vincent silt loam, 2 to 6 percent slopes NWI classification: None

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___
Hydric Soil Present? Yes ✓ No ___
Wetland Hydrology Present? Yes ✓ No ___

Is the Sampled Area within a Wetland? Yes ✓ No ___

Remarks:

W001-PEM-CAT1 is a PEM isolated wetland.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ✓ No ___

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

N/A

Remarks:

N/A

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

Sampling Point: W001

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

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

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Onoclea sensibilis	35	Y	FACW
2. Eutrochium purpureum	15	Y	FAC
3. Vernonia noveboracensis	15	Y	FACW
4. Euthamia graminifolia	10	N	FAC
5. Juncus effusus	10	N	FACW
6. Solidago rugosa	10	N	FAC
7. Verbena hastata	5	N	FACW
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = 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: 3 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[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 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** ___

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

None

SOIL

Sampling Point: W001

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-2	10YR 4/2	95	10YR 5/6	5	C	M-PL	CL	
2-16	10YR 5/2	85	10YR 5/6	15	C	M-PL	CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): -

Hydric Soil Present? Yes ✓ No ___

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 8/30/2023
Applicant/Owner: AEP State: OH Sampling Point: W002
Investigator(s): AGS/BLG Section, Township, Range: OH Not Divided into PLSS
Landform (hillslope, terrace, etc.): Plain/Depression Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): LRR N Lat: 39.453980 Long: -81.671582 Datum: NAD 83
Soil Map Unit Name: Vin1C1; Vincent silt loam, 6 to 12 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are “Normal Circumstances” present? Yes ✓ 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 ___	**Is the Sampled Area within a Wetland?**	**Yes** ✓ **No** ___
Hydric Soil Present?	Yes ✓ No ___		
Wetland Hydrology Present?	Yes ✓ No ___		

Remarks:
W002-PEM-CAT1 is a PEM isolated wetland situated in a corn field.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ✓ **No** ___

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

Remarks:
N/A

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

Sampling Point: W002

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

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

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Echinochloa crus-galli	50	Y	FAC
2. Cyperus strigosus	40	Y	FACW
3. Setaria pumila	20	N	FAC
4. Zea mays	20	N	UPL
5. Persicaria pensylvanica	5	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	135 = Total Cover		

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

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- _✓_ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[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 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** ___

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

None

SOIL Sampling Point: W002

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 5/2	90	10YR 5/6	5	C	M-PL	CL	
			10YR 6/6	5	C	M-PL		

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): -

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 8/30/2023

Applicant/Owner: AEP State: OH Sampling Point: W003

Investigator(s): AGS/BLG Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Plain/Depression Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR N Lat: 39.453621 Long: -81.671478 Datum: NAD 83

Soil Map Unit Name: Vin1B1; Vincent silt loam, 2 to 6 percent slopes NWI classification: None

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___
Hydric Soil Present?	Yes ✓	No ___
Wetland Hydrology Present?	Yes ✓	No ___

Is the Sampled Area within a Wetland? **Yes** ✓ **No** ___

Remarks:

W003-PEM-CAT1 is a PEM isolated wetland situated adjacent to a corn field.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ✓	No ___	Depth (inches): <0.5
Water Table Present?	Yes ___	No ✓	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No ✓	Depth (inches): ___

Wetland Hydrology Present? Yes ✓ **No** ___

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

N/A

Remarks:

Surface water is only present in a few areas.
Aquatic fauna: frogs.

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

Sampling Point: W003

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	0		

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

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Echinochloa crus-galli	25	Y	FAC
2. Setaria pumila	25	Y	FAC
3. Cyperus strigosus	20	Y	FACW
4. Phalaris arundinacea	20	Y	FACW
5. Eleocharis obtusa	15	N	OBL
6. Persicaria pensylvanica	10	N	FACW
7. Lysimachia nummularia	5	N	FACW
8.			
9.			
10.			
11.			
12.			
= Total Cover	120		

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

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	(A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
[✓ 2 - Dominance Test is >50%]
___ 3 - Prevalence Index is ≤3.0[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 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** ______

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

None

SOIL

Sampling Point: W003

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
0-6	2.5Y 5/1	90	7.5YR 5/6	10	C	M-PL	CL	
6-16	2.5Y 5/2	95	7.5YR 6/6	5	C	M-PL	CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): -

Hydric Soil Present? Yes ✓ **No** ___

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 8/30/2023

Applicant/Owner: AEP State: OH Sampling Point: UPL-001/002/003

Investigator(s): AGS/BLG Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Plain Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR N Lat: 39.453964 Long: -81.671081 Datum: NAD 83

Soil Map Unit Name: Vin1B1; Vincent silt loam, 2 to 6 percent slopes NWI classification: None

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** ✓
Hydric Soil Present?	Yes ___ No ✓	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:

UPL-001/002/003 Upland.

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)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No ✓	Depth (inches): ___	
Water Table Present?	Yes ___ No ✓	Depth (inches): ___	
Saturation Present? (includes capillary fringe)	Yes ___ No ✓	Depth (inches): ___	**Wetland Hydrology Present?** **Yes** ___ **No** ✓

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

N/A

Remarks:

N/A

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

Sampling Point: UPL-001/002/003

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Daucus carota	30	Y	UPL
2. Tridens flavus	25	Y	FACU
3. Plantago lanceolata	20	N	UPL
4. Dactylis glomerata	15	N	FACU
5. Euthamia graminifolia	10	N	FAC
6. Vernonia noveboracensis	10	N	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	110 = Total Cover		
Woody Vine Stratum (Plot size: 30' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	10	x 3 =	30
FACU species	40	x 4 =	160
UPL species	50	x 5 =	250
Column Totals:	110 (A)		460 (B)

Prevalence Index = B/A = 4.18

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 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** ✓

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

None

SOIL

Sampling Point: UPL-001/002/003

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-16	10YR 3/3	100					CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): -

Hydric Soil Present? **Yes** ______ **No** ✓

Remarks:
None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 8/30/2023
Applicant/Owner: AEP State: OH Sampling Point: W004
Investigator(s): AGS/BLG Section, Township, Range: OH Not Divided into PLSS
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0-2
Subregion (LRR or MLRA): LRR N Lat: 39.452331 Long: -81.671479 Datum: NAD 83
Soil Map Unit Name: New1AF; Newark silt loam, 0 to 3 percent slopes, frequently flooded NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ______	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ______
Hydric Soil Present?	Yes ✓ No ______	
Wetland Hydrology Present?	Yes ✓ No ______	

Remarks:
W004-PEM-CAT1 is a PEM abutting wetland situated adjacent to a corn field.

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)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ✓ **No** ______

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

Remarks:
None

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

Sampling Point: W004

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

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

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Phalaris arundinacea	80	Y	FACW
2. Asclepias syriaca	15	N	FACU
3. Calystegia sepium	10	N	FAC
4. Cyperus strigosus	5	N	FACW
5. Echinochloa crus-galli	5	N	FAC
6. Persicaria pensylvanica	5	N	FACW
7. Setaria viridis	5	N	UPL
8. Cirsium arvense	5	N	FACU
9.			
10.			
11.			
12.			
	130 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = 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:

✓ 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 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** ___

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

None

SOIL

Sampling Point: W004

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	2.5Y 4/2	95	10YR 6/6	5	C	M-PL	CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): -

Hydric Soil Present? Yes ✓ No ______

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 8/30/2023
Applicant/Owner: AEP State: OH Sampling Point: UPL-004
Investigator(s): AGS/BLG Section, Township, Range: OH Not Divided into PLSS
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1-3
Subregion (LRR or MLRA): LRR N Lat: 39.452188 Long: -81.671341 Datum: NAD 83
Soil Map Unit Name: New1AF; Newark silt loam, 0 to 3 percent slopes, frequently flooded NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** ______ **No** ✓
Hydric Soil Present?	Yes ______	No ✓	
Wetland Hydrology Present?	Yes ______	No ✓	

Remarks:
W004-PEM-CAT1 Upland.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ______ **No** ✓

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

Remarks:
N/A

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

Sampling Point: UPL-004

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	0		

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

1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	0		

Herb Stratum (Plot size: 5' radius)

1. Setaria viridis	30	Y	UPL
2. Setaria pumila	20	Y	UPL
3. Cirsium arvense	15	N	FACU
4. Phalaris arundinacea	15	N	FACW
5. Trifolium pratense	5	N	FACU
6. Cichorium intybus	5	N	FACU
7. Persicaria pensylvanica	5	N	FACW
8. Plantago lanceolata	5	N	UPL
9.			
10.			
11.			
12.			
= Total Cover	100		

Woody Vine Stratum (Plot size: 30' radius)

1. None			
2.			
3.			
4.			
5.			
6.			
= Total Cover	0		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	20	x 2 = 40
FAC species	0	x 3 = 0
FACU species	25	x 4 = 100
UPL species	55	x 5 = 275
Column Totals:	100 (A)	415 (B)

Prevalence Index = B/A = 4.15

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 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** ✓

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

None

SOIL

Sampling Point: UPL-004

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-16	10YR 4/3	100					CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): -

Hydric Soil Present? **Yes** ______ **No** ✔

Remarks:
None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/5/2023
Applicant/Owner: AEP State: OH Sampling Point: W005
Investigator(s): AGS/Ryan Lardner Section, Township, Range: OH Not Divided into PLSS
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 1-3
Subregion (LRR or MLRA): LRR N Lat: 39.459117 Long: -81.661766 Datum: NAD 83
Soil Map Unit Name: GkC; Gilpin-Summitville-Upshur complex, 6 to 12 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	**Is the Sampled Area within a Wetland?**	**Yes** ✓ **No** ____
Hydric Soil Present?	Yes ✓ No ____		
Wetland Hydrology Present?	Yes ✓ No ____		

Remarks:
W005-PEM-CATMOD2 is a PEM adjacent wetland.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____ No ✓	Depth (inches): ____	
Water Table Present?	Yes ____ No ✓	Depth (inches): ____	
Saturation Present? (includes capillary fringe)	Yes ____ No ✓	Depth (inches): ____	**Wetland Hydrology Present? Yes** ✓ **No** ____

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

Remarks:
None

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

Sampling Point: W005

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

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

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Impatiens capensis	35	Y	FACW
2. Vernonia noveboracensis	30	Y	FACW
3. Boehmeria cylindrica	15	N	FACW
4. Carex lurida	10	N	OBL
5. Solidago rugosa	10	N	FAC
6. Juncus articulatus	10	N	OBL
7. Juncus effusus	5	N	FACW
8.			
9.			
10.			
11.			
12.			
	115 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = 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:

✓ 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 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** ______

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

None

SOIL

Sampling Point: W005

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	95	10YR 5/6	5	C	M-PL	CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): -

Hydric Soil Present? **Yes** ✓ **No** ______

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/5/2023

Applicant/Owner: AEP State: OH Sampling Point: UPL-005

Investigator(s): AGS/RCL Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1-3

Subregion (LRR or MLRA): LRR N Lat: 39.459137 Long: -81.661699 Datum: NAD 83

Soil Map Unit Name: GkC; Gilpin-Summitville-Upshur complex, 6 to 12 percent slopes NWI classification: None

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks:

W005-PEM-CATMOD2 Upland.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ___ **No** ✓

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

N/A

Remarks:

N/A

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

Sampling Point: UPL-005

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	20	Y	FACU
2. Acer rubrum	15	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa multiflora	20	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20	= Total Cover	

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Microstegium vimineum	35	Y	FAC
2. Persicaria virginiana	10	Y	FAC
3. Vernonia noveboracensis	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Parthenocissus quinquefolia	15	Y	FACU
2. Toxicodendron radicans	10	Y	FAC
3.			
4.			
5.			
6.			
	25	= 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:	7	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	57.1	(A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	70	x 3 =	210
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	130 (A)		440 (B)

Prevalence Index = B/A = 3.38

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 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** ✓

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

None

SOIL

Sampling Point: UPL-005

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/3	100					CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): -

Hydric Soil Present? Yes ______ No ✓

Remarks:
None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/5/2023

Applicant/Owner: AEP State: OH Sampling Point: W006

Investigator(s): AGS/Ryan Lardner Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 1-3

Subregion (LRR or MLRA): LRR N Lat: 39.459987 Long: -81.646934 Datum: NAD 83

Soil Map Unit Name: GkE; Gilpin-Summitville-Upshur complex, 18 to 25 percent slopes NWI classification: None

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ___
Hydric Soil Present?	Yes ✓ No ___	
Wetland Hydrology Present?	Yes ✓ No ___	

Remarks:

W006-PEM-CAT2 is a PEM abutting wetland.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ✓ **No** ___

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

N/A

Remarks:

None

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

Sampling Point: W006

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

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

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Boehmeria cylindrica	40	Y	FACW
2. Impatiens capensis	30	Y	FACW
3. Persicaria virginiana	15	N	FAC
4. Carex lurida	10	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = 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:

✓ 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 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** ______

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

None

SOIL

Sampling Point: W006

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 4/2	90	10YR 5/6	10	C	M-PL	CL	
4-16	10YR 4/1	80	10YR 5/6	10	C	M-PL	CL	
			7.5YR 4/4	10	C	M		

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): -

Hydric Soil Present? **Yes** ✓ **No** ______

Remarks:
None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/5/2023

Applicant/Owner: AEP State: OH Sampling Point: UPL-006

Investigator(s): AGS/RCL Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1-3

Subregion (LRR or MLRA): LRR N Lat: 39.460000 Long: -81.647119 Datum: NAD 83

Soil Map Unit Name: Omu1C1; Omulga silt loam, 6 to 12 percent slopes NWI classification: None

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

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are “Normal Circumstances” present? Yes ✓ 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 ✓
Hydric Soil Present?	Yes ______	No ✓
Wetland Hydrology Present?	Yes ______	No ✓

Is the Sampled Area within a Wetland? **Yes** ______ **No** ✓

Remarks:

W006-PEM-CAT2 Upland.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): ____________
Water Table Present?	Yes _____	No ✓	Depth (inches): ____________
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): ____________

Wetland Hydrology Present? **Yes** ______ **No** ✓

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

N/A

Remarks:

N/A

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

Sampling Point: UPL-006

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0	= Total Cover	
Herb Stratum (Plot size: 5' radius)			
1. Dactylis glomerata	40	Y	FACU
2. Glechoma hederacea	30	Y	FACU
3. Solidago candensis	20	N	FACU
4. Trifolium repens	10	N	FACU
5. Juncus tenuis	5	N	FAC
6. Persicaria pensylvanica	5	N	FACW
7.			
8.			
9.			
10.			
11.			
12.			
	110	= Total Cover	
Woody Vine Stratum (Plot size: 30' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	5	x 3 =	15
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	110 (A)		425 (B)

Prevalence Index = B/A = 3.86

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 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** ✓

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

None

SOIL

Sampling Point: UPL-006

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
0-5	10YR 4/3	100					CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Compact clay
Depth (inches): 5

Hydric Soil Present? Yes ______ **No** ✓

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/5/2023

Applicant/Owner: AEP State: OH Sampling Point: W007

Investigator(s): AGS/Ryan Lardner Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Plain/Depression Local relief (concave, convex, none): Concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 39.462170 Long: -81.641925 Datum: NAD 83

Soil Map Unit Name: Gal2C1; Gallia loam, 6 to 12 percent slopes NWI classification: None

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ___
Hydric Soil Present?	Yes ✓ No ___	
Wetland Hydrology Present?	Yes ✓ No ___	

Remarks:

W007-PEM-CAT1 is a PEM isolated wetland situated in a maintained field. Wetland vegetation appears to occasionally be mowed.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ **No** ___

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

N/A

Remarks:

None

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

Sampling Point: W007

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. Onoclea sensibilis	40	Y	FACW
2. Echinochloa crus-galli	30	Y	FAC
3. Cyperus strigosus	20	N	FACW
4. Setaria pumila	10	N	UPL
5. Plantago lanceolata	5	N	UPL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
_✓_ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[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 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** ___

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

None

SOIL

Sampling Point: W007

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
0-2	10YR 3/3	100					L	
2-16	2.5Y 4/1	90	7.5YR 5/6	10	C	M-PL	CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): -

Hydric Soil Present? Yes ✓ No ______

Remarks:
None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/5/2023

Applicant/Owner: AEP State: OH Sampling Point: UPL-007

Investigator(s): AGS/RCL Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 39.462108 Long: -81.641729 Datum: NAD 83

Soil Map Unit Name: Gal2C1; Gallia loam, 6 to 12 percent slopes NWI classification: None

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

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** ______ **No** ✓
Hydric Soil Present?	Yes ______	No ✓	
Wetland Hydrology Present?	Yes ______	No ✓	

Remarks:

W007-PEM-CAT1 Upland.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): ____________
Water Table Present?	Yes _____	No ✓	Depth (inches): ____________
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): ____________

Wetland Hydrology Present? Yes ______ **No** ✓

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

N/A

Remarks:

N/A

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

Sampling Point: UPL-007

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
= Total Cover	0		

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

	Absolute % Cover	Dominant Species?	Indicator Status
1. Rubus occidentalis	15	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
= Total Cover	15		

Herb Stratum (Plot size: 5' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Trifolium pratense	35	Y	FACU
2. Glechoma hederacea	30	Y	FACU
3. Setaria pumila	30	Y	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
= Total Cover	95		

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
= Total Cover	0		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	30	x 5 =	150
Column Totals:	110 (A)		470 (B)

Prevalence Index = B/A = 4.27

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 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** ✓

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

None

SOIL

Sampling Point: UPL-007

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-5	10YR 3/3	100					CL	

[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)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Compact clay

Depth (inches): 5

Hydric Soil Present? Yes ______ No ✓

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/7/2023

Applicant/Owner: AEP State: OH Sampling Point: W008

Investigator(s): AGS/AKG Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Toe of slope Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR N Lat: 39.476265 Long: -81.619551 Datum: NAD 83

Soil Map Unit Name: WzC; Woodsfield-Zanesville silt loams, 6 to 12 percent slopes NWI classification: None

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___	**Is the Sampled Area within a Wetland?**	**Yes** ✓ **No** ___
Hydric Soil Present?	Yes ✓ No ___		
Wetland Hydrology Present?	Yes ✓ No ___		

Remarks:

W008-PEM-CAT1 is a PEM adjacent wetland next to a cornfield.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ **No** ___

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

N/A

Remarks:

None

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

Sampling Point: W008

Tree Stratum (Plot size: 30' radius)

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

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

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		

Herb Stratum (Plot size: 5' radius)

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Carex lurida	20	Y	OBL
2. Cyperus strigosus	15	Y	FACW
3. Polygonum sagittatum	15	Y	OBL
4. Juncus effusus	10	N	FACW
5. Impatiens capensis	10	N	FACW
6. Onoclea sensibilis	10	N	FACW
7. Typha latifolia	5	N	OBL
8. Carex vulpinoidea	5	N	OBL
9. Persicaria pensylvanica	5	N	FACW
10. Apocynum cannabinum	5	N	FACU
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)

Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = 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:

- ✓ 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 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** ______

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

None

SOIL

Sampling Point: W008

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-1	10YR 3/3	100					L	
1-16	2.5Y 4/2	90	10YR 5/6	10	C	M-PL	CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): -

Hydric Soil Present? **Yes** ✓ **No** ______

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/7/2023
Applicant/Owner: AEP State: OH Sampling Point: UPL-008
Investigator(s): AGS/RCL Section, Township, Range: OH Not Divided into PLSS
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2-5
Subregion (LRR or MLRA): LRR N Lat: 39.476055 Long: -81.619727 Datum: NAD 83
Soil Map Unit Name: WzC; Woodsfield-Zanesville silt loams, 6 to 12 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks:
W008-PEM-CAT1 Upland.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ___ **No** ✓

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

Remarks:
N/A

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

Sampling Point: UPL-008

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	30	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		

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

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		

Herb Stratum (Plot size: 5' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Tridens flavus	30	Y	FACU
2. Dactylis glomerata	30	Y	FACU
3. Solidago canadensis	15	N	FACU
4. Solanum carolinense	10	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals:	115 (A)		460 (B)

Prevalence Index = B/A = 4.00

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 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** ✓

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

None

SOIL

Sampling Point: UPL-008

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
0-6	10YR 4/3	100					CL	

[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)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Compact clay

Depth (inches): 6

Hydric Soil Present? **Yes** ______ **No** ✔

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/7/2023
Applicant/Owner: AEP State: OH Sampling Point: W009
Investigator(s): AGS/AKG Section, Township, Range: OH Not Divided into PLSS
Landform (hillslope, terrace, etc.): Hillslope/Floodplain Local relief (concave, convex, none): Concave Slope (%): 1-3
Subregion (LRR or MLRA): LRR N Lat: 39.476145 Long: -81.622403 Datum: NAD 83
Soil Map Unit Name: WzC; Woodsfield-Zanesville silt loams, 6 to 12 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are “Normal Circumstances” present? Yes ✓ 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 ______	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ______
Hydric Soil Present?	Yes ✓ No ______	
Wetland Hydrology Present?	Yes ✓ No ______	

Remarks:
W009-PEM-CAT1 is a PEM abutting wetland situated in a cornfield.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ✓ **No** ______

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

Remarks:
None

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

Sampling Point: W009

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

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

	Absolute % Cover	Dominant Species?	Indicator Status
1. Rubus allegheniensis	15	Y	FACU
2. Rosa multiflora	5	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20 = Total Cover		

Herb Stratum (Plot size: 5' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Solidago rugosa	35	Y	FAC
2. Impatiens capensis	30	Y	FACW
3. Polygonum sagittatum	15	N	OBL
4. Ludwigia alternifolia	15	N	FACW
5. Carex cristatella	5	N	FACW
6. Phytolacca americana	5	N	FACU
7. Vernonia noveboracensis	5	N	FACW
8.			
9.			
10.			
11.			
12.			
	110 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	15	x 1 = 15
FACW species	55	x 2 = 110
FAC species	35	x 3 = 105
FACU species	25	x 4 = 100
UPL species	0	x 5 = 0
Column Totals:	130 (A)	330 (B)

Prevalence Index = B/A = 2.54

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 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** ______

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

None

SOIL

Sampling Point: W009

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-7	2.5Y 4/2	95	10YR 5/6	5	C	M-PL	CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Compact clay
Depth (inches): 7

Hydric Soil Present? **Yes** ✓ **No** ______

Remarks:
None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/7/2023
Applicant/Owner: AEP State: OH Sampling Point: W010
Investigator(s): AGS/AKG Section, Township, Range: OH Not Divided into PLSS
Landform (hillslope, terrace, etc.): Hillslope/Floodplain Local relief (concave, convex, none): Concave Slope (%): 1-3
Subregion (LRR or MLRA): LRR N Lat: 39.476185 Long: -81.622740 Datum: NAD 83
Soil Map Unit Name: WzC; Woodsfield-Zanesville silt loams, 6 to 12 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ______	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ______
Hydric Soil Present?	Yes ✓	No ______	
Wetland Hydrology Present?	Yes ✓	No ______	

Remarks:
W010-PEM-CAT1 is a PEM abutting wetland situated in a cornfield.

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)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ✓ **No** ______

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

Remarks:
None

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

Sampling Point: W010

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

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

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Impatiens capensis	35	Y	FACW
2. Vernonia noveboracensis	10	Y	FACW
3. Phytolacca americana	10	Y	FACU
4. Persicaria pensylvanica	10	Y	FACW
5. Polygonum sagittatum	10	Y	OBL
6. Echinochloa crus-galli	10	Y	FAC
7. Ludwigia alternifolia	5	N	FACW
8. Ambrosia artemisiifolia	5	N	FACU
9. Rubus allegheniensis	5	N	FACU
10.			
11.			
12.			
	100 = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
✔ 2 - Dominance Test is >50%
___ 3 - Prevalence Index is ≤3.0[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 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** ___

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

None

SOIL

Sampling Point: W010

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-8	2.5Y 4/2	95	10YR 5/6	5	C	M-PL	CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Compact clay

Depth (inches): 8

Hydric Soil Present? Yes ✓ No ______

Remarks:

None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/7/2023

Applicant/Owner: AEP State: OH Sampling Point: UPL-009/010

Investigator(s): AGS/AKG Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 39.476111 Long: -81.622876 Datum: NAD 83

Soil Map Unit Name: WzC; Woodsfield-Zanesville silt loams, 6 to 12 percent slopes NWI classification: None

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

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are “Normal Circumstances” present? Yes ✓ 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 ✓
Hydric Soil Present?	Yes ______	No ✓
Wetland Hydrology Present?	Yes ______	No ✓

Is the Sampled Area within a Wetland? Yes ______ No ✓

Remarks:

W009/010 Upland.

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)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): ____________
Water Table Present?	Yes _____	No ✓	Depth (inches): ____________
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): ____________

Wetland Hydrology Present? Yes ______ No ✓

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

N/A

Remarks:

None

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

Sampling Point: UPL-009/010

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	15	Y	FACU
2. Liriodendron tulipifera	10	Y	FACU
3. Platanus occidentalis	5	N	FACW
4.			
5.			
6.			
7.			
8.			
	30 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa multiflora	35	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	35 = Total Cover		

Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa multiflora	10	Y	FACU
2. Persicaria virginiana	10	Y	FAC
3. Polystichum acrostichoides	10	Y	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	30 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. Parthenocissus quinquefolia	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
	10 = 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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	10	x 3 =	30
FACU species	90	x 4 =	360
UPL species	0	x 5 =	0
Column Totals:	105 (A)		400 (B)

Prevalence Index = B/A = 3.81

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 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** ✓

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

None

SOIL

Sampling Point: UPL-009/010

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	10YR 3/3	100					CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Compact clay
Depth (inches): 6

Hydric Soil Present? **Yes** ______ **No** ✓

Remarks:
None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/7/2023

Applicant/Owner: AEP State: OH Sampling Point: W011

Investigator(s): AGS/AKG Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 2-5

Subregion (LRR or MLRA): LRR N Lat: 39.476892 Long: -81.626841 Datum: NAD 83

Soil Map Unit Name: UTG; Upshur association, very stony, 25 to 70 percent slopes NWI classification: None

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___

Hydric Soil Present? Yes ✓ No ___

Wetland Hydrology Present? Yes ✓ No ___

Is the Sampled Area within a Wetland? **Yes** ✓ **No** ___

Remarks:

W011-PEM-CAT1 is a PEM adjacent wetland situated on an old road.

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)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ **No** ___

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

N/A

Remarks:

None

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

Sampling Point: W011

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		

Herb Stratum (Plot size: 5' radius)			
1. Pilea pumila	20	Y	FACW
2. Carex vulpinoidea	20	Y	OBL
3. Solidago rugosa	15	Y	FAC
4. Impatiens capensis	10	N	FACW
5. Vernonia noveboracensis	10	N	FACW
6. Cyperus strigosus	10	N	FACW
7. Juncus effusus	5	N	FACW
8. Juncus articulatus	5	N	OBL
9. Solidago canadensis	5	N	FACU
10. Poa pratensis	5	N	FACU
11. Conoclinium coelestinum	5	N	FAC
12.			
	110 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)			
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = 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: 3 (B)

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[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 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** ______

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

None

SOIL

Sampling Point: W011

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
0-10	2.5Y 4/1	90	10YR 5/6	5	C	M-PL	CL	
			10YR 6/6	5	C	M-PL		

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Compact clay
Depth (inches): 10

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

Remarks:
None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 9/7/2023

Applicant/Owner: AEP State: OH Sampling Point: UPL-011

Investigator(s): AGS/AKG Section, Township, Range: OH Not Divided into PLSS

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 1-3

Subregion (LRR or MLRA): LRR N Lat: 39.475951 Long: -81.627701 Datum: NAD 83

Soil Map Unit Name: Omu1C1; Omulga silt loam, 6 to 12 percent slopes NWI classification: None

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** ✓
Hydric Soil Present?	Yes ___ No ✓	
Wetland Hydrology Present?	Yes ___ No ✓	

Remarks:

W011-PEM-CAT1 Upland.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ___ **No** ✓

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

N/A

Remarks:

None

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

Sampling Point: UPL-011

Tree Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		

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

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		

Herb Stratum (Plot size: 5' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Solidago canadensis	70	Y	FACU
2. Poa pratensis	10	N	FACU
3. Vernonia noveboracensis	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85 = Total Cover		

Woody Vine Stratum (Plot size: 30' radius)

	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	5	x 2 = 10
FAC species	0	x 3 = 0
FACU species	90	x 4 = 360
UPL species	0	x 5 = 0
Column Totals:	95 (A)	370 (B)

Prevalence Index = B/A = 3.89

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 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** ✓

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

None

SOIL

Sampling Point: UPL-011

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
0-5	10YR 3/3	100					CL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Compact clay
Depth (inches): 5

Hydric Soil Present? Yes ______ **No** ✔

Remarks:
None

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/05/2023
Applicant/Owner: AEP State: OH Sampling Point: W012
Investigator(s): Bethany Gregory Section, Township, Range: Watertown
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): ____
Subregion (LRR or MLRA): LRR-N Lat: 39.476489 Long: -81.616870 Datum: NAD83
Soil Map Unit Name: UpD:Upshur silty clay loam, 12 to 18 percent slopes (536550) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Wetland data for W012-PEM-CATMOD2 located within a young scrub/shrub woodlot along an intermittent stream.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Remarks:
Hydrological indicators are C1, C4, D2, and D5.

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

Sampling Point: W012

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer negundo	15	No	FAC
2. Fraxinus pennsylvanica	20	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	35 = Total Cover		

Herb Stratum (Plot size: 5' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Polygonum pennsylvanicum	25	Yes	FACW
2. Impatiens capensis	50	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	75 = Total Cover		

Woody Vine Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	3	x 2 =	6
FAC species	1	x 3 =	3
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	4 (A)		9 (B)

Prevalence Index = B/A = 2.25

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 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** ___

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

Hydrophytic vegetation is present.

SOIL Sampling Point: W012

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	100	N/A					No redox observed

[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)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ______

Hydric Soil Present? Yes ✓ No ______

Remarks:

Hydric soil indicator is F3.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/05/2023
Applicant/Owner: AEP State: OH Sampling Point: UPL-012
Investigator(s): Bethany Gregory Section, Township, Range: Watertown
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): ___
Subregion (LRR or MLRA): LRR-N Lat: 39.476405 Long: -81.616815 Datum: NAD83
Soil Map Unit Name: UpD:Upshur silty clay loam, 12 to 18 percent slopes (536550) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** ___ **No** ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ___	No ✓	

Remarks:
Upland data for W012-PEM-CATMOD2 located within a young scrub/shrub woodlot along an intermittent stream.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ___ **No** ✓

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

Remarks:
Hydrological indicators are not present.

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

Sampling Point: UPL-012

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	15	No	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	15 = Total Cover		

Herb Stratum (Plot size: 5' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa multiflora	25	Yes	FACU
2. Rubus allegheniensis	20	Yes	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	45 = Total Cover		

Woody Vine Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Parthenocissus quinquefolia	25	Yes	FACU
2. Lonicera japonica	15	No	FACU
3.			
4.			
5.			
6.			
	40 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		x 1 =
FACW species		x 2 =
FAC species		x 3 =
FACU species	5	x 4 = 20
UPL species		x 5 =
Column Totals:	5 (A)	20 (B)

Prevalence Index = B/A = 4

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 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** ✔

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

Hydrophytic vegetation is not present.

SOIL

Sampling Point: UPL-012

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
12-16	7.5 YR 6/6	100	N/A					
0-12								Bedrock

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Rock
Depth (inches): 0-12

Hydric Soil Present? Yes ______ **No** ✓

Remarks:

Hydric soil is not present.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/05/2023
Applicant/Owner: AEP State: OH Sampling Point: W013
Investigator(s): Bethany Gregory Section, Township, Range: Watertown
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR or MLRA): LRR-N Lat: 39.473661 Long: -81.618759 Datum: NAD83
Soil Map Unit Name: GkF: Gilpin-Summitville-Upshur complex, 25 to 35 percent slopes (536496) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ___
Hydric Soil Present?	Yes ✓	No ___	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks:

Wetland data for W013-PEM-CAT1 located on the edge of maintained pasture and scrub/shrub habitat at the start of an intermittent stream.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ______
Water Table Present? Yes ___ No ✓ Depth (inches): ______
Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ______

Wetland Hydrology Present? **Yes** ✓ **No** ___

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

N/A

Remarks:

Hydrological indicators are C3, D2, and D5.

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

Sampling Point: W013

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' r)			
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0	= Total Cover	

Herb Stratum (Plot size: 5' r)			
1. Typha latifolia	55	Yes	OBL
2. Vernonia gigantea	10	No	FAC
3. Carex straminea	10	No	OBL
4. Impatiens capensis	15	No	FACW
5. Eutrochium purpureum	10	NO	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: 30' r)			
1. Absent			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	1	x 2 =	2
FAC species	2	x 3 =	6
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	5 (A)		10 (B)

Prevalence Index = B/A = 2

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 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** ____

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: W013

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
6-16	10YR 4/2	75	7.5YR 5/6	25	C	M	SL	
0-6								Bedrock

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
✓ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): ______

Hydric Soil Present? **Yes** ✓ **No** ______

Remarks:

Hydric soil indicator is F6.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/05/2023
Applicant/Owner: AEP State: OH Sampling Point: UPL-013
Investigator(s): Bethany Gregory Section, Township, Range: Watertown
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): ______
Subregion (LRR or MLRA): LRR-N Lat: 39.473338 Long: -81.618692 Datum: NAD83
Soil Map Unit Name: GkF: Gilpin-Summitville-Upshur complex, 25 to 35 percent slopes (536496) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓
Hydric Soil Present? Yes ______ No ✓
Wetland Hydrology Present? Yes ______ No ✓

Is the Sampled Area within a Wetland? Yes ______ No ✓

Remarks:

Upland data for W013-PEM-CAT1 located on the edge of maintained pasture and scrub/shrub habitat.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ______ No ✓

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

N/A

Remarks:

Hydrological indicators are not present.

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

Sampling Point: UPL-013

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus americana	15	No	FAC
2. Oxydendrum arboreum	15	No	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30 = Total Cover		

Herb Stratum (Plot size: 5' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa multiflora	35	Yes	FACU
2. Lindera benzoin	25	Yes	FAC
3. Rubus occidentalis	25	Yes	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85 = Total Cover		

Woody Vine Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC:	0	(A)
Total Number of Dominant Species Across All Strata:	3	(B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	0	(A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species	2	x 3 =	6
FACU species	1	x 4 =	4
UPL species	2	x 5 =	10
Column Totals:	5 (A)		20 (B)

Prevalence Index = B/A = 4

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 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** ✓

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

Hydrophytic vegetation is not present.

SOIL

Sampling Point: UPL-013

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
12-16	7.5 YR 6/6	100	N/A					
0-12								Bedrock

[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)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 0-12

Hydric Soil Present? Yes ______ **No** ✓

Remarks:

Hydric soil is not present.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/06/2023
Applicant/Owner: AEP State: OH Sampling Point: W014
Investigator(s): Bethany Gregory Section, Township, Range: Watertown
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): ___
Subregion (LRR or MLRA): LRR-N Lat: 39.461059 Long: -81.637394 Datum: NAD83
Soil Map Unit Name: GkE: Gilpin-Summitville-Upshur complex, 18 to 25percent slopes (536494) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)
Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___	**Is the Sampled Area within a Wetland?**	**Yes** ✓ **No** ___
Hydric Soil Present?	Yes ✓ No ___		
Wetland Hydrology Present?	Yes ✓ No ___		

Remarks:
Wetland data for W014-PEM-CAT1 located within pasture beside a paved road and South Branch Wolf Creek.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___ No ✓	Depth (inches): ___		
Water Table Present?	Yes ___ No ✓	Depth (inches): ___		
Saturation Present? (includes capillary fringe)	Yes ___ No ✓	Depth (inches): ___	**Wetland Hydrology Present?**	**Yes** ✓ **No** ___

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

Remarks:
Hydrological indicators are C3, D2, and D5.

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

Sampling Point: W014

Tree Stratum (Plot size: 30' r)

	Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Absent			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
	= Total Cover	0		

Sapling/Shrub Stratum (Plot size: 15' r)

	Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Absent			
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
	= Total Cover	0		

Herb Stratum (Plot size: 5' r)

	Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Acorus americanus	40	Yes	OBL
2.	Polygonum pennsylvanicum	25	Yes	FACW
3.	Xanthium strumarium	10	No	FAC
4.	Impatiens capensis	15	No	FACW
5.	Leersia oryzoides	10	NO	OBL
6.				
7.				
8.				
9.				
10.				
11.				
12.				
	= Total Cover	100		

Woody Vine Stratum (Plot size: 30' r)

	Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1.	Absent			
2.				
3.				
4.				
5.				
6.				
	= Total Cover	0		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	2	x 2 =	4
FAC species	1	x 3 =	3
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	5 (A)		9 (B)

Prevalence Index = B/A = 1.8

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 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** ___

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: W014

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
2-16	10YR 4/1	75	7.5YR 4/4	25	C	M	SL	
0-2								Bedrock

[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)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Bedrock

Depth (inches): 0-2

Hydric Soil Present? **Yes** ✓ **No** ______

Remarks:

Hydric soil indicator is F6.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/06/2023

Applicant/Owner: AEP State: OH Sampling Point: UPL-014

Investigator(s): Bethany Gregory Section, Township, Range: Watertown

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR-N Lat: 39.461151 Long: -81.637585 Datum: NAD83

Soil Map Unit Name: GkE: Gilpin-Summitville-Upshur complex, 18 to 25percent slopes (536494) NWI classification: N/A

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

Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are “Normal Circumstances” present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** ______ **No** ✓
Hydric Soil Present?	Yes ______	No ✓	
Wetland Hydrology Present?	Yes ______	No ✓	

Remarks:

Upland data for W014-PEM-CAT1 located within pasture beside a paved road and South Branch Wolf Creek.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): ____________
Water Table Present?	Yes _____	No ✓	Depth (inches): ____________
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): ____________

Wetland Hydrology Present? Yes ______ **No** ✓

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

N/A

Remarks:

Hydrological indicators are not present.

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

Sampling Point: UPL-014

Tree Stratum (Plot size: 30' r)

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' r)

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		

Herb Stratum (Plot size: 5' r)

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Daucus carota	25	Yes	UPL
2. Rosa multiflora	20	No	FACU
3. Solanum carolinense	10	No	FACU
4. Trifolium repens	10	No	FACU
5. Dactylis glomerata	35	Yes	FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30' r)

Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	4	x 4 =	16
UPL species	1	x 5 =	5
Column Totals:	5 (A)		21 (B)

Prevalence Index = B/A = 4.2

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 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** ✓

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

Hydrophytic vegetation is not present.

SOIL

Sampling Point: UPL-014

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
12-16	10YR 5/4	100						
0-12								Bedrock

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)

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

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: Bedrock

Depth (inches): 0-12

Hydric Soil Present? Yes ✓ **No** ______

Remarks:

Hydric soil is not present.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/06/2023

Applicant/Owner: AEP State: OH Sampling Point: W015

Investigator(s): Bethany Gregory Section, Township, Range: Watertown

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR-N Lat: 39.460478 Long: -81.639754 Datum: NAD83

Soil Map Unit Name: GkE: Gilpin-Summitville-Upshur complex, 18 to 25 percent slopes (536494) NWI classification: N/A

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___	**Is the Sampled Area within a Wetland?**	**Yes** ✓ **No** ___
Hydric Soil Present?	Yes ✓ No ___		
Wetland Hydrology Present?	Yes ✓ No ___		

Remarks:

Wetland data for W015-PEM-CAT1 located within young woods/scrub/shrub area with an intermittent stream adjacent.

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)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ✓ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ **No** ___

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

N/A

Remarks:

Hydrological indicators are C3, C4, D2, and D5.

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

Sampling Point: W015

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0 = Total Cover		

Herb Stratum (Plot size: 5' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Polygonum pennsylvanicum	50	Yes	FACW
2. Impatiens capensis	25	Yes	FACW
3. Urtica dioica	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85 = Total Cover		

Woody Vine Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species	2	x 2 =	4
FAC species		x 3 =	
FACU species	1	x 4 =	4
UPL species		x 5 =	
Column Totals:	3 (A)		8 (B)

Prevalence Index = B/A = 2.6

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 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** ___

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: W015

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-16	10YR 4/1	70	7.5YR 4/6	30	C	M	SL	

[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)
- ☐ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ☐ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ☐ Umbric Surface (F13) **(MLRA 136, 122)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ☐ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches):

Hydric Soil Present? **Yes** ✓ **No**

Remarks:

Hydric soil indicator is F6.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/06/2023
Applicant/Owner: AEP State: OH Sampling Point: UPL-015
Investigator(s): Bethany Gregory Section, Township, Range: Watertown
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): ______
Subregion (LRR or MLRA): LRR-N Lat: 39.460501 Long: -81.639857 Datum: NAD83
Soil Map Unit Name: GkE: Gilpin-Summitville-Upshur complex, 18 to 25 percent slopes (536494) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	**Is the Sampled Area within a Wetland?** **Yes** ______ **No** ✓
Hydric Soil Present?	Yes ______	No ✓	
Wetland Hydrology Present?	Yes ______	No ✓	

Remarks:
Upland data for W015-PEM-CAT1 located within young woods/scrub/shrub area.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ______ **No** ✓

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

Remarks:
Hydrological indicators are not present.

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

Sampling Point: UPL-015

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0	= Total Cover	

Herb Stratum (Plot size: 5' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa multiflora	40	Yes	FACU
2. Dactylis glomerata	20	No	FACU
3. Glechoma hederacea	40	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	

Woody Vine Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	3	x 4 =	12
UPL species		x 5 =	
Column Totals:	3	(A)	12 (B)

Prevalence Index = B/A = 4

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 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** ✔

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

Hydrophytic vegetation is not present.

SOIL

Sampling Point: UPL-015

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/4	100						

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ______

Hydric Soil Present? Yes ______ **No** ✓

Remarks:

Hydric soil is not present.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/06/2023

Applicant/Owner: AEP State: OH Sampling Point: W016

Investigator(s): Bethany Gregory Section, Township, Range: Watertown

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR or MLRA): LRR-N Lat: 39.460554 Long: -81.640132 Datum: NAD83

Soil Map Unit Name: GkE: Gilpin-Summitville-Upshur complex, 18 to 25 percent slopes (536494) NWI classification: N/A

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

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___	**Is the Sampled Area within a Wetland?** **Yes** ✓ **No** ___
Hydric Soil Present?	Yes ✓	No ___	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks:

Wetland data for W016-PEM-CAT1 located within young woods/scrub/shrub area with an intermittent stream abutting it.

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)
✓ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
✓ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ✓ **No** ___

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

N/A

Remarks:

Hydrological indicators are C3, C4, D2, and D5.

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

Sampling Point: W016

Tree Stratum (Plot size: 30' r)	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' r)			
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0	= Total Cover	

Herb Stratum (Plot size: 5' r)			
1. Polygonum pennsylvanicum	80	Yes	FACW
2. Impatiens capensis	20	Yes	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: 30' r)			
1. Absent			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = 2

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 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** ___

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

Hydrophytic vegetation is present.

SOIL

Sampling Point: W016

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/1	70	7.5YR 5/6	30	C	M	SL	

[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)
___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Dark Surface (S7)
___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
___ Thin Dark Surface (S9) **(MLRA 147, 148)**
___ Loamy Gleyed Matrix (F2)
✓ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
___ Umbric Surface (F13) **(MLRA 136, 122)**
___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None
Depth (inches): ______

Hydric Soil Present? **Yes** ✓ **No** ______

Remarks:

Hydric soil indicator is F3.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: West Watertown-Watertown City/County: Washington County Sampling Date: 09/06/2023
Applicant/Owner: AEP State: OH Sampling Point: UPL-016
Investigator(s): Bethany Gregory Section, Township, Range: Watertown
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): ______
Subregion (LRR or MLRA): LRR-N Lat: 39.460491 Long: -81.640253 Datum: NAD83
Soil Map Unit Name: GkE: Gilpin-Summitville-Upshur complex, 18 to 25 percent slopes (536494) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ______ (If no, explain in Remarks.)
Are Vegetation ______, Soil ______, or Hydrology ______ significantly disturbed? Are “Normal Circumstances” present? Yes ✓ 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 ______	**Is the Sampled Area within a Wetland?** **Yes** ______ **No** ✓
Hydric Soil Present?	Yes ______	No ______	
Wetland Hydrology Present?	Yes ______	No ______	

Remarks:
Upland data for W016-PEM-CAT1 located within young woods/scrub/shrub area.

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)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes ______ **No** ✓

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

Remarks:
Hydrological indicators are not present.

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

Sampling Point: UPL-016

Tree Stratum (Plot size: 30' r)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15' r)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0	= Total Cover	

Herb Stratum (Plot size: 5' r)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Rosa multiflora	50	Yes	FACU
2. Glechoma hederacea	20	Yes	FACU
3. Trifolium repens	10	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	

Woody Vine Stratum (Plot size: 30' r)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Absent			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	3	x 4 =	12
UPL species		x 5 =	
Column Totals:	3	(A)	12 (B)

Prevalence Index = B/A = 4

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 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** ✔

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

Hydrophytic vegetation is not present.

SOIL

Sampling Point: UPL-016

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-16	10YR 5/4	100						

[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)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**
- ___ Red Parent Material (F21) **(MLRA 127, 147)**

Indicators for Problematic Hydric Soils[3]:

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

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ______

Hydric Soil Present? **Yes** ______ **No** ✓

Remarks:

Hydric soil is not present.

APPENDIX C

Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-001 / W001

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

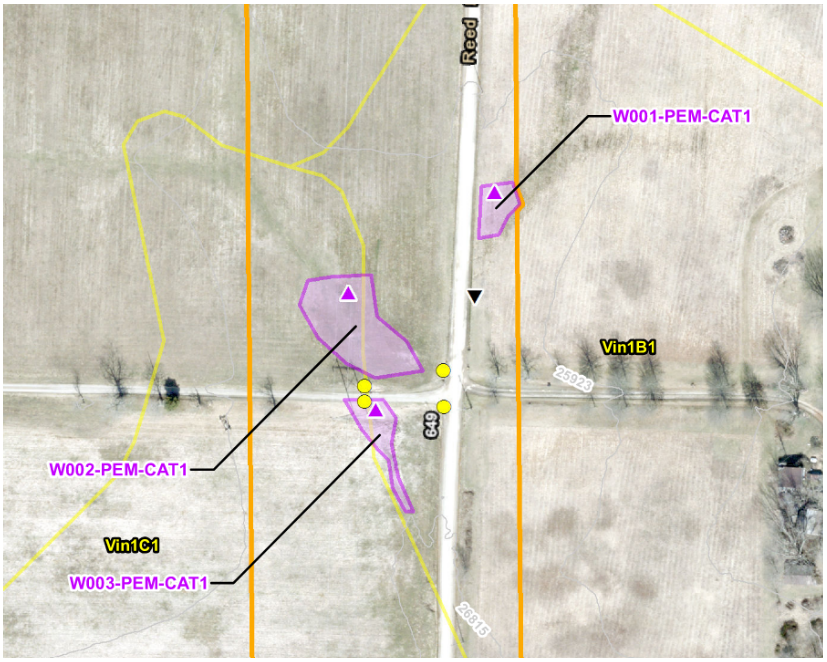
Lat/Long or UTM Coordinate	39.454285, -81.670999	
USGS Quad Name	Watertown	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040901	
Site Visit	8/30/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	Vin1B1; Vincent silt loam, 2 to 6 percent slopes	
Delineation report/map	X	

Name of Wetland:
W001

Wetland Size (acres, hectares):	0.045672 acres

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

North



Comments, Narrative Discussion, Justification of Category Changes:
N/A

Final score :	24.5	**Category:**	Category 1

Scoring Boundary Worksheet

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

#	**Steps in properly establishing scoring boundaries**	**done?**	**not applicable**
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

1	1
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

8	9
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

Check all disturbances observed

☐ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input

☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☑ other Farming

11.5	20.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

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

20.5
subtotal this page

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

20.5
subtotal first page

0	20.5
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

4	24.5
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

24.5

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	11.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	4	
	TOTAL SCORE	24.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-002 / W002

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

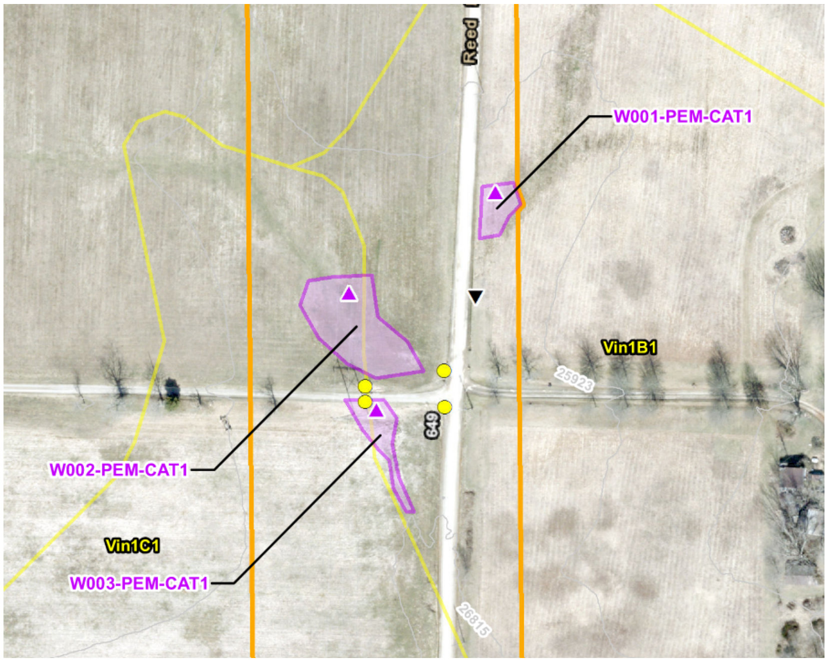
Lat/Long or UTM Coordinate	39.453980, -81.671582	
USGS Quad Name	Watertown	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040901	
Site Visit	8/30/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	Vin1C1; Vincent silt loam, 6 to 12 percent slopes	
Delineation report/map	X	

Name of Wetland:
W002

Wetland Size (acres, hectares): 0.206356 acres

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

North



Comments, Narrative Discussion, Justification of Category Changes:
N/A

Final score : 16.5 **Category:** Category 1

Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

ORAM v. 5.0 Field Form Quantitative Rating

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

1	2
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

5	7
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

☐ ditch	☐ point source (nonstormwater)
☐ tile	☐ filling/grading
☐ dike	☐ road bed/RR track
☐ weir	☐ dredging
☐ stormwater input	☑ other Farming

6.5	13.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

☐ mowing	☐ shrub/sapling removal
☐ grazing	☐ herbaceous/aquatic bed removal
☐ clearcutting	☐ sedimentation
☐ selective cutting	☐ dredging
☐ woody debris removal	☑ farming
☐ toxic pollutants	☐ nutrient enrichment

13.5
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

13.5
subtotal first page

0	13.5
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

3	16.5
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 1 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other___________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

16.5

End of Quantitative Rating. Complete Categorization Worksheets.

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	1	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	5	
	Metric 4. Habitat	6.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE	16.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

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Name of Wetland: WOH-AGS-003 / W003

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

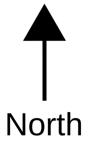
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

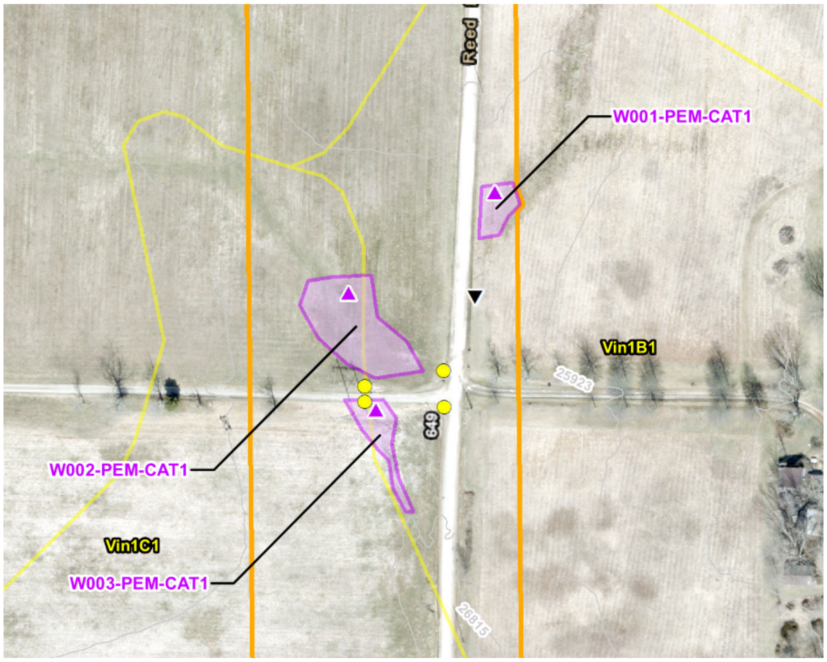
Lat/Long or UTM Coordinate	39.453621, -81.671478	
USGS Quad Name	Watertown	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040901	
Site Visit	8/30/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	Vin1B1; Vincent silt loam, 2 to 6 percent slopes	
Delineation report/map	X	

Name of Wetland:
W003

Wetland Size (acres, hectares):	0.060699 acres

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





Comments, Narrative Discussion, Justification of Category Changes:
N/A

Final score :	13.5	**Category:**	Category 1

Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

max 6 pts.	subtotal
0	0

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

max 14 pts.	subtotal
1	1

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

max 30 pts.	subtotal
5	6

Metric 3. Hydrology.

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

Check all disturbances observed

☐ ditch	☐ point source (nonstormwater)
☐ tile	☐ filling/grading
☐ dike	☐ road bed/RR track
☐ weir	☐ dredging
☐ stormwater input	☑ other Farming

max 20 pts.	subtotal
6.5	12.5

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

☐ mowing	☐ shrub/sapling removal
☐ grazing	☐ herbaceous/aquatic bed removal
☐ clearcutting	☐ sedimentation
☐ selective cutting	☐ dredging
☐ woody debris removal	☑ farming
☐ toxic pollutants	☐ nutrient enrichment

12.5
subtotal this page

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

12.5
subtotal first page

max 10 pts.	subtotal
0	12.5

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

max 20 pts.	subtotal
1	13.5

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 1 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other___________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

13.5

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	5	
	Metric 4. Habitat	6.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	1	
	TOTAL SCORE	13.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-004 / W004

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional/Riverine

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

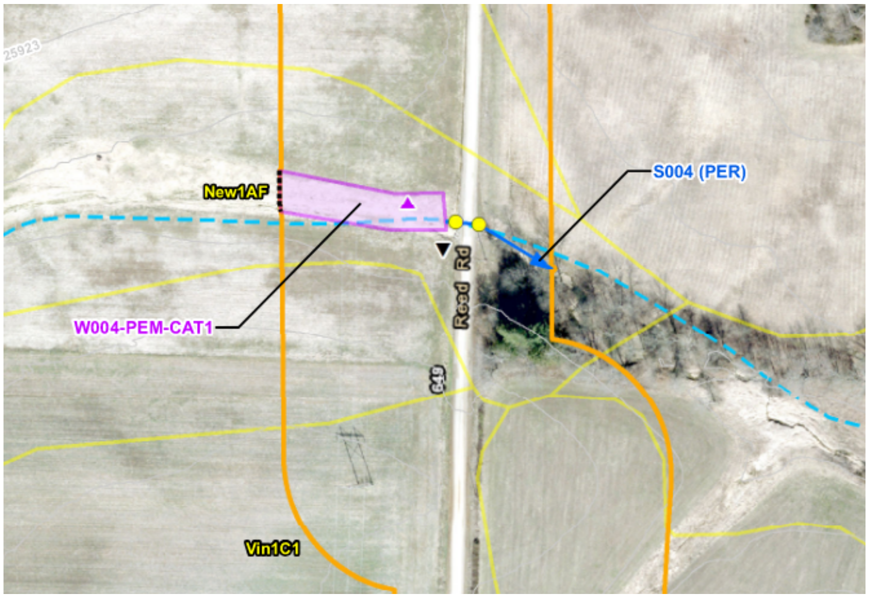
Lat/Long or UTM Coordinate	39.452331, -81.671479	
USGS Quad Name	Watertown	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040901	
Site Visit	8/30/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	New1AF; Newark silt loam, 0 to 3 percent slopes,	
Delineation report/map	X	

Name of Wetland:
W004

Wetland Size (acres, hectares):	0.182452 acres

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

North



Comments, Narrative Discussion, Justification of Category Changes:
N/A

Final score :	20	**Category:**	Category 1

Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

ORAM v. 5.0 Field Form Quantitative Rating

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

1	2
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

12	14
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

Check all disturbances observed

☐ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input

☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☑ other Farming

8	22
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

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

22
subtotal this page

last revised 1 February 2001 jjm

Site: AEP West Watertown-Watertown **Rater(s):** Austin Sige **Date:** 10/6/2023

22
subtotal first page

0 max 10 pts. | 22 subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-2 max 20 pts. | 20 subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 1 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other___________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

20

End of Quantitative Rating. Complete Categorization Worksheets.

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	1	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	8	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	-2	
	TOTAL SCORE	20	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-005 / W005

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional/Slope

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

Lat/Long or UTM Coordinate	39.459117, -81.661766	
USGS Quad Name	Watertown	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040901	
Site Visit	9/5/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	GkC; Gilpin-Summitville-Upshur complex, 6 to 12	
Delineation report/map	X	

Name of Wetland: W005	
Wetland Size (acres, hectares):	0.012406 acres

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

↑

North

Comments, Narrative Discussion, Justification of Category Changes:

N/A

Final score :	35	**Category:**	Modified 2

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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

8	8
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

12	20
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

☐ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input
☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☑ other Farming

12	32
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

☐ mowing
☐ grazing
☐ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☑ farming
☐ nutrient enrichment

32
subtotal this page

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

32
subtotal first page

0	32
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

3	35
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

0 Aquatic bed
2 Emergent
0 Shrub
0 Forest
0 Mudflats
0 Open water
0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

35

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	12	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE	35	Category based on score breakpoints Modified 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-006 / W006

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional/Riverine

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

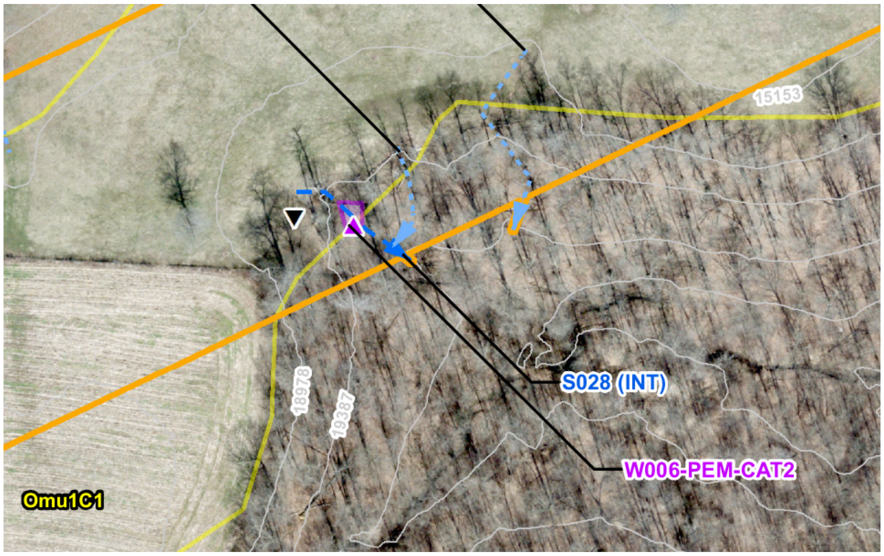
Lat/Long or UTM Coordinate	39.459987, -81.646934	
USGS Quad Name	Watertown	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	9/5/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	GkE; Gilpin-Summitville-Upshur complex, 18 to 25	
Delineation report/map	X	

Name of Wetland:
W006

Wetland Size (acres, hectares):	0.010468 acres

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

North



Comments, Narrative Discussion, Justification of Category Changes:
N/A

Final score :	32	**Category:**	2

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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

max 6 pts.	subtotal
0	0

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

max 14 pts.	subtotal
5	5

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

max 30 pts.	subtotal
15	20

Metric 3. Hydrology.

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

☐ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input
☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☑ other Farming

max 20 pts.	subtotal
9	29

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

☐ mowing
☑ grazing
☐ clearcutting
☑ selective cutting
☐ woody debris removal
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☑ farming
☐ nutrient enrichment

29
subtotal this page

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

28
subtotal first page

0	28
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

4	32
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

32

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	5	
	Metric 3. Hydrology	15	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	4	
	TOTAL SCORE	32	Category based on score breakpoints 2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-007 / W007

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

Lat/Long or UTM Coordinate	39.462170, -81.641925	
USGS Quad Name	Watertown	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	9/5/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	Gal2C1; Gallia loam, 6 to 12 percent slopes	
Delineation report/map	X	

Name of Wetland:
W007

Wetland Size (acres, hectares):	0.010789 acres

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

Comments, Narrative Discussion, Justification of Category Changes:

N/A

Final score :	25	**Category:**	Category 1

Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

max 6 pts.	subtotal
0	0

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

max 14 pts.	subtotal
3	3

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

max 30 pts.	subtotal
11	14

Metric 3. Hydrology.

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☑ other Past farming / current mowing

max 20 pts.	subtotal
8	22

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

subtotal this page
22

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

22
subtotal first page

0	22
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

3	25
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other___________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

25

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	11	
	Metric 4. Habitat	8	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	3	
	TOTAL SCORE	25	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-008 / W008

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

Lat/Long or UTM Coordinate	39.476265, -81.619551	
USGS Quad Name	Fleming	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	9/7/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	WzC; Woodsfield-Zanesville silt loams, 6 to 12 pe	
Delineation report/map	X	

Name of Wetland:
W008

Wetland Size (acres, hectares):	0.268923 acres

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

Comments, Narrative Discussion, Justification of Category Changes:
N/A

Final score :	25	**Category:**	Category 1

Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.
- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

1	2
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

8	10
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.
- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☐ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.
- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3b. Connectivity. Score all that apply.
- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☐ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.
- ☐ Semi- to permanently inundated/saturated (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.
- ☐ None or none apparent (12)
- ☒ Recovered (7)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed
- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☑ other Farming

11	21
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.
- ☐ None or none apparent (4)
- ☒ Recovered (3)
- ☐ Recovering (2)
- ☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.
- ☐ Excellent (7)
- ☐ Very good (6)
- ☒ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.
- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☒ Recovering (3)
- ☐ Recent or no recovery (1)

Check all disturbances observed
- ☐ mowing
- ☐ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants
- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☑ farming
- ☐ nutrient enrichment

21
subtotal this page

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

21
subtotal first page

max 10 pts.	subtotal
0	21

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

max 20 pts.	subtotal
4	25

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

0 Aquatic bed
2 Emergent
0 Shrub
0 Forest
0 Mudflats
0 Open water
0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

25

End of Quantitative Rating. Complete Categorization Worksheets.

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	1	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	11	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	4	
	TOTAL SCORE	25	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-009 / W009

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional/Riverine

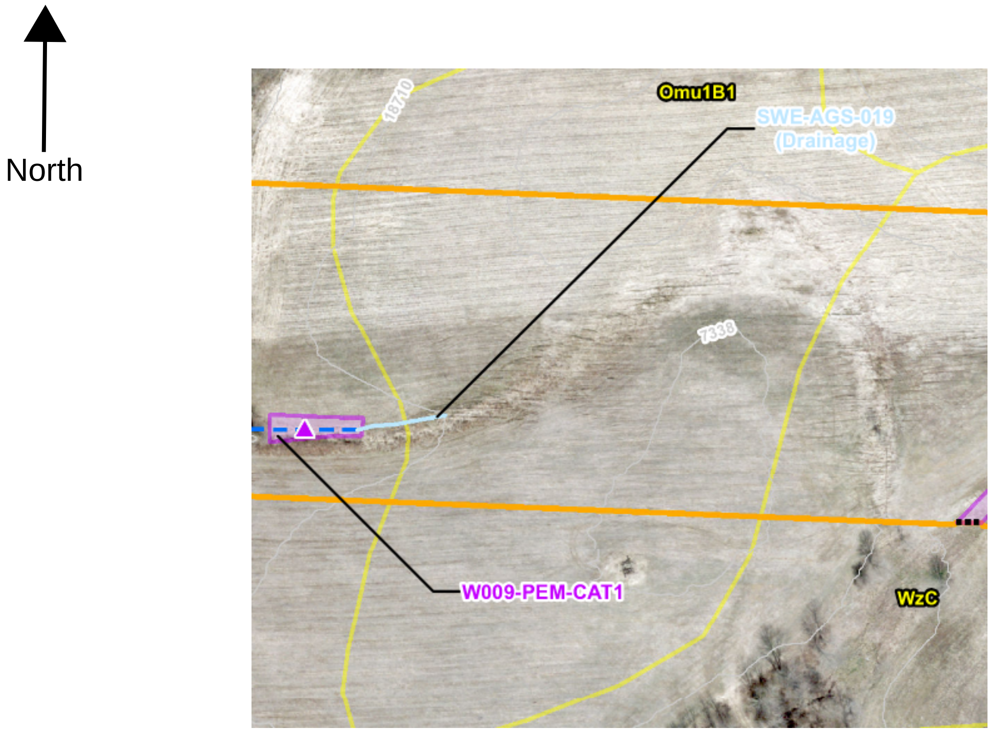
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

Lat/Long or UTM Coordinate	39.476145, -81.622403	
USGS Quad Name	Fleming	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	9/7/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	WzC; Woodsfield-Zanesville silt loams, 6 to 12 pe	
Delineation report/map	X	

Name of Wetland:
W009

Wetland Size (acres, hectares): 0.041428 acres

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



Comments, Narrative Discussion, Justification of Category Changes:
N/A

Final score : 28.5

Category: Category 1

Scoring Boundary Worksheet

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

#	**Steps in properly establishing scoring boundaries**	**done?**	**not applicable**
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

1	1
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

12	13
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☑ other Farming

9.5	22.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

22.5
subtotal this page

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

22.5
subtotal first page

max 10 pts.	subtotal
0	22.5

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

max 20 pts.	subtotal
6	28.5

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

28.5

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	9.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE	28.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-010 / W010

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional/Riverine

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

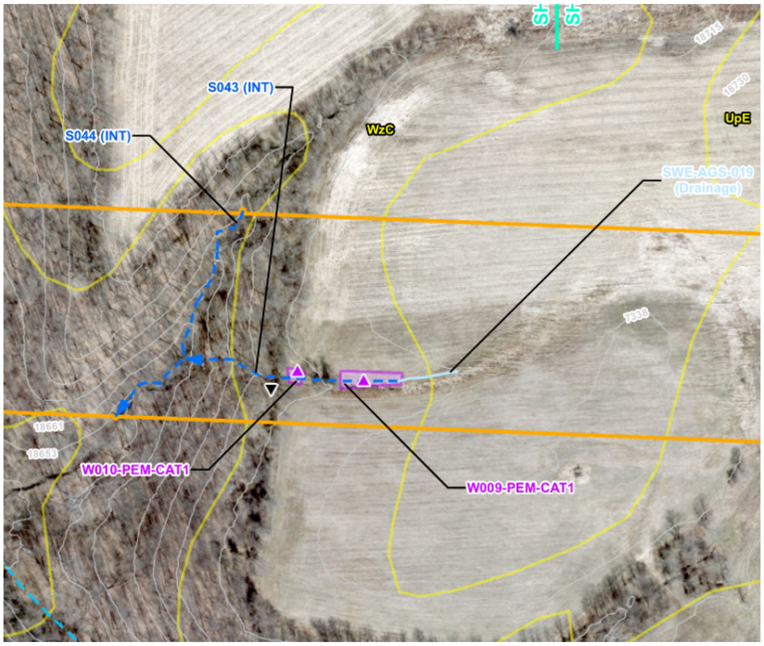
Lat/Long or UTM Coordinate	39.476185, -81.622740	
USGS Quad Name	Fleming	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	9/7/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	WzC; Woodsfield-Zanesville silt loams, 6 to 12 pe	
Delineation report/map	X	

Name of Wetland:
W010

Wetland Size (acres, hectares):	0.009671 acres

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

North



Comments, Narrative Discussion, Justification of Category Changes:
N/A

Final score :	28.5	**Category:**	Category 1

Scoring Boundary Worksheet

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

#	**Steps in properly establishing scoring boundaries**	**done?**	**not applicable**
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: AEP West Watertown-Watertown
Rater(s): Austin Sige
Date: 10/6/2023

max 6 pts.	subtotal
0	0

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

max 14 pts.	subtotal
1	1

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

max 30 pts.	subtotal
12	13

Metric 3. Hydrology.

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☑ other Farming

max 20 pts.	subtotal
9.5	22.5

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

22.5
subtotal this page

last revised 1 February 2001 jjm

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

22.5
subtotal first page

0	22.5
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

6	28.5
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

28.5

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	1	
	Metric 3. Hydrology	12	
	Metric 4. Habitat	9.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE	28.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Austin Sige

Date:
10/6/2023

Affiliation:
GAI Consultants, Inc.

Address:
385 E Waterfront Dr, Homestead, PA 15120

Phone Number:
(412) 476-2000

e-mail address:
a.sige@gaiconsultants.com

Name of Wetland: WOH-AGS-011 / W011

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional/Slope

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the figures in the ecological survey report.

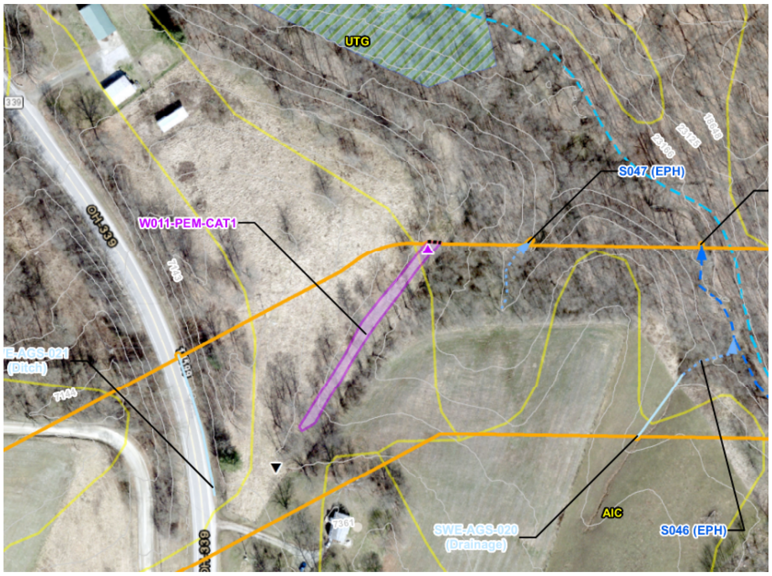
Lat/Long or UTM Coordinate	39.476892, -81.626841	
USGS Quad Name	Watertown	
County	Washington	
Township	X	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	9/7/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	UTG; Upshur association, very stony, 25 to 70 pe	
Delineation report/map	X	

Name of Wetland:
W011

Wetland Size (acres, hectares): 0.140887 acres

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

North



Comments, Narrative Discussion, Justification of Category Changes:
N/A

Final score : 28.5

Category: Category 1

Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

4	5
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

8	13
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

Check all disturbances observed

☐ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input
☐ point source (nonstormwater)
☐ filling/grading
☑ road bed/RR track
☐ dredging
☐ other_____________________

9.5	22.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

☐ mowing
☐ grazing
☐ clearcutting
☑ selective cutting
☐ woody debris removal
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

22.5
subtotal this page

Site: AEP West Watertown-Watertown	**Rater(s):** Austin Sige	**Date:** 10/6/2023

22.5
subtotal first page

0	22.5
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

6	28.5
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

0 Aquatic bed
2 Emergent
0 Shrub
0 Forest
0 Mudflats
0 Open water
0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

1 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

28.5

End of Quantitative Rating. Complete Categorization Worksheets.

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	1	
	Metric 2. Buffers and surrounding land use	4	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	9.5	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	6	
	TOTAL SCORE	28.5	Category based on score breakpoints Category 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Bethany Gregory

Date:
09/05/2023

Affiliation:
GAI Consultants, Inc.

Address:
5399 Lauby Road, Suite 120, North Canton, OH 44720

Phone Number:
412.228.7213

e-mail address:
b.gregory@gaiconsultants.com

Name of Wetland: WOH-BLG-001/ W012

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

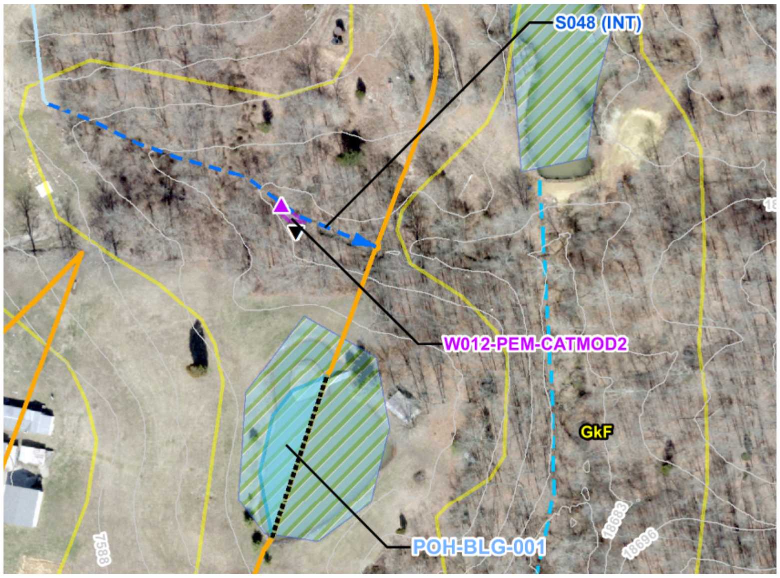
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the attached project location map.

Lat/Long or UTM Coordinate	39.476464, -81.616847	
USGS Quad Name	Fleming	
County	Washington	
Township	Watertown	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	09/05/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	UpD:Upshur silty clay loam, 12-18 percent slopes	
Delineation report/map	X	

Name of Wetland: W012	
Wetland Size (acres, hectares):	0.006 ac

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

North



Comments, Narrative Discussion, Justification of Category Changes:

Final score :	35	**Category:**	CATMOD2

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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: West Watertown-Watertown	**Rater(s):** Bethany Gregory	**Date:** 09/05/2023

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.
☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

8	8
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.
☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

16	24
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.
☐ High pH groundwater (5)
☐ Other groundwater (3)
☒ Precipitation (1)
☒ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.
☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3b. Connectivity. Score all that apply.
☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.
☐ Semi- to permanently inundated/saturated (4)
☒ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☐ Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.
☐ None or none apparent (12)
☒ Recovered (7)
☐ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed
☐ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input
☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☐ other_____________________

9	33
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.
☐ None or none apparent (4)
☒ Recovered (3)
☐ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.
☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☒ Fair (3)
☐ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.
☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed
☐ mowing
☐ grazing
☐ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

33
subtotal this page

last revised 1 February 2001 jjm

Site: West Watertown-Watertown	**Rater(s):** Bethany Gregory	**Date:** 09/05/2023

33
subtotal first page

0	33
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

2	35
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 1 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

35

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	8	
	Metric 3. Hydrology	16	
	Metric 4. Habitat	9	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	2	
	TOTAL SCORE	35	Category based on score breakpoints CATMOD2

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Bethany Gregory

Date:
09/05/2023

Affiliation:
GAI Consultants, Inc.

Address:
5399 Lauby Road, Suite 120, North Canton, OH 44720

Phone Number:
412.228.7213

e-mail address:
b.gregory@gaiconsultants.com

Name of Wetland: WOH-BLG-002/W013

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the attached project location map.

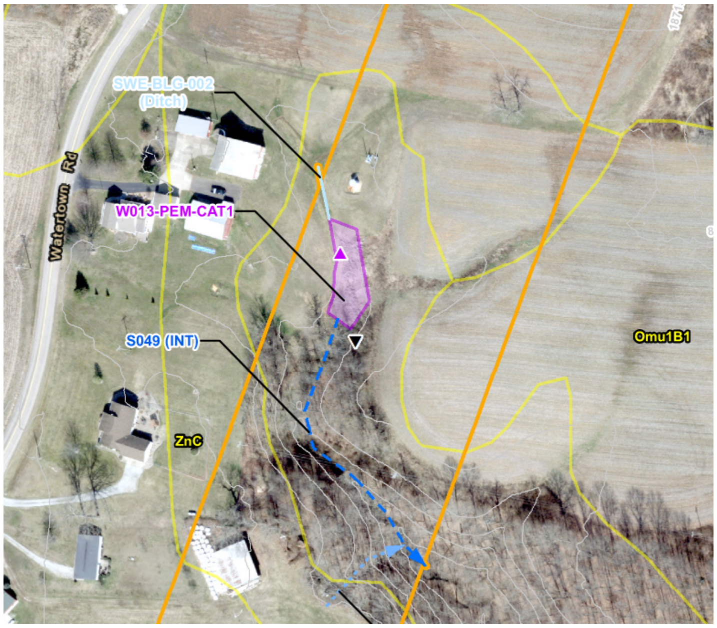
Lat/Long or UTM Coordinate	39.473576, -81.618726	
USGS Quad Name	Fleming	
County	Washington	
Township	Watertown	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	09/05/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	GkF: Gilpin-Summitville-Upshur complex 25-35%	
Delineation report/map	X	

Name of Wetland:
W013

Wetland Size (acres, hectares):	0.116

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

North



Comments, Narrative Discussion, Justification of Category Changes:

Final score : 19	**Category:**	CAT 1

Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: West Watertown-Watertown | **Rater(s):** Bethany Gregory | **Date:** 09/05/2023

1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.
☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☐ <0.1 acres (0.04ha) (0 pts)

3	4
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.
☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

8	11
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.
☐ High pH groundwater (5)
☐ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.
☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☒ Part of riparian or upland corridor (1)

3c. Maximum water depth. Select only one and assign score.
☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.
☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☒ Seasonally inundated (2)
☐ Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.
☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed
☑ ditch
☐ tile
☐ dike
☐ weir
☑ stormwater input
☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☐ other______________________

7	18
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.
☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.
☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.
☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed
☑ mowing
☐ grazing
☐ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

18
subtotal this page

Site: West Watertown-Watertown	**Rater(s):** Bethany Gregory	**Date:** 09/05/2023

18
subtotal first page

0	18
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

1	19
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

19

End of Quantitative Rating. Complete Categorization Worksheets.

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	1	
	Metric 2. Buffers and surrounding land use	3	
	Metric 3. Hydrology	8	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	1	
	TOTAL SCORE	19	Category based on score breakpoints CAT 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	**Circle one**		**Evaluation of Categorization Result of ORAM**
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Bethany Gregory

Date:
09/06/2023

Affiliation:
GAI Consultants, Inc.

Address:
5399 Lauby Road, Suite 120, North Canton, OH 44720

Phone Number:
412.228.7213

e-mail address:
b.gregory@gaiconsultants.com

Name of Wetland: WOH-BLG-003/ W014

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the attached project location map.

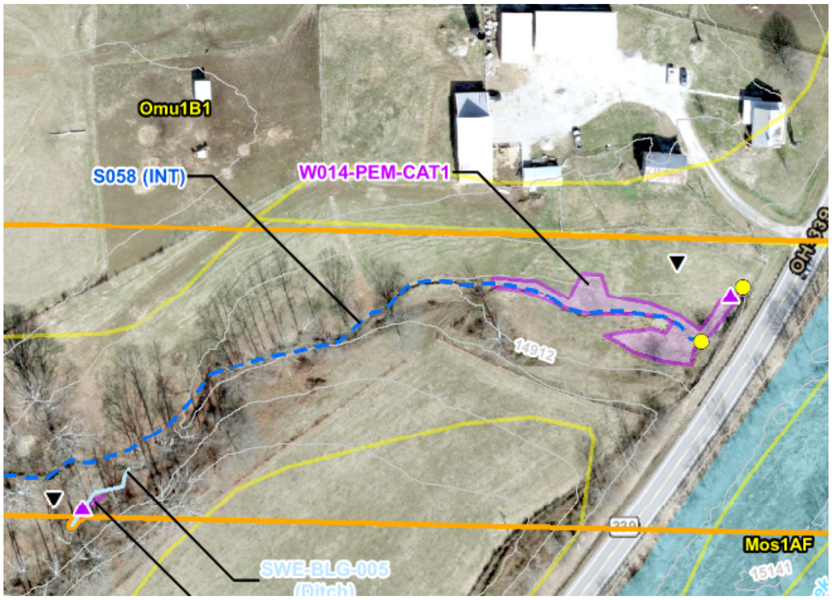
Lat/Long or UTM Coordinate	39.461001, -81.637754	
USGS Quad Name	Watertown	
County	Washington	
Township	Watertown	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	09/06/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	GkE: Gilpin-Summitville-Upshur complex 18-25%	
Delineation report/map	X	

Name of Wetland:
W014

Wetland Size (acres, hectares): 0.140

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

North



Comments, Narrative Discussion, Justification of Category Changes:

Final score : 17

Category: CAT 1

Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

ORAM v. 5.0 Field Form Quantitative Rating

Site: West Watertown-Watertown	**Rater(s):** Bethany Gregory	**Date:** 09/06/2023

max 6 pts.	subtotal
1	1

Metric 1. Wetland Area (size).

Select one size class and assign score.
- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
- ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
- ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- ☒ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- ☐ <0.1 acres (0.04ha) (0 pts)

max 14 pts.	subtotal
2	3

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.
- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

max 30 pts.	subtotal
10	13

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.
- ☐ High pH groundwater (5)
- ☐ Other groundwater (3)
- ☒ Precipitation (1)
- ☒ Seasonal/Intermittent surface water (3)
- ☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.
- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <0.4m (<15.7in) (1)

3b. Connectivity. Score all that apply.
- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (1)
- ☐ Part of wetland/upland (e.g. forest), complex (1)
- ☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.
- ☐ Semi- to permanently inundated/saturated (4)
- ☒ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☐ Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.
- ☐ None or none apparent (12)
- ☐ Recovered (7)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed
- ☑ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input
- ☐ point source (nonstormwater)
- ☐ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other______________________

max 20 pts.	subtotal
3	16

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.
- ☐ None or none apparent (4)
- ☐ Recovered (3)
- ☐ Recovering (2)
- ☒ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.
- ☐ Excellent (7)
- ☐ Very good (6)
- ☐ Good (5)
- ☐ Moderately good (4)
- ☐ Fair (3)
- ☐ Poor to fair (2)
- ☒ Poor (1)

4c. Habitat alteration. Score one or double check and average.
- ☐ None or none apparent (9)
- ☐ Recovered (6)
- ☐ Recovering (3)
- ☒ Recent or no recovery (1)

Check all disturbances observed
- ☐ mowing
- ☑ grazing
- ☐ clearcutting
- ☐ selective cutting
- ☐ woody debris removal
- ☐ toxic pollutants
- ☐ shrub/sapling removal
- ☐ herbaceous/aquatic bed removal
- ☐ sedimentation
- ☐ dredging
- ☐ farming
- ☐ nutrient enrichment

16
subtotal this page

last revised 1 February 2001 jjm

Site: West Watertown-Watertown	**Rater(s):** Bethany Gregory	**Date:** 09/06/2023

16
subtotal first page

0	16
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

1	17
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 2 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

17

End of Quantitative Rating. Complete Categorization Worksheets.

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	1	
	Metric 2. Buffers and surrounding land use	2	
	Metric 3. Hydrology	10	
	Metric 4. Habitat	3	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	1	
	TOTAL SCORE	17	Category based on score breakpoints CAT 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Bethany Gregory

Date:
09/06/2023

Affiliation:
GAI Consultants, Inc.

Address:
5399 Lauby Road, Suite 120, North Canton, OH 44720

Phone Number:
412.228.7213

e-mail address:
b.gregory@gaiconsultants.com

Name of Wetland: WOH-BLG-004/W015

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

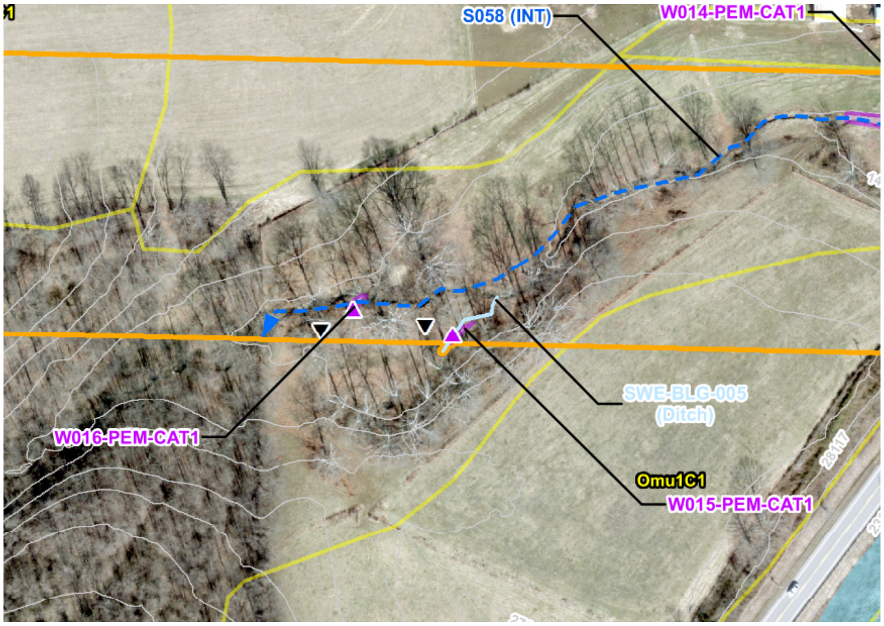
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the attached project location map.

Lat/Long or UTM Coordinate	39.460482, -81.639733	
USGS Quad Name	Watertown	
County	Washington	
Township	Watertown	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	09/06/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	GkE: Gilpin-Summitville-Upshur complex 18-25%	
Delineation report/map	X	

Name of Wetland: W015	
Wetland Size (acres, hectares):	0.003

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

North



Comments, Narrative Discussion, Justification of Category Changes:

Final score :	23	**Category:**	CAT 1

Scoring Boundary Worksheet

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

#	**Steps in properly establishing scoring boundaries**	**done?**	**not applicable**
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

Site: West Watertown-Watertown	**Rater(s):** Bethany Gregory	**Date:** 09/06/2023

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.
☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
☒ <0.1 acres (0.04ha) (0 pts)

9	9
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.
☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☒ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

7	16
max 30 pts.	subtotal

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.
☐ High pH groundwater (5)
☐ Other groundwater (3)
☒ Precipitation (1)
☐ Seasonal/Intermittent surface water (3)
☐ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.
☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <0.4m (<15.7in) (1)

3b. Connectivity. Score all that apply.
☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (1)
☐ Part of wetland/upland (e.g. forest), complex (1)
☒ Part of riparian or upland corridor (1)

3d. Duration inundation/saturation. Score one or dbl check.
☐ Semi- to permanently inundated/saturated (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

3e. Modifications to natural hydrologic regime. Score one or double check and average.
☐ None or none apparent (12)
☐ Recovered (7)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed
☑ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input
☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☐ other______________________

7	23
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.
☐ None or none apparent (4)
☐ Recovered (3)
☒ Recovering (2)
☐ Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.
☐ Excellent (7)
☐ Very good (6)
☐ Good (5)
☐ Moderately good (4)
☐ Fair (3)
☒ Poor to fair (2)
☐ Poor (1)

4c. Habitat alteration. Score one or double check and average.
☐ None or none apparent (9)
☐ Recovered (6)
☒ Recovering (3)
☐ Recent or no recovery (1)

Check all disturbances observed
☐ mowing
☑ grazing
☐ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

23
subtotal this page

Site: West Watertown-Watertown	**Rater(s):** Bethany Gregory	**Date:** 09/06/2023

23
subtotal first page

0	23
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

0	23
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 1 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

23

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	9	
	Metric 3. Hydrology	7	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	0	
	TOTAL SCORE	23	Category based on score breakpoints CAT 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

Background Information

Name:
Bethany Gregory

Date:
09/06/2023

Affiliation:
GAI Consultants, Inc.

Address:
5399 Lauby Road, Suite 120, North Canton, OH 44720

Phone Number:
412.228.7213

e-mail address:
b.gregory@gaiconsultants.com

Name of Wetland: WOH-BLG-005/ W016

Vegetation Communit(ies):
PEM

HGM Class(es):
Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.
Please refer to the attached project location map.

Lat/Long or UTM Coordinate	39.460569, -81.640119	
USGS Quad Name	Watertown	
County	Washington	
Township	Watertown	
Section and Subsection	X	
Hydrologic Unit Code	050400040903	
Site Visit	09/06/2023	
National Wetland Inventory Map	X	
Ohio Wetland Inventory Map	X	
Soil Survey	GkE: Gilpin-Summitville-Upshur complex 18-25%	
Delineation report/map	X	

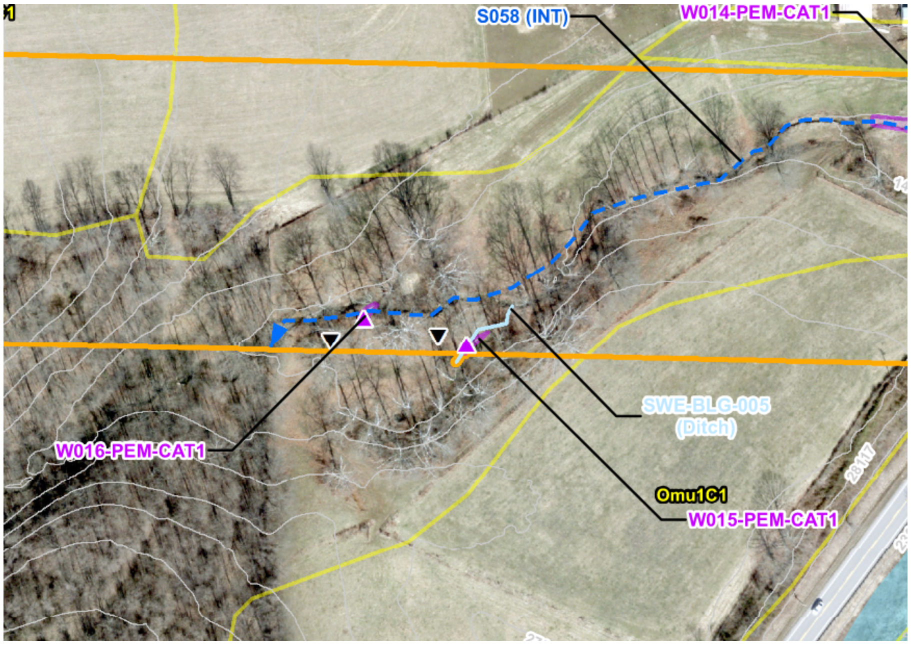
Name of Wetland:
W016

Wetland Size (acres, hectares):	0.004

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

North

↑



Comments, Narrative Discussion, Justification of Category Changes:

Final score :	21	**Category:**	CAT 1

Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	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.

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

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

Table 1. Characteristic plant species.

invasive/exotic spp	fen species	bog species	0ak Opening species	wet prairie species
Lythrum salicaria	*Zygadenus elegans var. glaucus*	*Calla palustris*	*Carex cryptolepis*	*Calamagrostis canadensis*
Myriophyllum spicatum	*Cacalia plantaginea*	*Carex atlantica var. capillacea*	*Carex lasiocarpa*	*Calamogrostis stricta*
Najas minor	*Carex flava*	*Carex echinata*	*Carex stricta*	*Carex atherodes*
Phalaris arundinacea	*Carex sterilis*	*Carex oligosperma*	*Cladium mariscoides*	*Carex buxbaumii*
Phragmites australis	*Carex stricta*	*Carex trisperma*	*Calamagrostis stricta*	*Carex pellita*
Potamogeton crispus	*Deschampsia caespitosa*	*Chamaedaphne calyculata*	*Calamagrostis canadensis*	*Carex 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.

ORAM v. 5.0 Field Form Quantitative Rating

Site: West Watertown-Watertown	**Rater(s):** Bethany Gregory	**Date:** 09/06/2023

max 6 pts.	subtotal
0	0

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

max 14 pts.	subtotal
5	5

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

max 30 pts.	subtotal
9	14

Metric 3. Hydrology.

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

☑ ditch
☐ tile
☐ dike
☐ weir
☐ stormwater input
☐ point source (nonstormwater)
☐ filling/grading
☐ road bed/RR track
☐ dredging
☐ other_____________________

max 20 pts.	subtotal
7	21

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

☐ mowing
☑ grazing
☐ clearcutting
☐ selective cutting
☐ woody debris removal
☐ toxic pollutants
☐ shrub/sapling removal
☐ herbaceous/aquatic bed removal
☐ sedimentation
☐ dredging
☐ farming
☐ nutrient enrichment

subtotal this page
21

last revised 1 February 2001 jjm

Site: West Watertown-Watertown	**Rater(s):** Bethany Gregory	**Date:** 09/06/2023

21
subtotal first page

0	21
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

0	21
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- 0 Aquatic bed
- 1 Emergent
- 0 Shrub
- 0 Forest
- 0 Mudflats
- 0 Open water
- 0 Other__________________

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

- 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 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

21

End of Quantitative Rating. Complete Categorization Worksheets.

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	0	
	Metric 2. Buffers and surrounding land use	5	
	Metric 3. Hydrology	9	
	Metric 4. Habitat	7	
	Metric 5. Special Wetland Communities	0	
	Metric 6. Plant communities, interspersion, microtopography	0	
	TOTAL SCORE	21	Category based on score breakpoints CAT 1

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	[✓ NO]	Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been 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.

APPENDIX D

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

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S001 RIVER BASIN ________ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.12

LENGTH OF STREAM REACH (ft) 384.00 LAT 39.458828 LONG -81.667112 RIVER MILE ________

DATE 08/30/2023 SCORER AGS COMMENTS SOH-AGS-001

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

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

HHEI Metric Points

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

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]		☑ ☐	SILT [3 pt]	35
☐ ☐	BOULDER (>256 mm) [16 pts]	30	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐ ☐	BEDROCK [16 pts]		☐ ☐	FINE DETRITUS [3 pts]	
☐ ☑	COBBLE (65-256 mm) [12 pts]	35	☐ ☐	CLAY or HARDPAN [0 pt]	
☐ ☐	GRAVEL (2-64 mm) [9 pts]		☐ ☐	MUCK [0 pts]	
☐ ☐	SAND (<2 mm) [6 pts]		☐ ☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

Substrate Max = 40: 18

A + B

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

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

COMMENTS ________ **MAXIMUM POOL DEPTH (centimeters):** 12.7

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

COMMENTS ________ **AVERAGE BANKFULL WIDTH (meters)** 2.74

Bankfull Width Max=30: 0

This information must also be completed

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

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 2.83 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

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

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

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

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 20

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

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

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

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

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

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

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

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

Comments Regarding Biology: Unknown species of water spider observed

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed)

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

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S002 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.10

LENGTH OF STREAM REACH (ft) 103.00 LAT 39.459154 LONG -81.667190 RIVER MILE ______

DATE 08/30/2023 SCORER AGS COMMENTS SOH-AGS-002

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	50	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

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

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

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 2.54

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

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 0.91

Bankfull Width Max=30: 0

This information must also be completed

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

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 2.83 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

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

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

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

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 20

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

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

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

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

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

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

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

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

Comments Regarding Biology: ________

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

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

FLOW

Ohio

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S003 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.08

LENGTH OF STREAM REACH (ft) 206.00 LAT 39.458758 LONG -81.666818 RIVER MILE ______

DATE 08/30/2023 SCORER AGS COMMENTS SOH-AGS-003

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	50
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

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

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

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 0.61

Bankfull Width Max=30: 0

This information must also be completed

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

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 2.83 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

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

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

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

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

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

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

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

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

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

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

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

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

Comments Regarding Biology: ________

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

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

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S004 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.19

LENGTH OF STREAM REACH (ft) 132.00 LAT 39.452274 LONG -81.671202 RIVER MILE ______

DATE 08/30/2023 SCORER AGS COMMENTS SOH-AGS-004

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☐☑	**SILT [3 pt]**	30
☐☐	**BOULDER (>256 mm) [16 pts]**		☐☐	**LEAF PACK/WOODY DEBRIS [3 pts]**	20
☐☐	**BEDROCK [16 pts]**		☐☐	**FINE DETRITUS [3 pts]**	
☑☐	**COBBLE (65-256 mm) [12 pts]**	50	☐☐	**CLAY or HARDPAN [0 pt]**	
☐☐	**GRAVEL (2-64 mm) [9 pts]**		☐☐	**MUCK [0 pts]**	
☐☐	**SAND (<2 mm) [6 pts]**		☐☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

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

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

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 15.24

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

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 2.13

Bankfull Width Max=30: 0

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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.59 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

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

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

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

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 40

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

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

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

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

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

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

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

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

Comments Regarding Biology: Unidentified species of water spider 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

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S005 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.35
LENGTH OF STREAM REACH (ft) 537.00 LAT 39.447725 LONG -81.664491 RIVER MILE ______
DATE 08/31/2023 SCORER AGS COMMENTS SOH-AGS-005

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

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

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

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

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

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

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

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 7.62

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

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 4.57

Bankfull Width Max=30: 0

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)

L	R	
☑	☐	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☑	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

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

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.04 mi

☐ CWH Name: ____________ Distance from Evaluated Stream ____________

☐ EWH Name: ____________ Distance from Evaluated Stream ____________

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

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ____________

MISCELLANEOUS

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

Photo-documentation Notes: ____________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

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

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

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

Additional comments/description of pollution impacts: ____________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

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

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

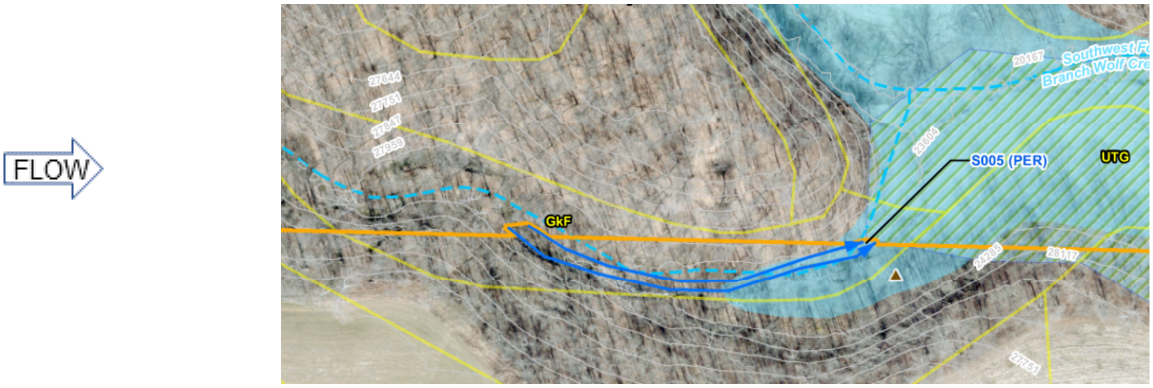
Salamanders Observed? (Y/N) N Species observed (if known): ____________

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

Comments Regarding Biology: ____________

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

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



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S007 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.05

LENGTH OF STREAM REACH (ft) 237.00 LAT 39.446976 LONG -81.659503 RIVER MILE ______

DATE 08/31/2023 SCORER AGS COMMENTS SOH-AGS-007

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	50	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

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

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

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 0.91

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☑	☑	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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)

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S037 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.01

LENGTH OF STREAM REACH (ft) 42.00 LAT 39.474486 LONG -81.632378 RIVER MILE ______

DATE 09/06/2023 SCORER AGS COMMENTS SOH-AGS-037

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

HHEI Metric Points

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS **[16 pts]**		☑☐	SILT **[3 pt]**	50
☐☐	BOULDER (>256 mm) **[16 pts]**		☐☑	LEAF PACK/WOODY DEBRIS **[3 pts]**	50
☐☐	BEDROCK **[16 pts]**		☐☐	FINE DETRITUS **[3 pts]**	
☐☐	COBBLE (65-256 mm) **[12 pts]**		☐☐	CLAY or HARDPAN **[0 pt]**	
☐☐	GRAVEL (2-64 mm) **[9 pts]**		☐☐	MUCK **[0 pts]**	
☐☐	SAND (<2 mm) **[6 pts]**		☐☐	ARTIFICIAL **[3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters **[20 pts]**	☐	5 cm - 10 cm **[15 pts]**
☐	> 22.5 - 30 cm **[30 pts]**	☐	< 5 cm **[5pts]**
☐	> 10 - 22.5 cm **[25 pts]**	☐	NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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 (> 4' 8" - 9' 7") **[20 pts]**		

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 1.52

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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	☐	Moist Channel, isolated pools, no flow (intermittent)
☐	Subsurface flow with isolated pools (interstitial)	☐	Dry channel, no water (ephemeral)

COMMENTS ______

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score ________ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: South Branch Wolf Creek Distance from Evaluated Stream 0.36 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

Ohio Environmental Protection Agency

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S038 RIVER BASIN ____ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.07

LENGTH OF STREAM REACH (ft) 314.00 LAT 39.474276 LONG -81.632454 RIVER MILE ____

DATE 09/06/2023 SCORER AGS COMMENTS SOH-AGS-038

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS **[16 pts]**		☑☐	SILT **[3 pt]**	50
☐☐	BOULDER (>256 mm) **[16 pts]**		☐☑	LEAF PACK/WOODY DEBRIS **[3 pts]**	40
☐☐	BEDROCK **[16 pts]**		☐☐	FINE DETRITUS **[3 pts]**	
☐☐	COBBLE (65-256 mm) **[12 pts]**	10	☐☐	CLAY or HARDPAN **[0 pt]**	
☐☐	GRAVEL (2-64 mm) **[9 pts]**		☐☐	MUCK **[0 pts]**	
☐☐	SAND (<2 mm) **[6 pts]**		☐☐	ARTIFICIAL **[3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ____ MAXIMUM POOL DEPTH (centimeters): 0

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ____ AVERAGE BANKFULL WIDTH (meters) 1.68

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☑	☑	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.30 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

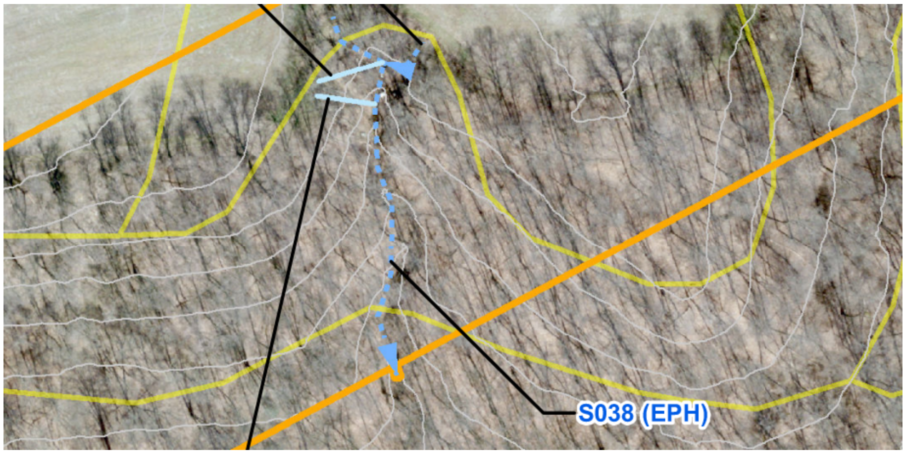
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Ohio

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S039 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.02
LENGTH OF STREAM REACH (ft) 126.00 LAT 39.473077 LONG -81.636615 RIVER MILE ______
DATE 09/06/2023 SCORER AGS COMMENTS SOH-AGS-039

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

HHEI Metric Points

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☑☐	**SILT [3 pt]**	45
☐☐	**BOULDER (>256 mm) [16 pts]**	20	☐☑	**LEAF PACK/WOODY DEBRIS [3 pts]**	35
☐☐	**BEDROCK [16 pts]**		☐☐	**FINE DETRITUS [3 pts]**	
☐☐	**COBBLE (65-256 mm) [12 pts]**		☐☐	**CLAY or HARDPAN [0 pt]**	
☐☐	**GRAVEL (2-64 mm) [9 pts]**		☐☐	**MUCK [0 pts]**	
☐☐	**SAND (<2 mm) [6 pts]**		☐☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

Substrate Max = 40 18 **A + B**

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ **> 30 centimeters [20 pts]**
☐ **> 22.5 - 30 cm [30 pts]**
☐ **> 10 - 22.5 cm [25 pts]**
☐ **5 cm - 10 cm [15 pts]**
☐ **< 5 cm [5pts]**
☐ **NO WATER OR MOIST CHANNEL [0pts]**

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]**
☐ **> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]**
☐ **> 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]**
☐ **> 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]**
☐ **≤ 1.0 m (≤ 3' 3") [5 pts]**

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 1.52

Bankfull Width Max=30 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0 mi
☐ CWH Name: ______ Distance from Evaluated Stream ______
☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity?(Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures:Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

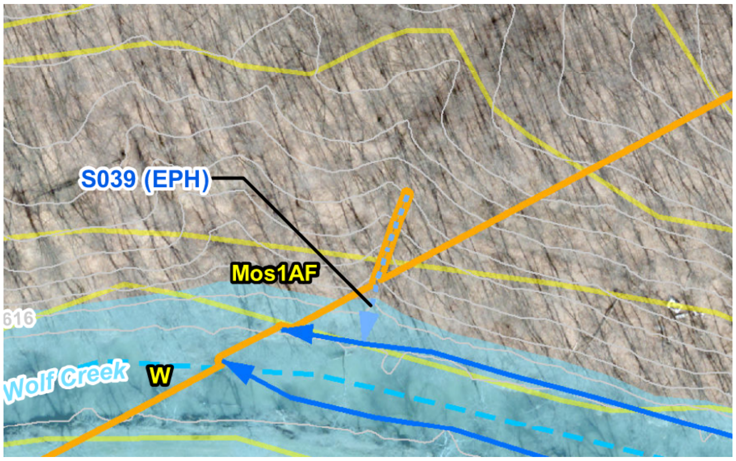
(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______
Salamanders Observed? (Y/N) N Species observed (if known): ______
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______
Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S041 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.03

LENGTH OF STREAM REACH (ft) 311.00 LAT 39.471230 LONG -81.640686 RIVER MILE ______

DATE 09/06/2023 SCORER AGS COMMENTS SOH-AGS-041

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	85
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	5
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	10	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

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 Immature forest within an Ag Field.

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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.04 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 70

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

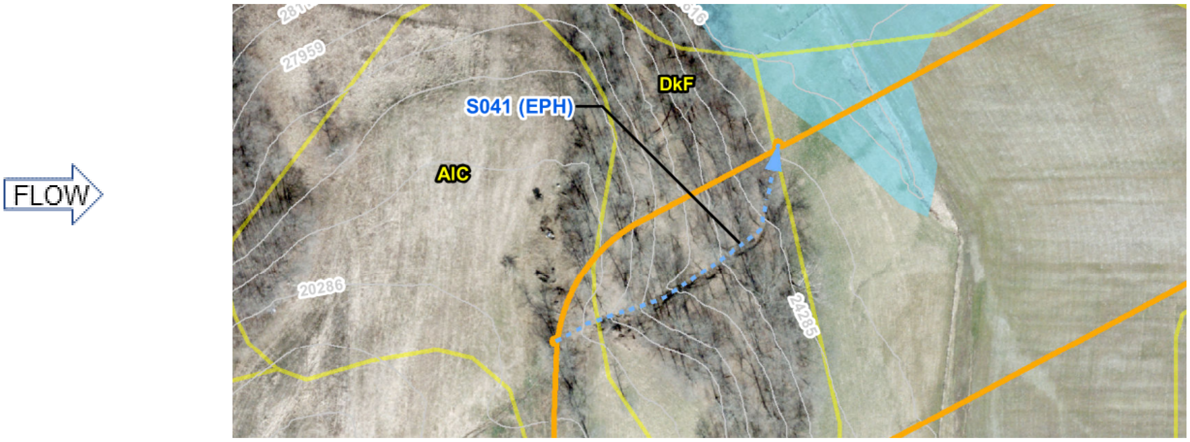
BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S042 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.12

LENGTH OF STREAM REACH (ft) 700.00 LAT 39.466915 LONG -81.641087 RIVER MILE ______

DATE 09/06/2023 SCORER AGS COMMENTS SOH-AGS-042

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	75
☐☐	BOULDER (>256 mm) [16 pts]	10	☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	15
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 1.27

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.52

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 Low flow

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.35 mi
☐ CWH Name: ____________ Distance from Evaluated Stream ____________
☐ EWH Name: ____________ Distance from Evaluated Stream ____________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ____________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ____________ Quantity: ____________

Photo-documentation Notes: ____________

Elevated Turbidity? (Y/N): N Canopy (% open): 70

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ____________

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ____________

Additional comments/description of pollution impacts: ____________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ____________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ____________
Salamanders Observed? (Y/N) N Species observed (if known): ____________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ____________
Comments Regarding Biology: ____________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S043 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.18

LENGTH OF STREAM REACH (ft) 316.00 LAT 39.476166 LONG -81.622929 RIVER MILE ______

DATE 09/07/2023 SCORER AGS COMMENTS SOH-AGS-043

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	70
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	30	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 0.91

Bankfull Width Max=30: 0

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 Flows through wetland - dry channel at the time of survey

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: Plumb Run Distance from Evaluated Stream 0.48 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 60

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

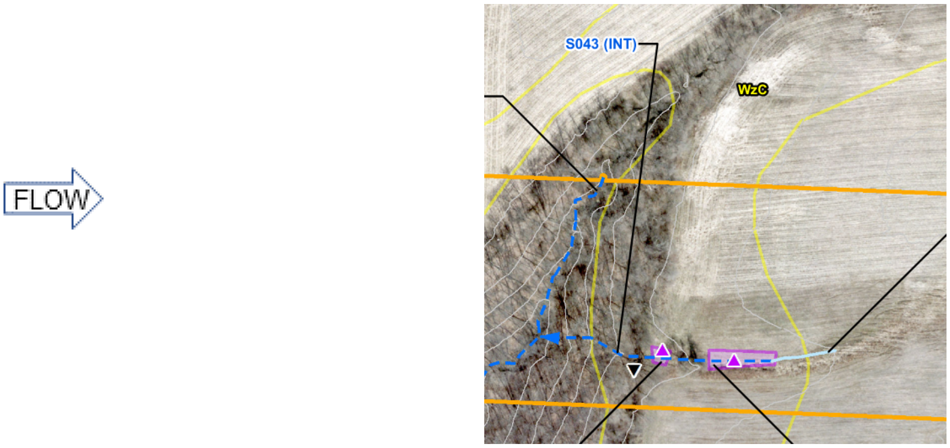
Salamanders Observed? (Y/N) N Species observed (if known): ________

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S044 RIVER BASIN ________ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.18

LENGTH OF STREAM REACH (ft) 388.00 LAT 39.476245 LONG -81.623318 RIVER MILE ________

DATE 09/07/2023 SCORER AGS COMMENTS SOH-AGS-044

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☑	SILT [3 pt]	30
☐☐	BOULDER (>256 mm) [16 pts]	20	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☑☐	COBBLE (65-256 mm) [12 pts]	50	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS moist channel

MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ________

AVERAGE BANKFULL WIDTH (meters) 2.13

Bankfull Width Max=30: 0

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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: Plumb Run Distance from Evaluated Stream 0.44 mi

☐ CWH Name: ______ Distance from Evaluated Stream ______

☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity? (Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______

Salamanders Observed? (Y/N) N Species observed (if known): ______

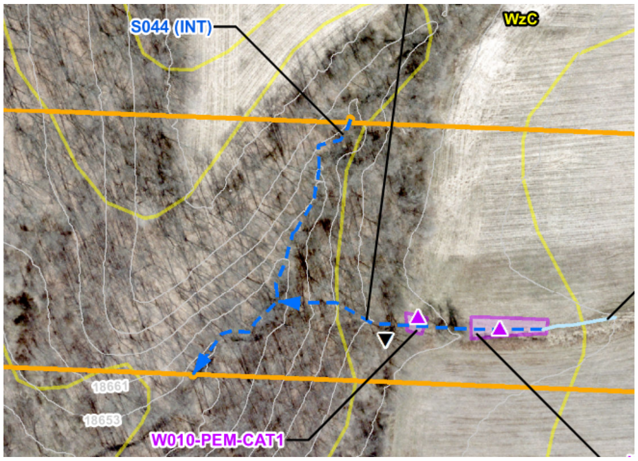
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______

Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S045 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.20

LENGTH OF STREAM REACH (ft) 358.00 LAT 39.476298 LONG -81.625017 RIVER MILE ______

DATE 09/07/2023 SCORER AGS COMMENTS SOH-AGS-045

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	65
☐☐	BOULDER (>256 mm) [16 pts]	5	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	30	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 2.54

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 2.29

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ∗ NOTE: River Left (L) and Right (R) as looking downstream∗

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 Immature forest in cow pasture

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 Low flow

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Plumb Run Distance from Evaluated Stream 0.31 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming/Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) Y Species observed (if known): ________

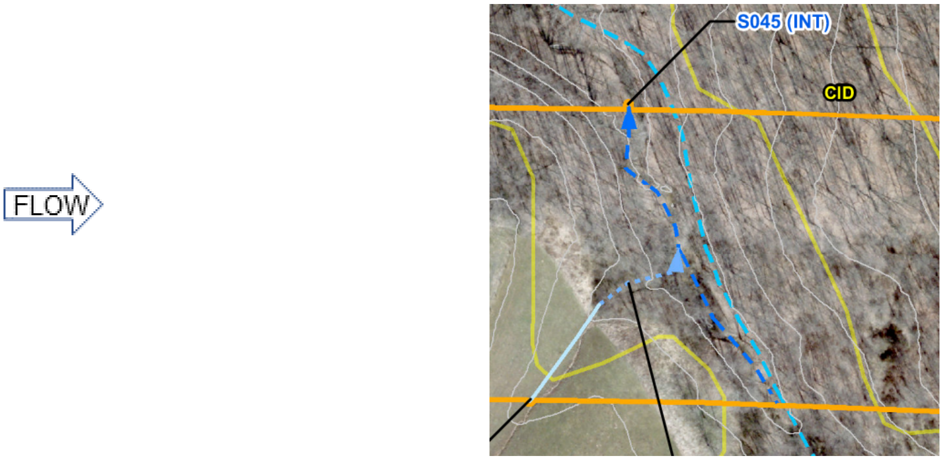
Salamanders Observed? (Y/N) N Species observed (if known): ________

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S046 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.05

LENGTH OF STREAM REACH (ft) 112.00 LAT 39.476430 LONG -81.625149 RIVER MILE ______

DATE 09/07/2023 SCORER AGS COMMENTS SOH-AGS-046

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☑☐	**SILT [3 pt]**	50
☐☐	BOULDER (>256 mm) **[16 pts]**	10	☐☐	LEAF PACK/WOODY DEBRIS **[3 pts]**	
☐☐	BEDROCK **[16 pts]**		☐☐	FINE DETRITUS **[3 pts]**	
☐☑	COBBLE (65-256 mm) **[12 pts]**	40	☐☐	CLAY or HARDPAN **[0 pt]**	
☐☐	GRAVEL (2-64 mm) **[9 pts]**		☐☐	MUCK **[0 pts]**	
☐☐	SAND (<2 mm) **[6 pts]**		☐☐	ARTIFICIAL **[3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 0.91

Bankfull Width Max=30: 0

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Plumb Run Distance from Evaluated Stream 0.33 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 70

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

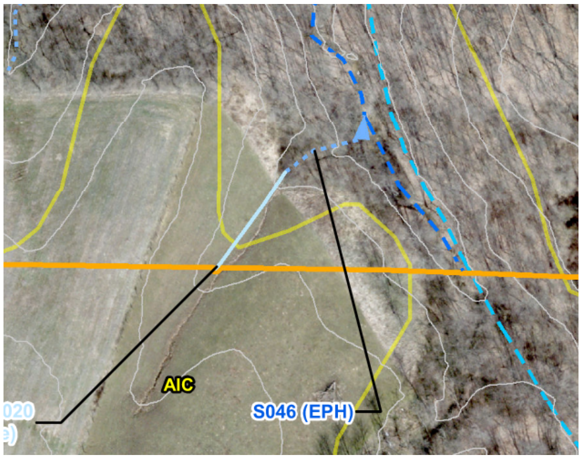
(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S047 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.07
LENGTH OF STREAM REACH (ft) 126.00 LAT 39.476795 LONG -81.626408 RIVER MILE ______
DATE 09/07/2023 SCORER AGS COMMENTS SOH-AGS-047

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

HHEI Metric Points

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	70
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	20
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	10	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 0.91

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☑	☑	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Plumb Run Distance from Evaluated Stream 0.28 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

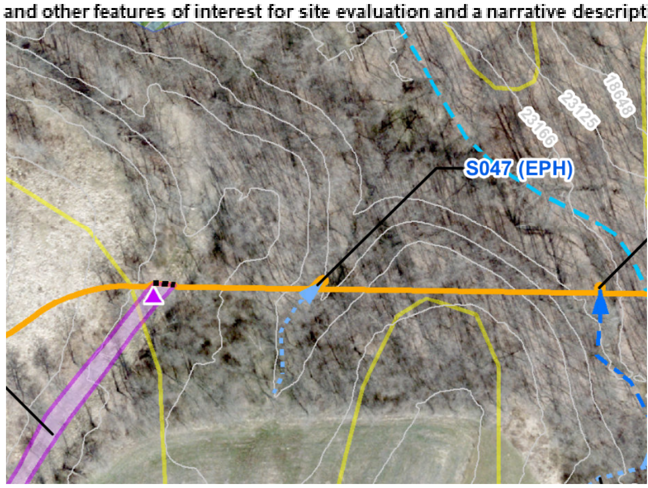
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Ohio

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S048 RIVER BASIN 050400040903 RIVER CODE ______ DRAINAGE AREA (mi²) 0.12
LENGTH OF STREAM REACH (ft) 395.00 LAT 39.476604 LONG -81.617130 RIVER MILE ______
DATE 09/05/2023 SCORER BLG COMMENTS SOH-BLG-001

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☑	SILT [3 pt]	30
☐☐	BOULDER (>256 mm) [16 pts]		☑☑	LEAF PACK/WOODY DEBRIS [3 pts]	50
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☑☑	GRAVEL (2-64 mm) [9 pts]	20	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 1

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☑	☑	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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
☑ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 1.0 mi
☐ CWH Name: ______ Distance from Evaluated Stream ______
☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ______

Elevated Turbidity? (Y/N): N Canopy (% open): ______

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y If not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______
Salamanders Observed? (Y/N) N Species observed (if known): ______
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______
Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S049 RIVER BASIN 050400040903 RIVER CODE ______ DRAINAGE AREA (mi²) 0.12

LENGTH OF STREAM REACH (ft) 396.00 LAT 39.472915 LONG -81.618819 RIVER MILE ______

DATE 09/05/2023 SCORER BLG COMMENTS SOH-BLG-002

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

HHEI Metric Points

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☑☑	**SILT [3 pt]**	50
☐☐	**BOULDER (>256 mm) [16 pts]**		☑☑	**LEAF PACK/WOODY DEBRIS [3 pts]**	5
☐☐	**BEDROCK [16 pts]**		☐☐	**FINE DETRITUS [3 pts]**	
☐☐	**COBBLE (65-256 mm) [12 pts]**		☐☐	**CLAY or HARDPAN [0 pt]**	
☑☑	**GRAVEL (2-64 mm) [9 pts]**	45	☐☐	**MUCK [0 pts]**	
☐☐	**SAND (<2 mm) [6 pts]**		☐☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 12

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

Substrate Max = 40: 18

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 10

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 1.2

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.9 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

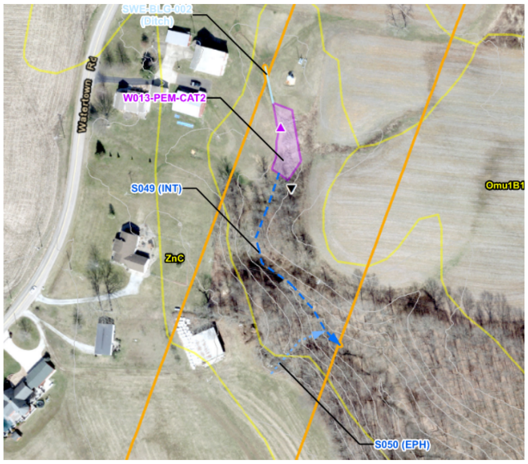
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S050 RIVER BASIN 050400040903 RIVER CODE ______ DRAINAGE AREA (mi²) 0.03

LENGTH OF STREAM REACH (ft) 135.00 LAT 39.472529 LONG -81.618677 RIVER MILE ______

DATE 09/05/2023 SCORER BLG COMMENTS SOH-BLG-003

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☑	SILT [3 pt]	35
☐☐	BOULDER (>256 mm) [16 pts]		☑☑	LEAF PACK/WOODY DEBRIS [3 pts]	15
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☑☑	GRAVEL (2-64 mm) [9 pts]	50	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 12

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.2

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.91 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

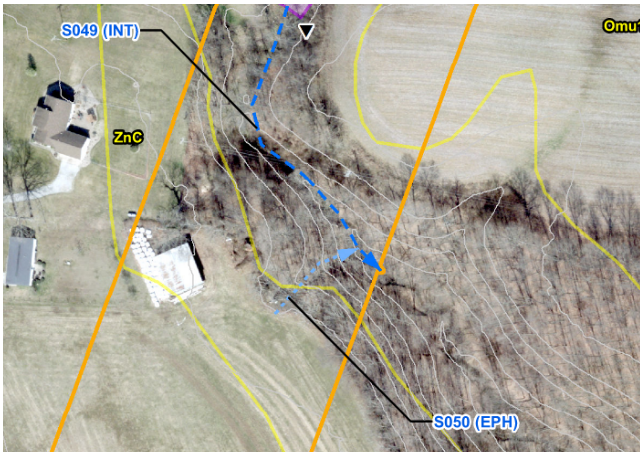
(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Ohio

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S051 RIVER BASIN 050400040903 RIVER CODE ____ DRAINAGE AREA (mi²) 0.12

LENGTH OF STREAM REACH (ft) 745.00 LAT 39.469565 LONG -81.620718 RIVER MILE ____

DATE 09/05/2023 SCORER BLG COMMENTS SOH-BLG-004

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☑	SILT [3 pt]	70
☐☐	BOULDER (>256 mm) [16 pts]		☑☑	LEAF PACK/WOODY DEBRIS [3 pts]	10
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☑☑	GRAVEL (2-64 mm) [9 pts]	20	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 12

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ____ MAXIMUM POOL DEPTH (centimeters): 20

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]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ____ AVERAGE BANKFULL WIDTH (meters) 2

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☑	☑	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.80 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

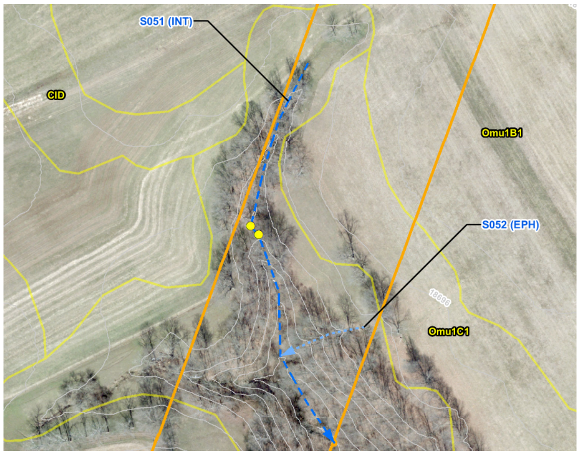
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S052 RIVER BASIN 050400040903 RIVER CODE ______ DRAINAGE AREA (mi²) 0.03
LENGTH OF STREAM REACH (ft) 162.00 LAT 39.469153 LONG -81.620365 RIVER MILE ______
DATE 09/05/2023 SCORER BLG COMMENTS SOH-BLG-005

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]		☑ ☑	SILT [3 pt]	15
☐ ☐	BOULDER (>256 mm) [16 pts]		☑ ☑	LEAF PACK/WOODY DEBRIS [3 pts]	75
☐ ☐	BEDROCK [16 pts]		☐ ☐	FINE DETRITUS [3 pts]	
☐ ☐	COBBLE (65-256 mm) [12 pts]		☐ ☐	CLAY or HARDPAN [0 pt]	
☑ ☑	GRAVEL (2-64 mm) [9 pts]	10	☐ ☐	MUCK [0 pts]	
☐ ☐	SAND (<2 mm) [6 pts]		☐ ☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 0.85

Bankfull Width Max=30: 0

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.87 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

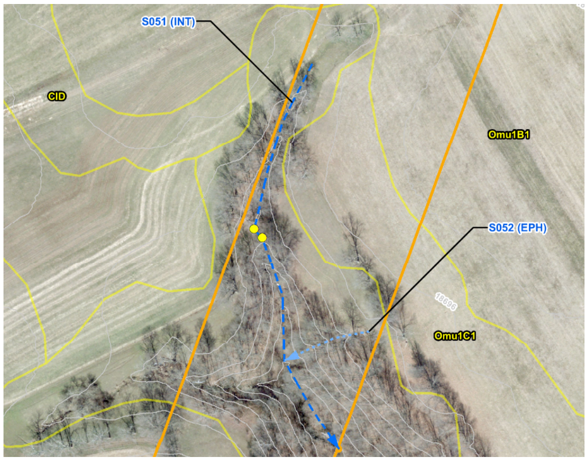
(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S053 RIVER BASIN 050400040903 RIVER CODE ______ DRAINAGE AREA (mi²) 0.03

LENGTH OF STREAM REACH (ft) 80.00 LAT 39.467788 LONG -81.620846 RIVER MILE ______

DATE 09/05/2023 SCORER BLG COMMENTS SOH-BLG-006

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☑	SILT [3 pt]	20
☐☐	BOULDER (>256 mm) [16 pts]		☑☑	LEAF PACK/WOODY DEBRIS [3 pts]	65
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☑☑	GRAVEL (2-64 mm) [9 pts]	15	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 0.85

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.84 mi

☐ CWH Name: ______ Distance from Evaluated Stream ______

☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ______

Elevated Turbidity? (Y/N): N Canopy (% open): ______

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______

Salamanders Observed? (Y/N) N Species observed (if known): ______

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______

Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S054 RIVER BASIN 050400040903 RIVER CODE ____ DRAINAGE AREA (mi²) 0.01

LENGTH OF STREAM REACH (ft) 78.00 LAT 39.466476 LONG -81.623577 RIVER MILE ____

DATE 09/05/2023 SCORER BLG COMMENTS SOH-BLG-007

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

HHEI Metric Points

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☑☑	**SILT [3 pt]**	25
☐☐	**BOULDER (>256 mm) [16 pts]**		☑☑	**LEAF PACK/WOODY DEBRIS [3 pts]**	40
☑☑	**BEDROCK [16 pts]**	35	☐☐	**FINE DETRITUS [3 pts]**	
☐☐	**COBBLE (65-256 mm) [12 pts]**		☐☐	**CLAY or HARDPAN [0 pt]**	
☐☐	**GRAVEL (2-64 mm) [9 pts]**		☐☐	**MUCK [0 pts]**	
☐☐	**SAND (<2 mm) [6 pts]**		☐☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 19

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

Substrate Max = 40 18 **A + B**

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ____ **AVERAGE BANKFULL WIDTH (meters)** 2

Bankfull Width Max=30 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.68 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Fleming NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

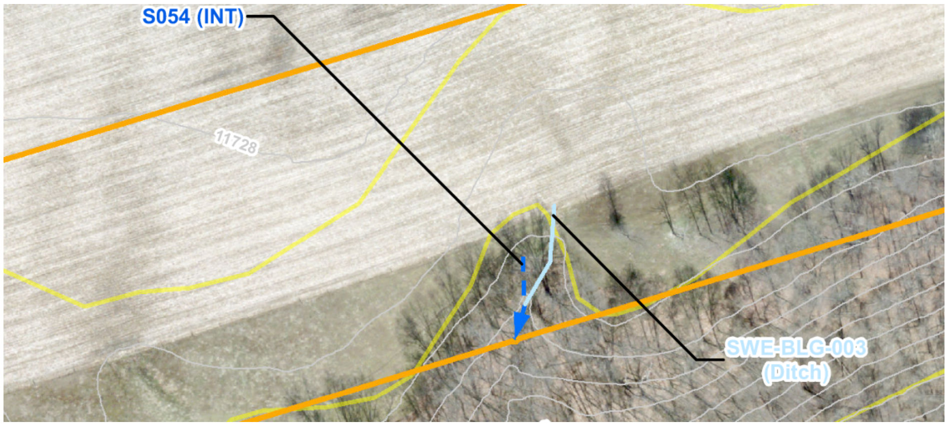
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S055 RIVER BASIN 050400040903 RIVER CODE ______ DRAINAGE AREA (mi²) 0.12

LENGTH OF STREAM REACH (ft) 654.00 LAT 39.465965 LONG -81.627464 RIVER MILE ______

DATE 09/05/2023 SCORER BLG COMMENTS SOH-BLG-008

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>256 mm) [16 pts]		☑☑	LEAF PACK/WOODY DEBRIS [3 pts]	15
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☑☑	COBBLE (65-256 mm) [12 pts]	25	☐☐	CLAY or HARDPAN [0 pt]	
☑☑	GRAVEL (2-64 mm) [9 pts]	60	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 21

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.2

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.55 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S057 RIVER BASIN 050400040903 RIVER CODE ______ DRAINAGE AREA (mi²) 0.07

LENGTH OF STREAM REACH (ft) 300.00 LAT 39.464762 LONG -81.628108 RIVER MILE ______

DATE 09/06/2023 SCORER BLG COMMENTS SOH-BLG-010

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>256 mm) [16 pts]		☑☑	LEAF PACK/WOODY DEBRIS [3 pts]	10
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☑☑	COBBLE (65-256 mm) [12 pts]	10	☐☐	CLAY or HARDPAN [0 pt]	
☑☑	GRAVEL (2-64 mm) [9 pts]	80	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 21

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 1.2

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.46 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

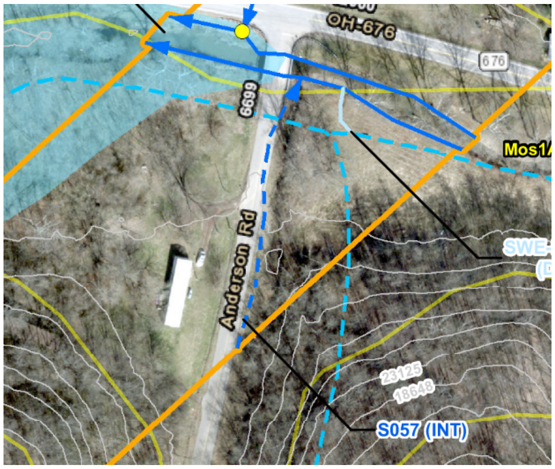
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Ohio Environmental Protection Agency

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S058 RIVER BASIN 050400040903 RIVER CODE ____ DRAINAGE AREA (mi²) 0.20

LENGTH OF STREAM REACH (ft) 941.00 LAT 39.460909 LONG -81.639010 RIVER MILE ____

DATE 09/06/2023 SCORER BLG COMMENTS SOH-BLG-011

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☑☑	**SILT [3 pt]**	75
☐☐	BOULDER (>256 mm) **[16 pts]**		☑☑	LEAF PACK/WOODY DEBRIS **[3 pts]**	10
☐☐	BEDROCK **[16 pts]**		☐☐	FINE DETRITUS **[3 pts]**	
☐☐	COBBLE (65-256 mm) **[12 pts]**		☐☐	CLAY or HARDPAN **[0 pt]**	
☑☑	GRAVEL (2-64 mm) **[9 pts]**	15	☐☐	MUCK **[0 pts]**	
☐☐	SAND (<2 mm) **[6 pts]**		☐☐	ARTIFICIAL **[3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 12

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 8

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ____ **AVERAGE BANKFULL WIDTH (meters)** 0.85

Bankfull Width Max=30: 0

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.05 mi
☐ CWH Name: ______ Distance from Evaluated Stream ______
☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ______

Elevated Turbidity? (Y/N): N Canopy (% open): ______

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______

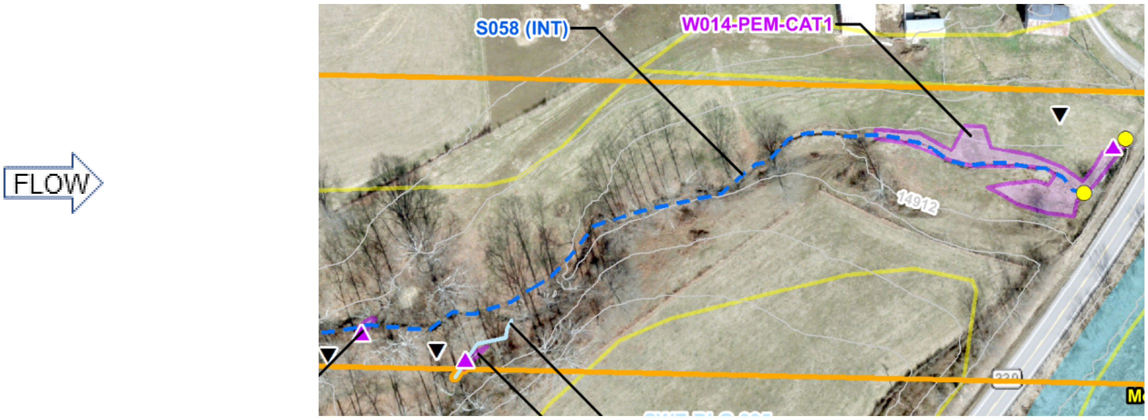
Salamanders Observed? (Y/N) N Species observed (if known): ______

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______

Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S059 RIVER BASIN 050400040903 RIVER CODE ______ DRAINAGE AREA (mi²) 0.20

LENGTH OF STREAM REACH (ft) 316.00 LAT 39.464564 LONG -81.641173 RIVER MILE ______

DATE 09/06/2023 SCORER BLG COMMENTS SOH-BLG-012

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	**BLDR SLABS [16 pts]**		☐ ☐	**SILT [3 pt]**	
☐ ☐	**BOULDER (>256 mm) [16 pts]**		☐ ☐	**LEAF PACK/WOODY DEBRIS [3 pts]**	
☐ ☐	**BEDROCK [16 pts]**		☐ ☐	**FINE DETRITUS [3 pts]**	
☑ ☑	**COBBLE (65-256 mm) [12 pts]**	20	☐ ☐	**CLAY or HARDPAN [0 pt]**	
☑ ☑	**GRAVEL (2-64 mm) [9 pts]**	80	☐ ☐	**MUCK [0 pts]**	
☐ ☐	**SAND (<2 mm) [6 pts]**		☐ ☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 21

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18

A + B

2. Maximum Pool Depth (*Measure the* ***maximum*** *pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______

MAXIMUM POOL DEPTH (centimeters): 24

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______

AVERAGE BANKFULL WIDTH (meters) 5

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☑	☑	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.21 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) Y Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) Y Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

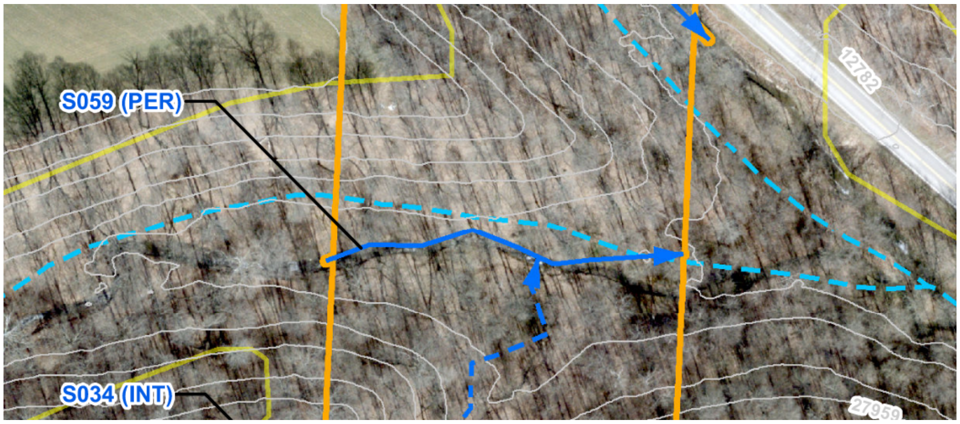
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Ohio

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S060 RIVER BASIN 050400040903 RIVER CODE ______ DRAINAGE AREA (mi²) 0.78

LENGTH OF STREAM REACH (ft) 421.00 LAT 39.465410 LONG -81.641104 RIVER MILE ______

DATE 09/06/2023 SCORER BLG COMMENTS SOH-BLG-013

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>256 mm) [16 pts]		☑☑	LEAF PACK/WOODY DEBRIS [3 pts]	10
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☑☑	COBBLE (65-256 mm) [12 pts]	10	☐☐	CLAY or HARDPAN [0 pt]	
☑☑	GRAVEL (2-64 mm) [9 pts]	80	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 21

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______

MAXIMUM POOL DEPTH (centimeters): 24

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______

AVERAGE BANKFULL WIDTH (meters) 5

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.19 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: Watertown

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 08/25/2023 Quantity: 0.34in

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): ________

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

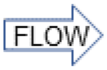
BIOLOGICAL OBSERVATIONS

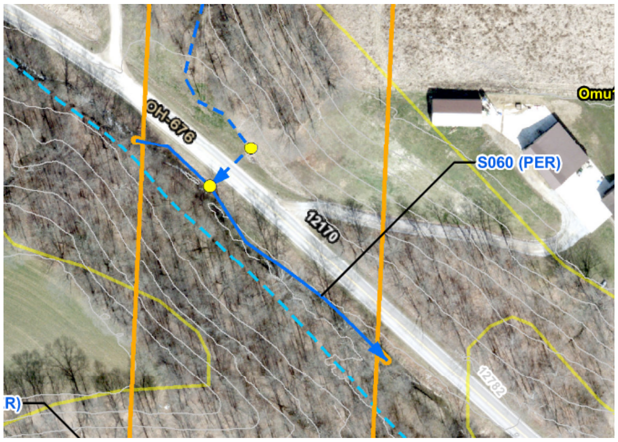
(Record all observations below)

Fish Observed? (Y/N) Y Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) Y Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location





APPENDIX E

USFWS 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

November 7, 2023

Project Code: 2024-0006355

Dear Kristen L. Vonderwish:

The U.S. Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened, endangered, and proposed species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves, rock crevices and abandoned mines.

Federally Proposed Species: On September 14, 2022, the Service proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the ESA. The bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. During spring, summer, and fall, this species roosts primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. While white-nose syndrome is by far the most serious threat to the tricolored bat, other threats now have an increased significance due to the dramatic decline in the species' population. These threats include disturbance to bats in roosting, foraging, commuting, and over-wintering habitats. Mortality due to collision with wind turbines, especially during migration, has also been documented across their range. Conservation measures for the Indiana bat and northern long-eared bat will also help to conserve the tricolored bat.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥3 inches dbh, we recommend avoiding tree removal wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats and northern long-eared bats. If Indiana bats and northern long-eared bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.ohio.gov.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Scott Hicks

Scott Hicks
Acting Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Eileen Wyza, ODNR-DOW

gai consultants

Canton Office
5399 Lauby Road, Suite 120
North Canton, OH 44720

T 330.433.2680

February 9, 2024

Project R200062.71

Ms. Shannon Hemmerly
Environmental Specialist- Senior
American Electric Power Service Corporation
8500 Smiths Mill Road
New Albany, Ohio 43054

Ecological Survey Report
Addendum No. 1 Letter Report
AEP Ohio Transmission Company
West Watertown-Watertown 138-kV Transmission Line Project
Washington County, Ohio

Dear Ms. Hemmerly:

During August and September of 2023, GAI Consultants, Inc. (GAI) conducted ecological field surveys on behalf of American Electric Power Ohio Transmission Company (AEP) for the West Watertown–Watertown 138-kV Transmission Line Project (Project) in Washington County, Ohio. The results of the ecological survey were previously included in an Ecological Survey Report (ESR) that was provided to AEP in November 2023. The ESR included the methods and results of the ecological field survey.

Subsequent design changes to the Project resulted in a change to the proposed alignment of the northern transmission route option. The reroute consists of a 0.55-mile segment with a 300-foot-wide corridor. A supplemental wetland and stream study was conducted on the expanded study area on December 14, 2023. The expanded study area and initial study area was combined into one continuous polygon study area. No streams or wetlands were identified in the additional study area.

Maps depicting the studied area are included as Attachment 1. Site Photographs are included as Attachment 2.

In addition, the Ohio Department of Natural Resources (ODNR) correspondence letter was received after the ERS was submitted to AEP in November 2023. Included in this addendum is a summary of the ODNR response. A complete list of rare, threatened, and endangered (RTE) species identified by the ODNR and United States Fish and Wildlife Service (USFWS) is included as Attachment 3.

ODNR RTE Summary

The ODNR consultation letter was submitted on November 6, 2023. A response from the ODNR was received on December 5, 2023 (ODNR 23-1350) and is included in Attachment 4.

The ODNR stated that the entire state of OH is within the range of the Indiana bat and the tricolored bat, each are state endangered species. The tricolored bat is also proposed to be listed as a federally endangered species. The ODNR stated the Project is within the vicinity of records for the northern long-eared bat and the little brown bat (Myotis lucifugus), both are state endangered species. The ODNR stated that because the presence of state endangered bat species has been established in the area, summer tree cutting is not recommended, and additional summer surveys would not constitute presence/absence in the area. However, limited summer tree cutting may be acceptable after further consultation with the ODNR. Potential impacts to these species will be determined by the schedule of Project construction and extent of tree clearing needed and are anticipated to be avoided through winter tree cutting. GAI completed a review of the ODNR's Division of Mineral Resources data identifying the location of abandoned mine openings within 0.25-mile of the Project's electric line and none occur.

The ODNR also stated that the Project is within the range of state-listed species, including thirteen mussels, eleven fishes, and two amphibians. Because no in-water work is proposed in a perennial stream or primary floodplains, the Project is not likely to impact these aquatic species.

Lastly, the project is within range of the timber rattlesnake (*Crotalus horridus*), a state endangered species and a federal species of concern. The ODNR stated that due to the location, the type of habitat with the project area, and the type of work proposed, this project is not likely to impact this species.

We appreciate working with you on this Project. If you have any questions or need additional information, please contact one or both of us at 330.323.1894 or j.noble@gaiconsultants.com and 234.203.0771 or k.vonderwish@gaiconsultants.com.

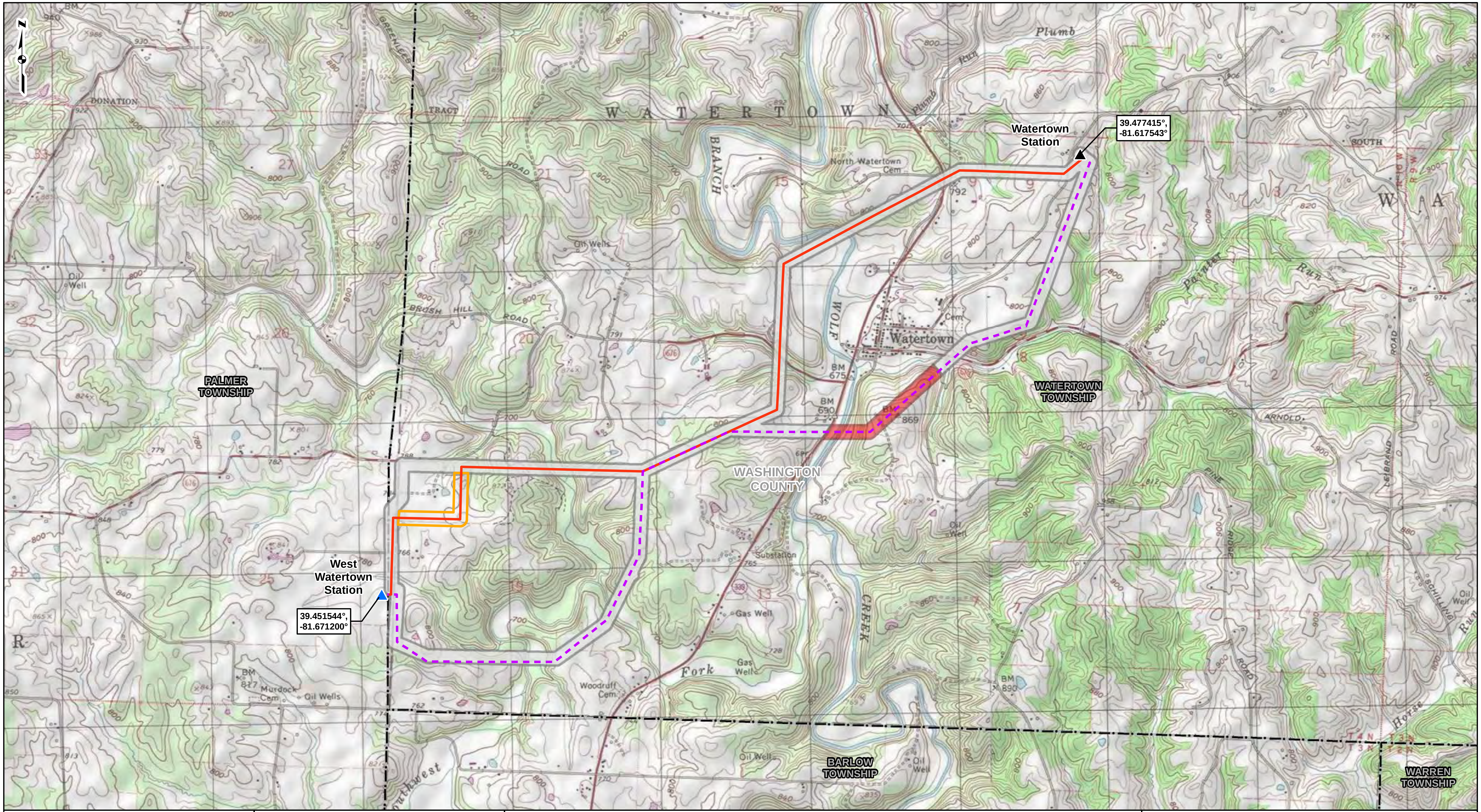
Sincerely,
GAI Consultants, Inc.

Joshua J. Noble
Senior Environmental Manager

Kristen L. Vonderwish
Senior Project Environmental Specialist

Attachments: Attachment 1 (Project Maps)
Attachment 2 (Photographic Log)
Attachment 3 (ODNR and USFWS RTE Species and Habitat Review Results)
Attachment 4 (ODNR Correspondence)

ATTACHMENT 1
Project Maps



PROJECT LOCATION

WASHINGTON COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: WATERTOWN (1976) AND FLEMING (1961), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 02/2024.

LEGEND

- ▲ Existing Station
- ▲ Proposed Station
- — Proposed Preferred Transmission Line
- - - Proposed Alternate Transmission Line
- ☐ Addendum Study Area
- ▨ Original Study Area
- 🟥 No Access (Not Studied)
- -·- Township Boundary

0 1,000 2,000 4,000 Feet

FIGURE 1
PROJECT LOCATION MAP

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP

DATE: 2/7/2024
APPROVED:

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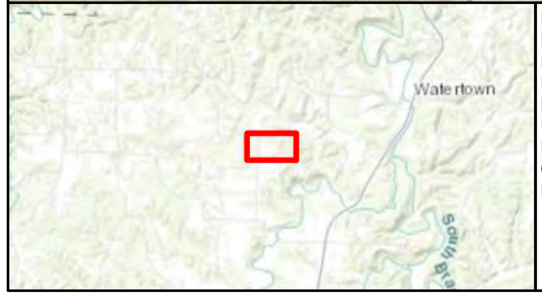

REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2022. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 02/2024. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2022. NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2022. 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2022. CONTOUR DATA, DERIVED FROM USGS DEMs, DOWNLOADED 2023.

LEGEND

▲ Soil Test Pit

● Existing Culvert

— Stormwater Feature

Stream Type:
- ⇢ Ephemeral
- ⇢ Intermittent
- → Perennial

▭ Addendum Study Area

▭ Original Study Area

10-Ft Contour

-- NHD Stream

▨ NWI Wetland

▭ FEMA Floodplain

0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
DATE: 2/7/2024
CHECKED: JAP
APPROVED:

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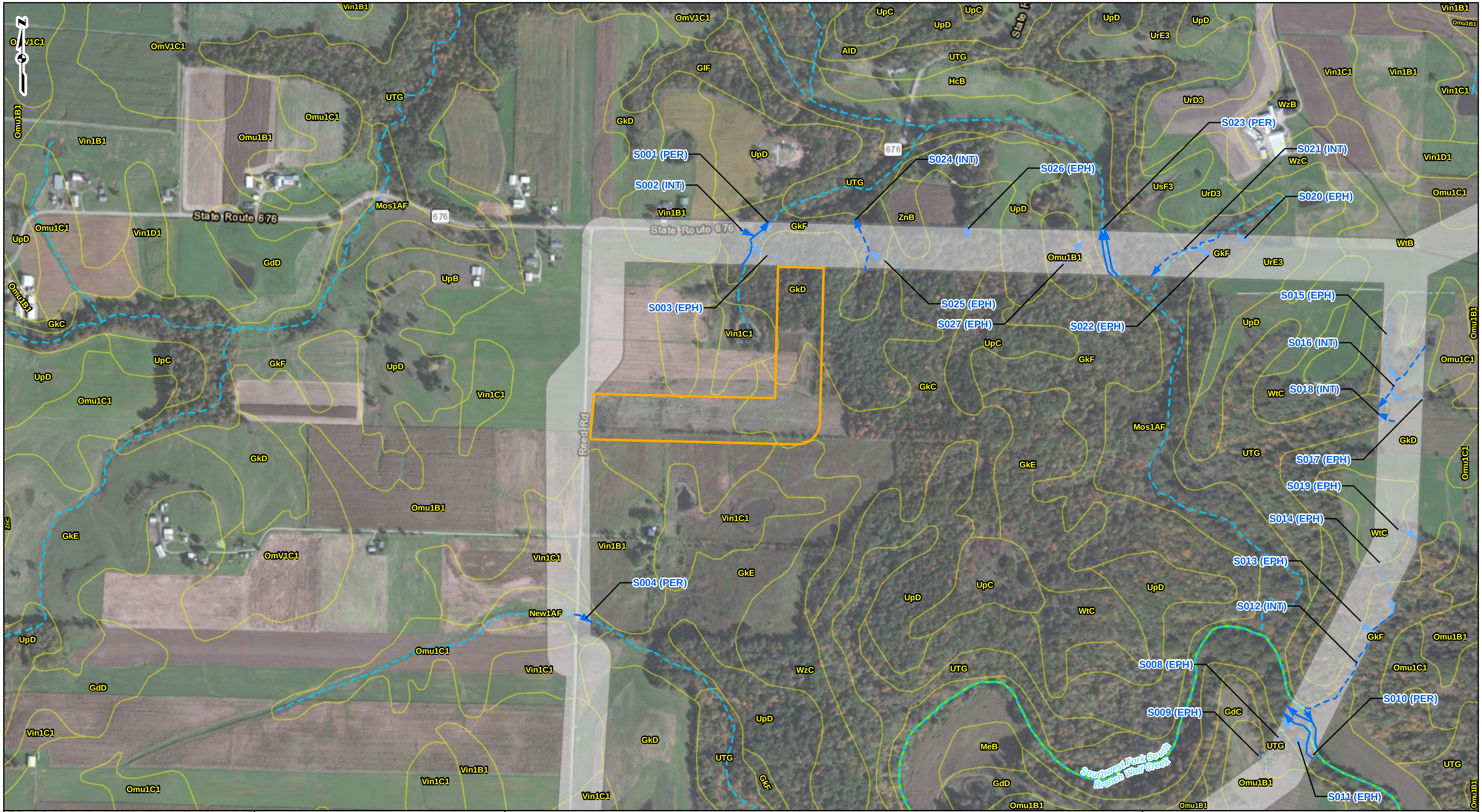

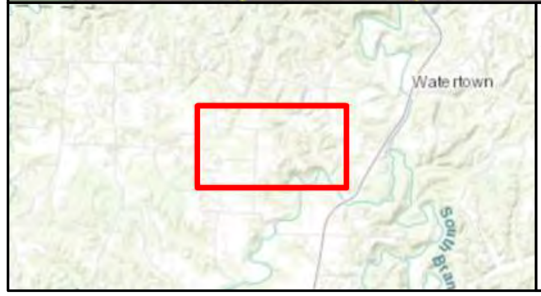

REFERENCE: WORLD IMAGERY (CLARITY), ESRI, ARCGIS ONLINE, ACCESSED 02/2024. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 02/2024. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2022. STREAM ELIGIBILITY, OHIO EPA, 401 WATER QUALITY CERTIFICATION, 2023. AQUATIC LIFE USE STREAMS, OHIO EPA, 2019. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE, USDA/NRCS, 2023.

LEGEND

Stream Type:
- Ephemeral
- Intermittent
- Perennial

- Addendum Study Area
- Original Study Area
- NHD Stream
- Aquatic Life Use Stream

- Soil Type Boundary

OH EPA Stream Eligibilty:
- Eligible
- Ineligible
- Possibly Eligible

0 300 600 1,200 Feet

FIGURE 3
STREAM ELIGIBILITY MAP

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: ATG
CHECKED: JAP
DATE: 2/7/2024
APPROVED:

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Attachment 2
Photographic Log

Photograph 1. Representative upland habitat

Photograph 2. Representative upland habitat

Photograph 3. Representative upland habitat

Photograph 4. Representative upland habitat

Photograph 5. Representative upland habitat

Photograph 6. Representative upland habitat

Attachment 3
ODNR and USFWS RTE Species and Habitat Review Results

ODNR and USFWS RTE Species and Habitat Review Results

Species	State Listed Status[1]	Federal Listed Status[1]	Typical Habitat	Habitat Observed	Impacts to Habitat/Species Anticipated?	Potential Impacts and Avoidance Dates
Amphibians						
Eastern spadefoot[2] *Scaphiopus holbrookii*	E	-	Sandy soils that are associated with river valleys; breeding habitats may include flooded agricultural fields or other water holding depressions.	No	No; Per ODNR response, the project is not likely to impact this species	-
Eastern Hellbender[2] *Cryptobranchus alleganiensis*	E	-	Perennial streams with large flat rocks.	No	No; In-stream work is not proposed in perennial streams	-
Bats						
Indiana bat[2, 3] *Myotis sodalis*	E	E	Trees >3” dbh, caves abandoned mines, wooded areas with loose tree bark or dead or dying trees.	Yes	No; Avoided with winter tree clearing	April 1 to September 30
Little brown bat[2] *Myotis lucifugus*	E	-	Roost sites can be trees, rock crevices, caves, mines, and buildings.	Yes	No; Avoided with winter tree clearing	April 1 to September 30
Northern long-eared bat[2, 3] *Myotis septentrionalis*	E	E	Roost in cavities or in crevices of both live trees and snags; Hibernate in caves and mines with constant temperatures, high humidity, and no air currents.	Yes	No; Avoided with winter tree clearing	April 1 to September 30
Tricolored bat[2, 3] *Perimyotis subflavus*	E	Proposed E	Roost in cavities or in crevices of both live trees and snags; Hibernate in caves and mines with constant temperatures, high humidity, and no air currents.	Yes	No; Avoided with winter tree clearing	April 1 to September 30
Fish						
American Eel[2] *Anguilla rostrata*	T	-	Occur most often in moderate or large rivers with continuous flow and moderately clear water.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
Blue Sucker[2] *Cycleptus elongatus*	T	-	Inhabitant of deep swiftly flowing chutes or channels of large rivers; fast gravel bottomed chutes.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
Ohio Lamprey[2] *Ichthyomyzon bdellium*	E	-	Freshwater species inhabiting warmwater habitats in the Ohio River Basin; prefer slow areas with soft substrates and high detrital content.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
Pugnose minnow[2] *Opsopoeodus emiliae*	E	-	Clear water with aquatic vegetation where the bottom is comprised of organic debris or sand.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30

Species	State Listed Status[1]	Federal Listed Status[1]	Typical Habitat	Habitat Observed	Impacts to Habitat/Species Anticipated?	Potential Impacts and Avoidance Dates
Fish (continued)						
Goldeneye[2] *Hiodon alosoides*	E	-	Found in large rivers and are rather tolerant to murky waters from clay silts.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
Mountain Madtom[2] *Noturus eleutherus*	T	-	Found in deep swift riffles of large rivers; usually found in and around cobbles and boulders.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
Northern Madtom[2] Noturus stigmosus	E	-	Found in deep swift riffles of large rivers; usually found in and around cobbles and boulders.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
Western banded killifish[2] *Fundulus diaphanus menona*	E	-	Found in areas with an abundance of rooted aquatic vegetation, clear waters, and with substrates of clean sand or organic debris free of silt.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
Channel Darter[2] *Percina copelandi*	T	-	Found in large coarse sand or fine gravel bars in large rivers or along the shore of Lake Erie.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
Paddlefish[2] *Polyodon spathula*	T	-	Slow moving water of large rivers or reservoirs.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
River darter[2] *Percina shumardi*	T	-	Rivers and large streams, preferring deep, fast-flowing riffles with cobble and boulder substrates.	No	No; In-stream work is not proposed in perennial streams	March 15 to June 30
Mussels						
Butterfly[2] *Ellipsaria lineolata*	E	-	Large rivers with swift currents in sand or gravel substrates.	No	No; In-stream work is not proposed in perennial streams	-
Fanshell[2] *Cyprogenia stegaria*	E	FE	A riverine species, occasionally in large creeks, in stable cobble and sand.	No	No; In-stream work is not proposed in perennial streams	-
Elephant-ear[2] *Elliptio crassidens*	E	-	Primarily inhabits large rivers in mud, sand, or fine gravel.	No	No; In-stream work is not proposed in perennial streams	-
Long-solid[2] *Fusconaia subrotunda*	E	-	Shows a preference for sand and gravel in streams and small rivers; but also, may be found in coarse gravel in larger rivers.	No	No; In-stream work is not proposed in perennial streams	-
Pink Mucket[2] *Lampsilis abrupta*	E	E	Found inn mud and sand and in shallow riffles and shoals swept free of silt in major rivers and tributaries.	No	No; In-stream work is not proposed in perennial streams	-
Sharp-ridged pocketbook[2] *Lampsilis ovata*	E	-	Found in larger rivers with loose to firmly packed sand, gravel-sand, or silty sand substrates.	No	No; In-stream work is not proposed in perennial streams	-
Snuffbox[2] *Epioblasma triquetra*	E	FE	Sand, gravel, or cobble substrates in swift small and medium-sized rivers.	No	No; in-water work in perennial streams is not planned	-
Washboard[2] *Megalonaias nervosa*	E	-	Rivers, occasionally straying into large creeks, in muddy sand and cobble.	No	No; In-stream work is not proposed in perennial streams	-
Sheepnose[2] *Plethobasus cyphyus*	E	FE	Rivers, creeks, and large lakes in stable sand and cobble.	No	No; In-stream work is not proposed in perennial streams	-

Species	State Listed Status[1]	Federal Listed Status[1]	Typical Habitat	Habitat Observed	Impacts to Habitat/Species Anticipated?	Potential Impacts and Avoidance Dates
Mussels (continued)						
Ohio Pigtoe[2] *Pleurobema cordatum*	E	-	Medium to large rivers in sand or gravel in areas with moderate flow.	No	No; In-stream work is not proposed in perennial streams	-
Pyramid Pigtoe[2] *Pleurobema rubrum*	E	-	A river species, very rarely in large creeks, in stable sand and cobble.	No	No; In-stream work is not proposed in perennial streams	-
Monkeyface[2] *Theliderma metanevra*	E	-	Rivers, in stable sand and cobble.	No	No; In-stream work is not proposed in perennial streams	-
Salamander Mussel[2] *Simpsonaias ambigua*	T	-	This is a species of rivers, creeks and large lakes, often under large flat rocks with its host.	No	No; In-stream work is not proposed in perennial streams	-
Reptiles						
Timber rattlesnake[2] *Crotalus horridus*	E	FSC	Woodlands. Dry slopes and rocky outcrops.	Yes	No; Per ODNR response, the project is not likely to impact this species	-

Notes:

[1] E = state endangered; T = state threatened; SC = state species of concern; FE = federal endangered; FT = federal threatened; FSC = federal species of concern. FC = federal candidate.

[2] ODNR comments included in their response, dated December 5, 2023.

[3] USFWS comments included in their response, dated November 7, 2023.

Attachment 4
ODNR Correspondence

Ohio Department of Natural Resources

MIKE DeWINE, GOVERNOR
MARY MERTZ, DIRECTOR

Office of Real Estate
Tara Paciorek, Chief
2045 Morse Road – Bldg. E-2
Columbus, OH 43229
Phone: (614) 265-6661
Fax: (614) 267-4764

December 5, 2023

Kristen Vonderwish
GAI Consultants
5399 Lauby Road, Suite 120
North Canton, Ohio 44720

Re: 23-1350_AEP- West Watertown-Watertown 138kV Transmission Line

Project: The proposed project involves the construction of a greenfield 138kV transmission line as part of the expansion of electric transmission infrastructure.

Location: The proposed project is located in Watertown and Palmer townships, Washington 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 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 species of bats

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the "*OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING*". If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS "*RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES*." If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

The project is within the range of the following listed mussel species:
Federally Endangered
fanshell (*Cyprogenia stegaria*)
sheepnose (*Plethobasus cyphyus*)
pink mucket (*Lampsilis orbiculata*)
snuffbox (*Epioblasma triquetra*)

State Endangered
butterfly (*Ellipsaria lineolata*)
Ohio pigtoe (*Pleurobema cordatum*)
elephant-ear (*Elliptio crassidens*)
pyramid pigtoe (*Pleurobema rubrum*)
long-solid (*Fusconaia maculata maculata*)
sharp-ridged pocketbook (*Lampsilis ovata*)
monkeyface (*Quadrula metanevra*)
washboard (*Megalonaias nervosa*)

State Threatened
Salamander Mussel (*Simpsonaias ambigua*)

This project must not have an impact on native mussels. This applies to both listed and non-listed species, as all species of mussel are protected in Ohio. Per the Ohio Mussel Survey Protocol (2022), all Group 2, 3, and 4 streams (Appendix A) require a mussel survey. Per the Ohio Mussel Survey Protocol, Group 1 streams (Appendix A) and unlisted streams with a watershed of 5 square miles or larger above the point of impact should be assessed using the Reconnaissance Survey for Unionid Mussels (Appendix B) to determine if mussels are present. Mussel surveys may be recommended for these streams as well. Therefore, if in-water work is planned in any

stream that meets any of the above criteria, the DOW recommends the applicant provide information to indicate no mussel impacts will occur. If this is not possible, the DOW recommends a professional malacologist conduct a mussel survey in the project area. If mussels that cannot be avoided are found in the project area, the DOW recommends a professional malacologist collect and relocate the mussels to suitable and similar habitat upstream of the project site. Mussel surveys and any subsequent mussel relocation should be done in accordance with the Ohio Mussel Survey Protocol. If there is no in-water work proposed, impacts to mussels are not likely.

The project is within the range of the following listed fish species:
State Endangered
goldeye (*Hiodon alosoides*)
pugnose minnow (*Opsopoeodus emiliae*)
northern madtom (*Noturus stigmosus*)
western banded killifish (*Fundulus diaphanus menona*)
Ohio lamprey (*Ichthyomyzon bdellium*)

State Threatened
American eel (*Anguilla rostrata*)
mountain madtom (*Noturus eleutherus*)
blue sucker (*Cycleptus elongatus*)
paddlefish (*Polyodon spathula*)
channel darter (*Percina copelandi*)
river darter (*Percina shumardi*)

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 timber rattlesnake (*Crotalus horridus*), a state endangered species, and a federal species of concern. The timber rattlesnake is a woodland species, utilizing dry slopes and rocky outcrops. In addition to using wooded areas, the timber rattlesnake utilizes sunlit gaps in the canopy for basking and deep rock crevices for overwintering. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. This long-lived, entirely aquatic salamander inhabits perennial streams with large flat rocks. In-water work in hellbender streams can reduce availability of large cover rocks and can destroy hellbender nests and/or kill adults and juveniles. The contribution of additional sediment to hellbender streams can smother large cover rocks and gravel/cobble substrate (used by juveniles), making them unsuitable for refuge and nesting. Projects that contribute to altered flow regimes (e.g., by increasing areas of impervious surfaces or modifying the floodplain) can also adversely affect hellbender habitat. Due to the location, this project is not likely to impact this species.

The project is within the range of the eastern spadefoot toad (*Scaphiopus holbrookii*), a state endangered species. This species is found in areas of sandy soils that are associated with river valleys. Breeding habitats may include flooded agricultural fields or other water holding depressions. Due to the location, the type of habitat within the project area, and the type of work proposed, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the US Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The local floodplain administrator should be contacted concerning the possible need for any floodplain permits or approvals for this project.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator

Canton Office
5399 Lauby Road, Suite 120
North Canton, OH 44720

T 330.433.2680

May 17, 2024

Project R200062.71

Mr. Jonathon Rose
Environmental Specialist- Senior
American Electric Power Service Corporation
8500 Smiths Mill Road
New Albany, Ohio 43054

Ecological Survey Report
Addendum No. 2 Letter Report
AEP Ohio Transmission Company
West Watertown-Watertown 138 kV Transmission Line Project
Washington County, Ohio

Dear Mr. Rose:

During August and September of 2023, GAI Consultants, Inc. (GAI) conducted ecological field surveys on behalf of American Electric Power Ohio Transmission Company (AEP) for the West Watertown–Watertown 138 kV Transmission Line Project (Project) in Washington County, Ohio. The results of the ecological survey were previously included in an Ecological Survey Report (ESR) that was provided to AEP in November 2023. The ESR included the methods and results of the ecological field survey.

Subsequent design changes to the Project resulted in a change to the proposed alignment of the northern transmission route option. The reroute consists of a 0.25-mile segment with a 300-foot-wide corridor. A supplemental wetland and stream study was conducted on the expanded study area on May 10, 2024. The expanded study area and initial study area was combined into one continuous polygon study area. Four new streams were identified, and two previously delineated streams were extended. No wetlands were identified in the additional study area.

Maps depicting the studied area and delineated aquatic resources are included as Attachment 1. HHEI forms are in Attachment 2, newly identified resources are listed in the Stream Resource Table (Table 1) included in Attachment 3, and photographs are included in Attachment 4.

We appreciate working with you on this Project. If you have any questions or need additional information, please contact one or both of us at 330.323.1894 or j.noble@gaiconsultants.com and 234.203.0771 or k.vonderwish@gaiconsultants.com.

Sincerely,

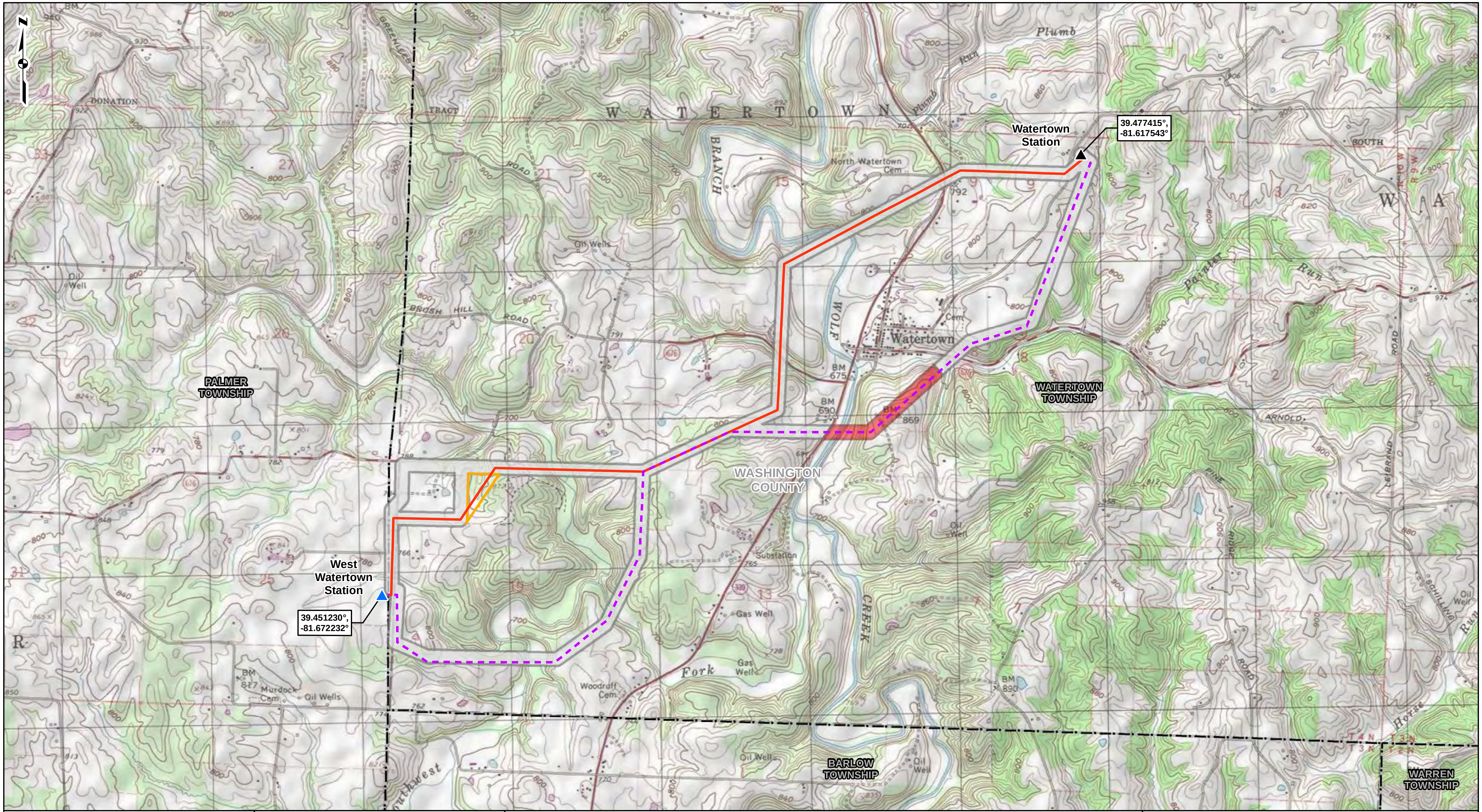
GAI Consultants, Inc.

Joshua J. Noble
Senior Environmental Manager

Kristen L. Vonderwish
Senior Project Environmental Specialist

Attachments:	Attachment 1 (Project Maps)
	Attachment 2 (HHEI Forms)
	Attachment 3 (Stream Resource Table)
	Attachment 4 (Photographs)

ATTACHMENT 1
Project Maps



PROJECT LOCATION

WASHINGTON COUNTY, OHIO

REFERENCE: USGS 7.5' TOPOGRAPHIC QUADRANGLES: WATERTOWN (1976) AND FLEMING (1961), OHIO, OBTAINED THROUGH ESRI USA TOPO MAPS, NATIONAL GEOGRAPHIC TOPO AND USGS, ACCESSED 05/2024.

LEGEND

- ▲ Existing Station
- ▲ Proposed Station
- ― Proposed Preferred Transmission Line
- - - Proposed Alternate Transmission Line
- ☐ Addendum Study Area
- ☐ Original Study Area
- 🟥 No Access (Not Studied)
- ☐ Township Boundary

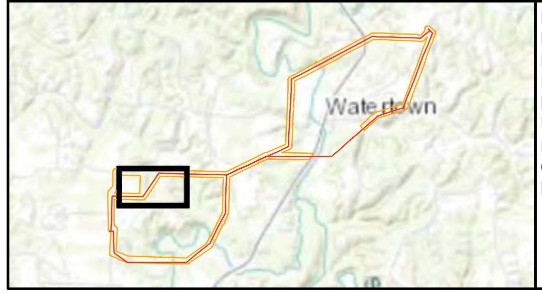
0 1,000 2,000 4,000 Feet

FIGURE 1
PROJECT LOCATION MAP

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: MTS
CHECKED: EFJ
DATE: 5/17/2024
APPROVED:

G:\R200062.71 - GIS\MXD\WDSIR\Addendum\Addendum_2024_05_17\Fig1_Project_Location_Addendum_2024_05_17.mxd



REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2022. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 05/2024. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2022. NATIONAL WETLAND INVENTORY (NWI) WETLANDS, USFWS, 2022. 100-YEAR FLOODPLAINS, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA), 2022. CONTOUR DATA, DERIVED FROM OSIP DEMs, DOWNLOADED 2023.

LEGEND

▲ Soil Test Pit
▼ Upland Data Point
▲ Wetland Data Point
● Existing Culvert
— Upland Drainage Feature

Stream Type:
Ephemeral
Intermittent
Perennial

▭ Wetland
▭ Addendum Study Area
▭ Original Study Area

— 10-Ft Contour
NHD Stream
▨ NWI Wetland
▭ FEMA Floodplain

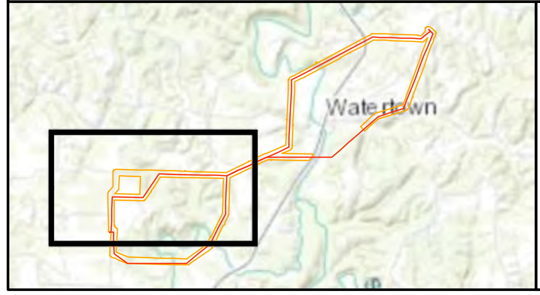
0 100 200 400
Feet

FIGURE 2
RESOURCE LOCATION MAP

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTIRC POWER

DRAWN BY: MTS
DATE: 5/17/2024
CHECKED: EFJ
APPROVED:

G:\R200062.71 - GIS\MXD\WDSIR\Addendum\Addendum_2024_05_17\Fig2_Resource_Location_Addendum_2024_05_17.mxd



REFERENCE: AERIAL IMAGERY, OHIO STATE IMAGERY PROGRAM (OSIP), 2022. WORLD TRANSPORTATION, ESRI, ARCGIS ONLINE, ACCESSED 05/2024. NATIONAL HYDROGRAPHY DATASET (NHD) STREAMS, USGS, 2022. STREAM ELIGIBILITY, OHIO EPA, 401 WATER QUALITY CERTIFICATION, 2023. AQUATIC LIFE USE STREAMS, OHIO EPA, 2019. SOIL SURVEY GEOGRAPHIC (SSURGO) DATABASE, USDA/NRCS, 2023.

LEGEND

Stream Type:
- ┈► Ephemeral
- ╌► Intermittent
- ─► Perennial

- 🟧 Addendum Study Area
- ▭ Original Study Area
- ╌ NHD Stream
- ─ Aquatic Life Use Stream

- ▭ Soil Type Boundary

OH EPA Stream Eligibilty:
- ▭ Eligible
- ▭ Ineligible
- ▭ Possibly Eligible

0 300 600 1,200
Feet

FIGURE 3
STREAM ELIGIBILITY MAP

WEST WATERTOWN-WATERTOWN
138 kV TRANSMISSION LINE PROJECT
AMERICAN ELECTRIC POWER

gai consultants

AMERICAN ELECTRIC POWER

DRAWN BY: MTS
DATE: 5/17/2024
CHECKED: EFJ
APPROVED:

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Attachment 2
HHEI Forms

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S001 RIVER BASIN ______ RIVER CODE ______ DRAINAGE AREA (mi²) 0.12

LENGTH OF STREAM REACH (ft) 384.00 LAT 39.458828 LONG -81.667112 RIVER MILE ______

DATE 08/30/2023 SCORER AGS COMMENTS SOH-AGS-001

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	**BLDR SLABS [16 pts]**		☐ ☐	**SILT [3 pt]**	35
☐ ☐	**BOULDER (>256 mm) [16 pts]**	30	☑ ☐	**LEAF PACK/WOODY DEBRIS [3 pts]**	
☑ ☐	**BEDROCK [16 pts]**		☐ ☐	**FINE DETRITUS [3 pts]**	
☐ ☑	**COBBLE (65-256 mm) [12 pts]**	35	☐ ☐	**CLAY or HARDPAN [0 pt]**	
☑ ☐	**GRAVEL (2-64 mm) [9 pts]**		☐ ☐	**MUCK [0 pts]**	
☐ ☐	**SAND (<2 mm) [6 pts]**		☐ ☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40 18 **A + B**

2. Maximum Pool Depth (*Measure the* ***maximum*** *pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 12.7

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 2.74

Bankfull Width Max=30 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 2.83 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE __ENTIRE__ WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

__BIOLOGICAL OBSERVATIONS__

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

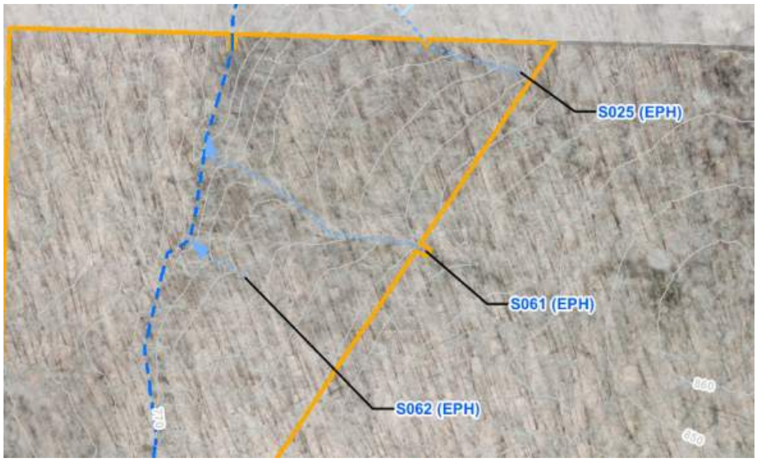
Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): ________

Comments Regarding Biology: Unknown species of water spider 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

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S002 RIVER BASIN ____ RIVER CODE ____ DRAINAGE AREA (mi²) 0.10
LENGTH OF STREAM REACH (ft) 103.00 LAT 39.459154 LONG -81.667190 RIVER MILE ____
DATE 08/30/2023 SCORER AGS COMMENTS SOH-AGS-002

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☑☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☑☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	50	☐☐	CLAY or HARDPAN [0 pt]	
☑☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15
TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points
Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ____ MAXIMUM POOL DEPTH (centimeters): 2.54

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ____ AVERAGE BANKFULL WIDTH (meters) 0.91

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ∗ NOTE: River Left (L) and Right (R) as looking downstream∗

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 2.83 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

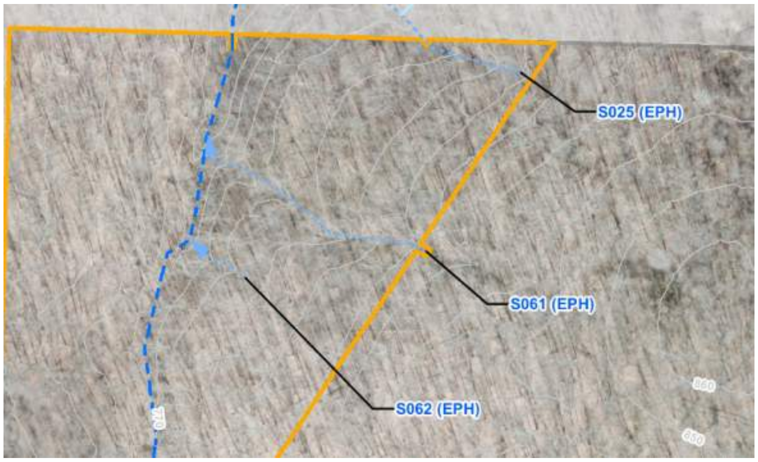
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.07 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

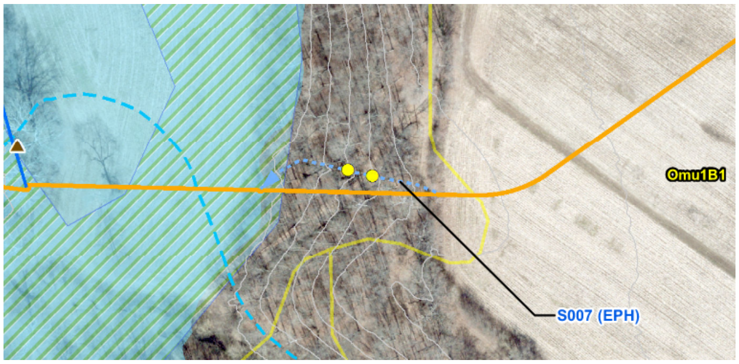
(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Ohio

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S008 RIVER BASIN ____ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.12
LENGTH OF STREAM REACH (ft) 438.00 LAT 39.449880 LONG -81.654941 RIVER MILE ____
DATE 08/31/2023 SCORER AGS COMMENTS SOH-AGS-008

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	40
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	25
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	35	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ____ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ____ AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☑	☑	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.01 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

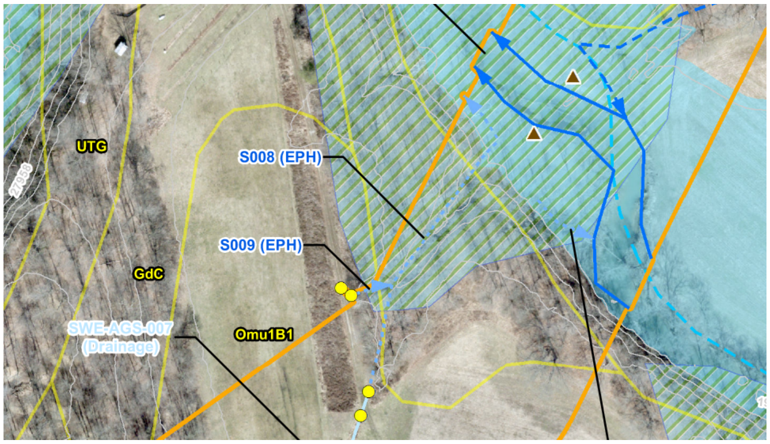
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S009 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.12

LENGTH OF STREAM REACH (ft) 69.00 LAT 39.449632 LONG -81.655248 RIVER MILE ______

DATE 08/31/2023 SCORER AGS COMMENTS SOH-AGS-009

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	70
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	30
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 0.91

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.01 mi
☐ CWH Name: ______ Distance from Evaluated Stream ______
☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures:Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______

Salamanders Observed? (Y/N) N Species observed (if known): ______

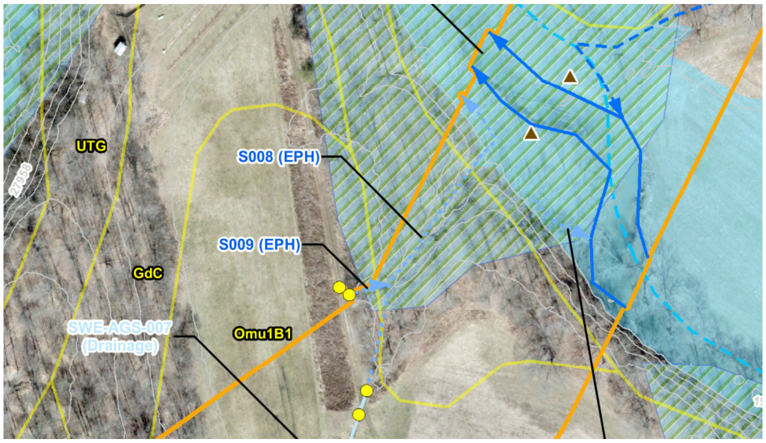
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______

Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S011 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.05

LENGTH OF STREAM REACH (ft) 88.00 LAT 39.449837 LONG -81.654425 RIVER MILE ______

DATE 08/31/2023 SCORER AGS COMMENTS SOH-AGS-011

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

HHEI Metric Points

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	20
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	30
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☑☐	SAND (<2 mm) [6 pts]	50	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 9

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 0.91

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L R	
☐☐	Wide >10m
☐☐	Moderate 5-10m
☑☑	Narrow <5m
☐☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L R		L R	
☐☐	Mature Forest, Wetland	☐☐	Conservation Tillage
☑☑	Immature Forest, Shrub or Old Field	☐☐	Urban or Industrial
☐☐	Residential, Park, New Field	☐☐	Open Pasture, Row Crop
☐☐	Fenced Pasture	☐☐	Mining or Construction

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.01 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

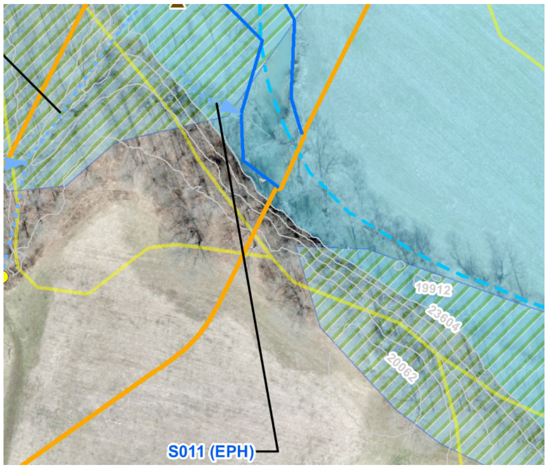
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S012 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.05
LENGTH OF STREAM REACH (ft) 1,033.00 LAT 39.450337 LONG -81.654215 RIVER MILE ______
DATE 08/31/2023 SCORER AGS COMMENTS SOH-AGS-012

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	50	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☑☐	SAND (<2 mm) [6 pts]	50	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 18
TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points
Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]	☐ 5 cm - 10 cm [15 pts]
☐ > 22.5 - 30 cm [30 pts]	☐ < 5 cm [5pts]
☐ > 10 - 22.5 cm [25 pts]	☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS moist channel
MAXIMUM POOL DEPTH (centimeters): 0

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 (> 4' 8" - 9' 7") [20 pts]	

COMMENTS ______
AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 Floodplain only present when gradient is more flat

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

☐ Stream Flowing	☐ Moist Channel, isolated pools, no flow (intermittent)
☐ Subsurface flow with isolated pools (interstitial)	☐ Dry channel, no water (ephemeral)

COMMENTS ______

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score ______ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.01 mi
☐ CWH Name: ______ Distance from Evaluated Stream ______
☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______

Salamanders Observed? (Y/N) N Species observed (if known): ______

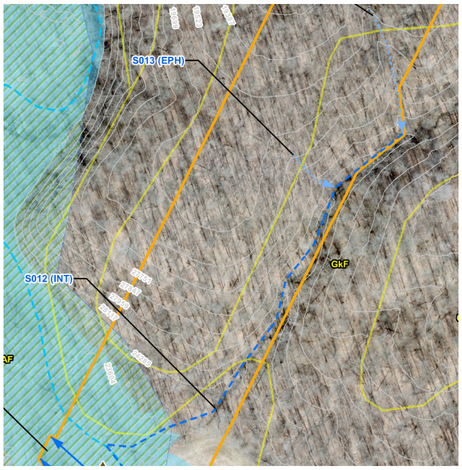
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______

Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S013 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.02

LENGTH OF STREAM REACH (ft) 112.00 LAT 39.451900 LONG -81.652833 RIVER MILE ______

DATE 08/31/2023 SCORER AGS COMMENTS SOH-AGS-013

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☑☐	**SILT [3 pt]**	55
☐☐	**BOULDER (>256 mm) [16 pts]**	5	☐☑	**LEAF PACK/WOODY DEBRIS [3 pts]**	45
☐☐	**BEDROCK [16 pts]**		☐☐	**FINE DETRITUS [3 pts]**	
☐☐	**COBBLE (65-256 mm) [12 pts]**		☐☐	**CLAY or HARDPAN [0 pt]**	
☐☐	**GRAVEL (2-64 mm) [9 pts]**		☐☐	**MUCK [0 pts]**	
☐☐	**SAND (<2 mm) [6 pts]**		☐☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 0.61

Bankfull Width Max=30: 0

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.15 mi

☐ CWH Name: ______ Distance from Evaluated Stream ______

☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures:Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______

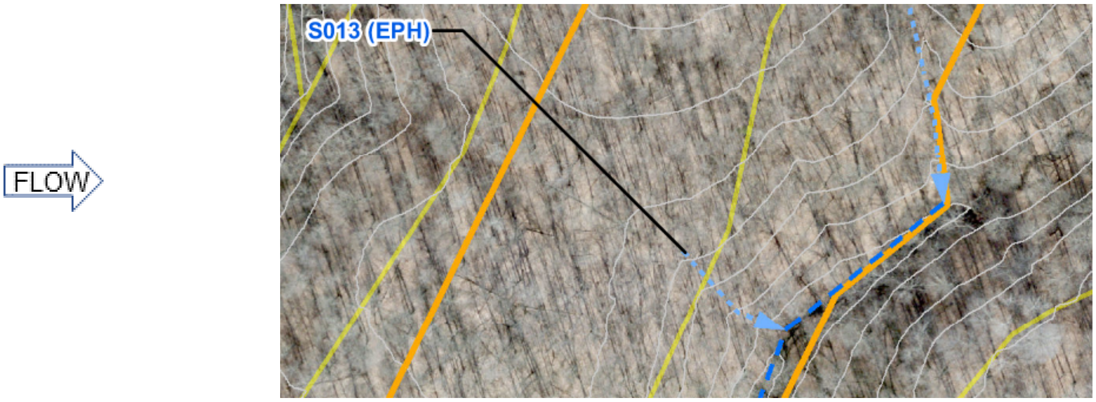
Salamanders Observed? (Y/N) N Species observed (if known): ______

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______

Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S014 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.03

LENGTH OF STREAM REACH (ft) 381.00 LAT 39.452651 LONG -81.652327 RIVER MILE ______

DATE 08/31/2023 SCORER AGS COMMENTS SOH-AGS-014

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	55
☐☐	BOULDER (>256 mm) [16 pts]	5	☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	45
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5pts]
☐	> 10 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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 (> 4' 8" - 9' 7") [20 pts]		

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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	☐	Moist Channel, isolated pools, no flow (intermittent)
☐	Subsurface flow with isolated pools (interstitial)	☐	Dry channel, no water (ephemeral)

COMMENTS ______

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐	None	☐	1.0	☐	2.0	☐	3.0
☐	0.5	☐	1.5	☐	2.5	☐	>3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? ☐ Yes ☑ No QHEI Score ________ (If Yes, Attach Completed QHEI form)

DOWNSTREAM DESIGNATED USE(S)

☑ WWH Name: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.19 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

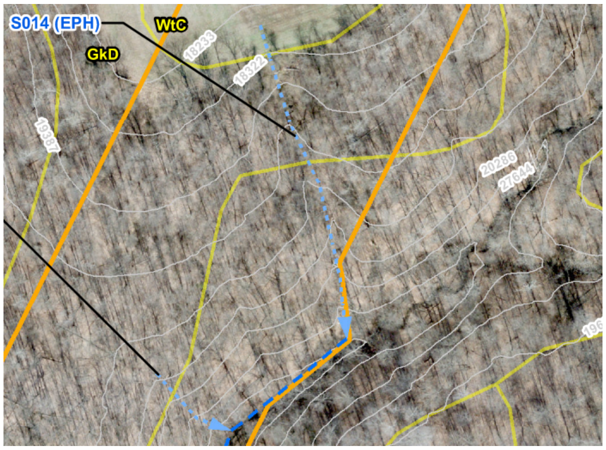
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S015 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.02

LENGTH OF STREAM REACH (ft) 458.00 LAT 39.456635 LONG -81.652261 RIVER MILE ______

DATE 09/01/2023 SCORER AGS COMMENTS SOH-AGS-015

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS **[16 pts]**		☐☑	SILT **[3 pt]**	35
☐☐	BOULDER (>256 mm) **[16 pts]**		☐☐	LEAF PACK/WOODY DEBRIS **[3 pts]**	25
☐☐	BEDROCK **[16 pts]**		☐☐	FINE DETRITUS **[3 pts]**	
☑☐	COBBLE (65-256 mm) **[12 pts]**	40	☐☐	CLAY or HARDPAN **[0 pt]**	
☐☐	GRAVEL (2-64 mm) **[9 pts]**		☐☐	MUCK **[0 pts]**	
☐☐	SAND (<2 mm) **[6 pts]**		☐☐	ARTIFICIAL **[3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.44 mi

☐ CWH Name: ____________ Distance from Evaluated Stream ____________

☐ EWH Name: ____________ Distance from Evaluated Stream ____________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: _______

County: Washington Township/City: ____________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ____________ Quantity: ____________

Photo-documentation Notes: ____________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ____________

Field Measures:Temp (°C) _______ Dissolved Oxygen (mg/l) _________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ____________

Additional comments/description of pollution impacts: ____________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ____________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ____________

Salamanders Observed? (Y/N) N Species observed (if known): ____________

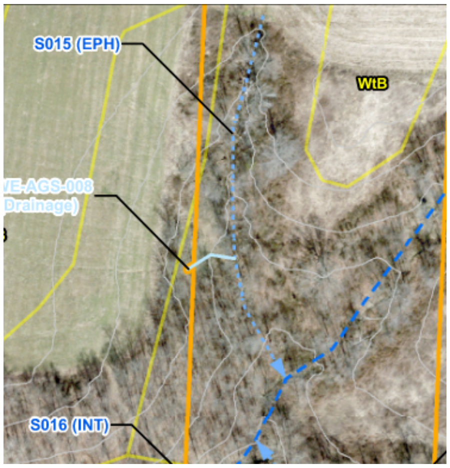
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ____________

Comments Regarding Biology: ____________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S016 RIVER BASIN ________ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.02
LENGTH OF STREAM REACH (ft) 525.00 LAT 39.456476 LONG -81.651884 RIVER MILE ________
DATE 09/01/2023 SCORER AGS COMMENTS SOH-AGS-016

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	60
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	40	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ________ MAXIMUM POOL DEPTH (centimeters): 5.08

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ________ AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☑	☑	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.39 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y If not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) Y Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

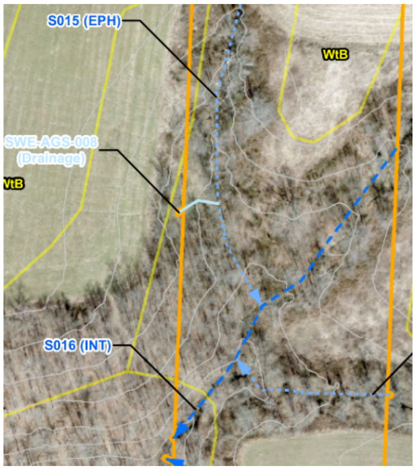
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Ohio

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S017 RIVER BASIN ____ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.01

LENGTH OF STREAM REACH (ft) 243.00 LAT 39.456048 LONG -81.652086 RIVER MILE ____

DATE 09/01/2023 SCORER AGS COMMENTS SOH-AGS-017

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☑	SILT [3 pt]	30
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	10
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☑☐	COBBLE (65-256 mm) [12 pts]	60	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ____ MAXIMUM POOL DEPTH (centimeters): 0

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]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ____ AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☑	☑	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.40 mi

☐ CWH Name: ______ Distance from Evaluated Stream ______

☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: _______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______

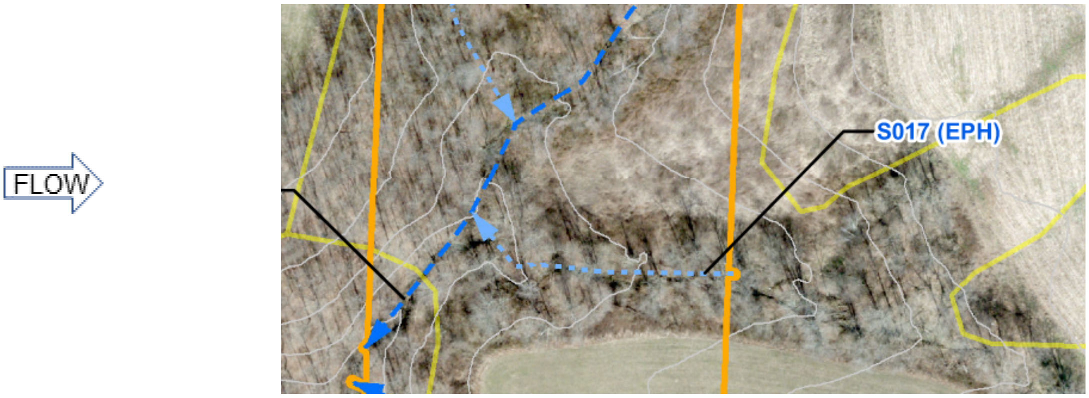
Salamanders Observed? (Y/N) N Species observed (if known): ______

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______

Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S018 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.01

LENGTH OF STREAM REACH (ft) 138.00 LAT 39.455740 LONG -81.652428 RIVER MILE ______

DATE 09/01/2023 SCORER AGS COMMENTS SOH-AGS-018

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	36
☐☐	BOULDER (>256 mm) [16 pts]	30	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	34	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 1.27

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 1.52

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.42 mi
☐ CWH Name: ______ Distance from Evaluated Stream ______
☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______

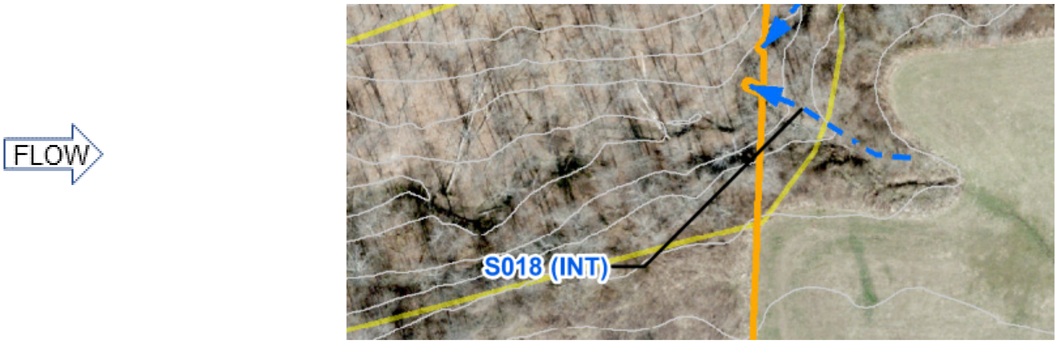
Salamanders Observed? (Y/N) N Species observed (if known): ______

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______

Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S019 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.01

LENGTH OF STREAM REACH (ft) 154.00 LAT 39.453631 LONG -81.651859 RIVER MILE ______

DATE 09/01/2023 SCORER AGS COMMENTS SOH-AGS-019

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	60
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	40	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the* time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.52

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.32 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y If not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S020 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.008

LENGTH OF STREAM REACH (ft) 90.00 LAT 39.459065 LONG -81.655768 RIVER MILE ______

DATE 09/01/2023 SCORER AGS COMMENTS SOH-AGS-020

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

HHEI Metric Points

1. **SUBSTRATE (Estimate percent of every type present).** Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	50
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

Substrate Max = 40: 18

A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L R	
☐☐	Wide >10m
☐☐	Moderate 5-10m
☐☐	Narrow <5m
☑☑	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L R		L R	
☐☐	Mature Forest, Wetland	☐☐	Conservation Tillage
☐☐	Immature Forest, Shrub or Old Field	☐☐	Urban or Industrial
☐☐	Residential, Park, New Field	☐☐	Open Pasture, Row Crop
☐☐	Fenced Pasture	☐☐	Mining or Construction

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.70 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

Ohio

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S021 RIVER BASIN ____ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.12

LENGTH OF STREAM REACH (ft) 579.00 LAT 39.458796 LONG -81.656948 RIVER MILE ____

DATE 09/01/2023 SCORER AGS COMMENTS SOH-AGS-021

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

HHEI Metric Points

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	60
☐☐	BOULDER (>256 mm) [16 pts]	10	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	10
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☑	COBBLE (65-256 mm) [12 pts]	20	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS Large cow bath (~30ft wide) not counted in p

MAXIMUM POOL DEPTH (centimeters): 10.16

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ____

AVERAGE BANKFULL WIDTH (meters) 2.13

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☑	☑	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS A portion of the floodplain is in an active pasture.

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.57 mi
☐ CWH Name: Distance from Evaluated Stream
☐ EWH Name: Distance from Evaluated Stream

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: NRCS Soil Map Stream Order:

County: Washington Township/City:

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: Quantity:

Photo-documentation Notes:

Elevated Turbidity? (Y/N): N Canopy (% open): 35

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results):

Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)

Is the sampling reach representative of the stream (Y/N) Y f not, explain:

Additional comments/description of pollution impacts:

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known):

Frogs or Tadpoles Observed? (Y/N) Y Species observed (if known):

Salamanders Observed? (Y/N) N Species observed (if known):

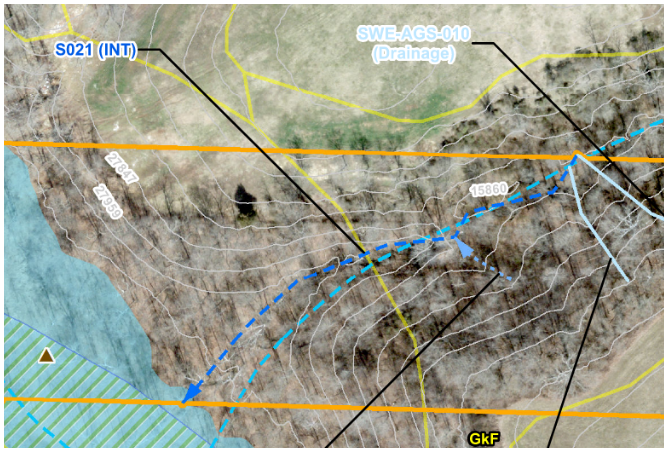
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known):

Comments Regarding Biology:

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Ohio

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S022 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.01
LENGTH OF STREAM REACH (ft) 83.00 LAT 39.458764 LONG -81.656596 RIVER MILE ______
DATE 09/01/2023 SCORER AGS COMMENTS SOH-AGS-022

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS **[16 pts]**		☑☐	SILT **[3 pt]**	50
☐☐	BOULDER (>256 mm) **[16 pts]**		☐☑	LEAF PACK/WOODY DEBRIS **[3 pts]**	50
☐☐	BEDROCK **[16 pts]**		☐☐	FINE DETRITUS **[3 pts]**	
☐☐	COBBLE (65-256 mm) **[12 pts]**		☐☐	CLAY or HARDPAN **[0 pt]**	
☐☐	GRAVEL (2-64 mm) **[9 pts]**		☐☐	MUCK **[0 pts]**	
☐☐	SAND (<2 mm) **[6 pts]**		☐☐	ARTIFICIAL **[3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 0.91

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.64 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

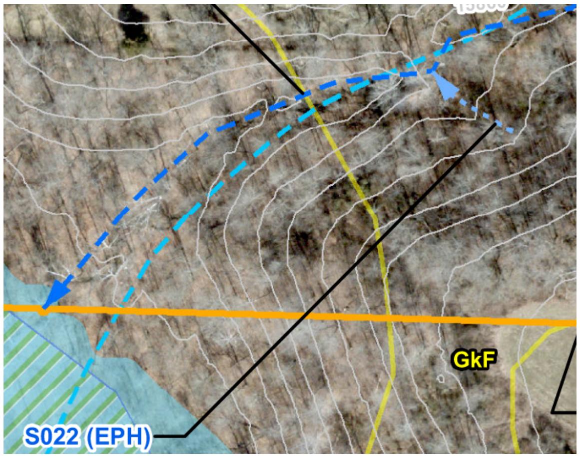
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 47

Stream & Location: West Watertown - Watertown S023 S023
RM ____ Date: 9 / 6 / 23
Scorers Full Name & Affiliation: Kristen Vandenmolen/Austin Sage
River Code: 05040004 0901 STORET # ________
Lat./ Long. (NAD 83 - decimal °): 39.458713/81.65876S
Office verified location ☐

1] SUBSTRATE

Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

	BEST TYPES	POOL	RIFFLE		OTHER TYPES	POOL	RIFFLE
☐ ☐	BLDR /SLABS [10]			☐ ☐	HARDPAN [4]		
☐ ☐	BOULDER [9]			☐ ☐	DETRITUS [3]	10	
☐ ☐	COBBLE [8]	10		☐ ☐	MUCK [2]		
☒ ☐	GRAVEL [7]	40		☒ ☐	SILT [2]	30	
☐ ☐	SAND [6]	10		☐ ☐	ARTIFICIAL [0]		
☐ ☐	BEDROCK [5]						

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Comments

Check ONE (Or 2 & average)

ORIGIN
- ☐ LIMESTONE [1]
- ☐ TILLS [1]
- ☐ WETLANDS [0]
- ☐ HARDPAN [0]
- ☒ SANDSTONE [0]
- ☐ RIP/RAP [0]
- ☐ LACUSTURINE [0]
- ☐ SHALE [-1]
- ☐ COAL FINES [-2]

QUALITY

SILT
- ☐ HEAVY [-2]
- ☐ MODERATE [-1]
- ☐ NORMAL [0]
- ☐ FREE [1]

EMBEDDEDNESS
- ☐ EXTENSIVE [-2]
- ☐ MODERATE [-1]
- ☒ NORMAL [0]
- ☐ NONE [1]

Substrate Maximum 20: 9

2] INSTREAM COVER

Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

1 UNDERCUT BANKS [1]
1 OVERHANGING VEGETATION [1]
0 SHALLOWS (IN SLOW WATER) [1]
0 ROOTMATS [1]
0 POOLS > 70cm [2]
0 ROOTWADS [1]
0 BOULDERS [1]
0 OXBOWS, BACKWATERS [1]
0 AQUATIC MACROPHYTES [1]
0 LOGS OR WOODY DEBRIS [1]

AMOUNT

Check ONE (Or 2 & average)
- ☐ EXTENSIVE >75% [11]
- ☐ MODERATE 25-75% [7]
- ☒ SPARSE 5-<25% [3]
- ☐ NEARLY ABSENT <5% [1]

Comments

Cover Maximum 20: 5

3] CHANNEL MORPHOLOGY

Check ONE in each category (Or 2 & average)

SINUOSITY
- ☐ HIGH [4]
- ☐ MODERATE [3]
- ☒ LOW [2]
- ☐ NONE [1]

DEVELOPMENT
- ☐ EXCELLENT [7]
- ☐ GOOD [5]
- ☒ FAIR [3]
- ☐ POOR [1]

CHANNELIZATION
- ☒ NONE [6]
- ☐ RECOVERED [4]
- ☐ RECOVERING [3]
- ☐ RECENT OR NO RECOVERY [1]

STABILITY
- ☐ HIGH [3]
- ☒ MODERATE [2]
- ☐ LOW [1]

Comments

Channel Maximum 20: 13

4] BANK EROSION AND RIPARIAN ZONE

Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION (L R)
- ☒ ☒ NONE / LITTLE [3]
- ☐ ☐ MODERATE [2]
- ☐ ☐ HEAVY / SEVERE [1]

RIPARIAN WIDTH (L R)
- ☒ ☒ WIDE > 50m [4]
- ☐ ☐ MODERATE 10-50m [3]
- ☐ ☐ NARROW 5-10m [2]
- ☐ ☐ VERY NARROW < 5m [1]
- ☐ ☐ NONE [0]

FLOOD PLAIN QUALITY (L R)
- ☒ ☒ FOREST, SWAMP [3]
- ☐ ☐ SHRUB OR OLD FIELD [2]
- ☐ ☐ RESIDENTIAL, PARK, NEW FIELD [1]
- ☐ ☐ FENCED PASTURE [1]
- ☐ ☐ OPEN PASTURE, ROWCROP [0]
- ☐ ☐ CONSERVATION TILLAGE [1]
- ☐ ☐ URBAN OR INDUSTRIAL [0]
- ☐ ☐ MINING / CONSTRUCTION [0]

Indicate predominant land use(s) past 100m riparian.

Comments

Riparian Maximum 10: 10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

Check ONE (ONLY!)
- ☐ > 1m [6]
- ☐ 0.7-<1m [4]
- ☐ 0.4-<0.7m [2]
- ☒ 0.2-<0.4m [1]
- ☐ < 0.2m [0]

CHANNEL WIDTH

Check ONE (Or 2 & average)
- ☐ POOL WIDTH > RIFFLE WIDTH [2]
- ☒ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY

Check ALL that apply
- ☐ TORRENTIAL [-1]
- ☐ VERY FAST [1]
- ☐ FAST [1]
- ☐ MODERATE [1]
- ☒ SLOW [1]
- ☐ INTERSTITIAL [-1]
- ☐ INTERMITTENT [-2]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments

Pool / Current Maximum 12: 3

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

☐ NO RIFFLE [metric=0]

Check ONE (Or 2 & average)

RIFFLE DEPTH
- ☐ BEST AREAS > 10cm [2]
- ☒ BEST AREAS 5-10cm [1]
- ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH
- ☐ MAXIMUM > 50cm [2]
- ☒ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE
- ☐ STABLE (e.g., Cobble, Boulder) [2]
- ☒ MOD. STABLE (e.g., Large Gravel) [1]
- ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS
- ☐ NONE [2]
- ☐ LOW [1]
- ☒ MODERATE [0]
- ☐ EXTENSIVE [-1]

Comments

Riffle / Run Maximum 8: 3

6] GRADIENT

GRADIENT (ft/mi)
- ☒ VERY LOW - LOW [2-4]
- ☐ MODERATE [6-10]
- ☐ HIGH - VERY HIGH [10-6]

DRAINAGE AREA (6.75 mi²)

%POOL: 30 %GLIDE: 20
%RUN: 40 %RIFFLE: 10

Gradient Maximum 10: 4

A] SAMPLED REACH
Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of steam? *Recreation:* Observed - Inferred. *Other:* Sampling observations, Concerns, Access directions, etc.

METHOD
☐ BOAT
☐ WADE
☐ L. LINE
☐ OTHER

DISTANCE
☐ 0.5 Km
☐ 0.2 Km
☐ 0.15 Km
☐ 0.12 Km
☐ OTHER
_____ meters

STAGE
1st sample pass 2nd
☐ HIGH ☐
☐ UP ☐
☐ NORMAL ☐
☐ LOW ☐
☐ DRY ☐

CLARITY
1st sample pass 2nd
☐ < 20 cm ☐
☐ 20-<40 cm ☐
☐ 40-70 cm ☐
☐ > 70 cm/ CTB ☐
☐ SECCHI DEPTH ☐
1st _____ cm
2nd _____ cm

CANOPY
☐ > 85%- OPEN
☐ 55%-<85%
☐ 30%-<55%
☒ 10%-<30%
☐ <10%- CLOSED

B] AESTHETICS
☐ NUISANCE ALGAE
☐ INVASIVE MACROPHYTES
☐ EXCESS TURBIDITY
☐ DISCOLORATION
☐ FOAM / SCUM
☐ OIL SHEEN
☐ TRASH / LITTER
☐ NUISANCE ODOR
☐ SLUDGE DEPOSITS
☐ CSOs/SSOs/OUTFALLS

C] RECREATION
AREA DEPTH
POOL: ☐ >100ft² ☐ >3ft

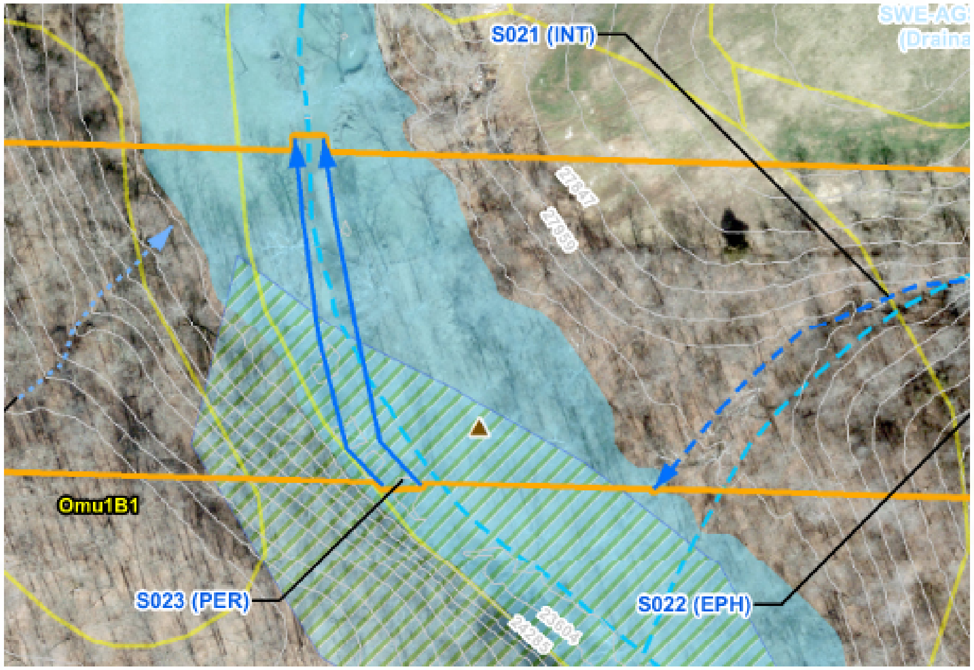
D] MAINTENANCE
Circle some & *COMMENT*

PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_20 / TILE / H_20 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS
$\bar{x}$ width
$\bar{x}$ depth
max. depth
$\bar{x}$ bankfull width
bankfull $\bar{x}$ depth
W/D ratio
bankfull max. depth
floodprone x^2 width
entrench. ratio
Legacy Tree:

Stream Drawing:



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S024 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.12

LENGTH OF STREAM REACH (ft) 389.00 LAT 39.458969 LONG -81.664448 RIVER MILE ______

DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-024

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* <u>two</u> predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☐☑	**SILT [3 pt]**	30
☐☐	**BOULDER (>256 mm) [16 pts]**	10	☐☐	**LEAF PACK/WOODY DEBRIS [3 pts]**	
☐☐	**BEDROCK [16 pts]**		☐☐	**FINE DETRITUS [3 pts]**	
☑☐	**COBBLE (65-256 mm) [12 pts]**	60	☐☐	**CLAY or HARDPAN [0 pt]**	
☐☐	**GRAVEL (2-64 mm) [9 pts]**		☐☐	**MUCK [0 pts]**	
☐☐	**SAND (<2 mm) [6 pts]**		☐☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40 18 **A + B**

2. Maximum Pool Depth (*Measure the <u>maximum</u> pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 5.08

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 2.74

Bankfull Width Max=30 0

This information <u>must</u> also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 Moist channel only present in some areas.

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 1.05 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S025 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.07

LENGTH OF STREAM REACH (ft) 265.00 LAT 39.458715 LONG -81.664194 RIVER MILE ______

DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-025

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☑ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

HHEI Metric Points

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS **[16 pts]**		☐☑	SILT **[3 pt]**	30
☐☐	BOULDER (>256 mm) **[16 pts]**	10	☐☐	LEAF PACK/WOODY DEBRIS **[3 pts]**	10
☐☐	BEDROCK **[16 pts]**		☐☐	FINE DETRITUS **[3 pts]**	
☑☐	COBBLE (65-256 mm) **[12 pts]**	50	☐☐	CLAY or HARDPAN **[0 pt]**	
☐☐	GRAVEL (2-64 mm) **[9 pts]**		☐☐	MUCK **[0 pts]**	
☐☐	SAND (<2 mm) **[6 pts]**		☐☐	ARTIFICIAL **[3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 1.10 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

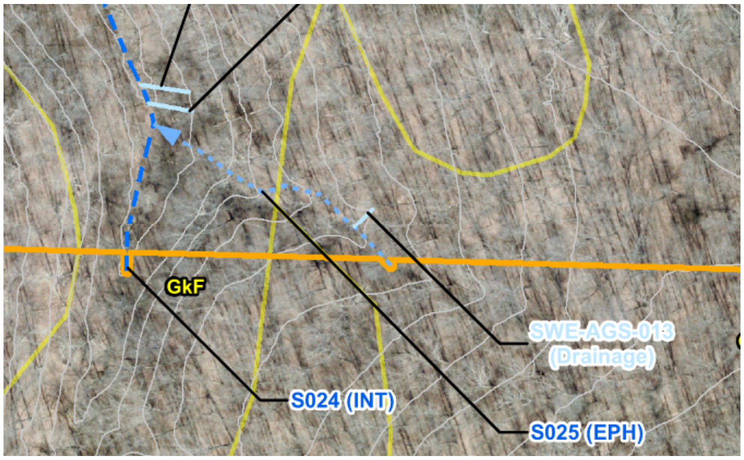
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S026 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.07

LENGTH OF STREAM REACH (ft) 125.00 LAT 39.459134 LONG -81.662065 RIVER MILE ______

DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-026

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* <u>two</u> predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☑☐	**SILT [3 pt]**	60
☐☐	**BOULDER (>256 mm) [16 pts]**		☐☑	**LEAF PACK/WOODY DEBRIS [3 pts]**	30
☐☐	**BEDROCK [16 pts]**		☐☐	**FINE DETRITUS [3 pts]**	
☐☐	**COBBLE (65-256 mm) [12 pts]**	10	☐☐	**CLAY or HARDPAN [0 pt]**	
☐☐	**GRAVEL (2-64 mm) [9 pts]**		☐☐	**MUCK [0 pts]**	
☐☐	**SAND (<2 mm) [6 pts]**		☐☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40 18 **A + B**

2. Maximum Pool Depth (*Measure the <u>maximum</u> pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters **[20 pts]**
- ☐ > 22.5 - 30 cm **[30 pts]**
- ☐ > 10 - 22.5 cm **[25 pts]**
- ☐ 5 cm - 10 cm **[15 pts]**
- ☐ < 5 cm **[5pts]**
- ☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]**
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
- ☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 0.61

Bankfull Width Max=30 0

This information <u>must</u> also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

L	R	<u>RIPARIAN WIDTH</u> (Per Bank)	L	R	<u>FLOODPLAIN QUALITY</u> (Most Predominant per Bank)	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
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.95 mi
☐ CWH Name: ______ Distance from Evaluated Stream ______
☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity?(Y/N): N Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______
Salamanders Observed? (Y/N) N Species observed (if known): ______
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______
Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S027 RIVER BASIN ______ RIVER CODE 050400040901 DRAINAGE AREA (mi²) 0.08
LENGTH OF STREAM REACH (ft) 219.00 LAT 39.458618 LONG -81.659706 RIVER MILE ______
DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-027

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	50
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points
Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 0.91

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.65 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

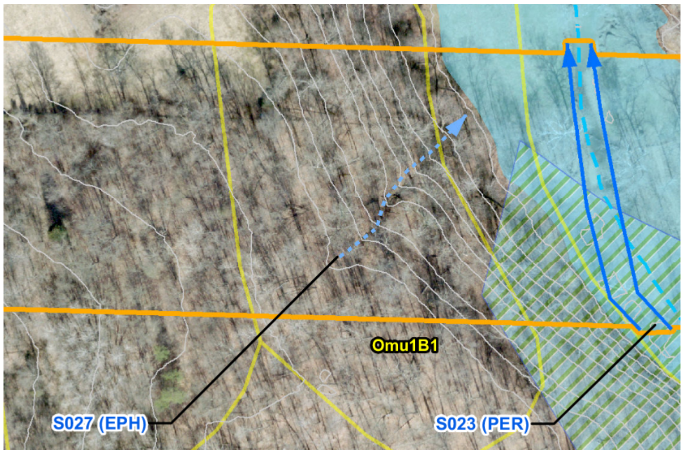
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S028 RIVER BASIN _____ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.02

LENGTH OF STREAM REACH (ft) 127.00 LAT 39.459966 LONG -81.646882 RIVER MILE _____

DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-028

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☑☐	**SILT [3 pt]**	60
☐☐	**BOULDER (>256 mm) [16 pts]**		☐☑	**LEAF PACK/WOODY DEBRIS [3 pts]**	30
☐☐	**BEDROCK [16 pts]**		☐☐	**FINE DETRITUS [3 pts]**	
☐☐	**COBBLE (65-256 mm) [12 pts]**	10	☐☐	**CLAY or HARDPAN [0 pt]**	
☐☐	**GRAVEL (2-64 mm) [9 pts]**		☐☐	**MUCK [0 pts]**	
☐☐	**SAND (<2 mm) [6 pts]**		☐☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40 18 **A + B**

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS _____ **MAXIMUM POOL DEPTH (centimeters):** 0

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS _____ **AVERAGE BANKFULL WIDTH (meters)** 1.22

Bankfull Width Max=30 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 Within an Ag field.

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.55 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

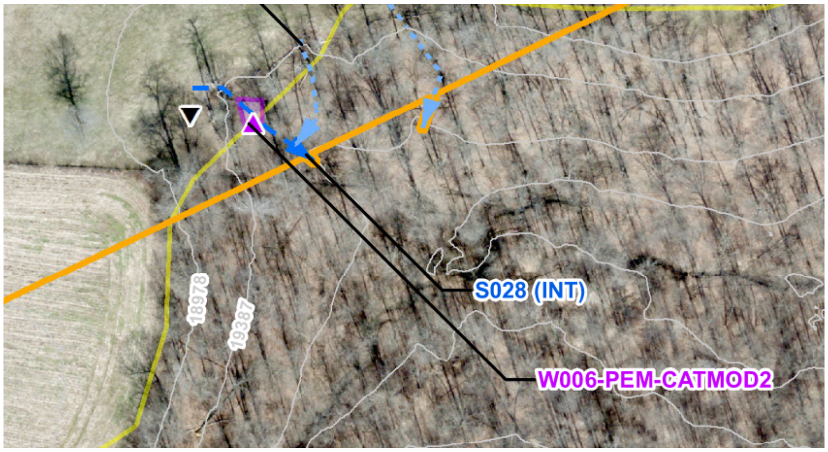
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S029 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.02

LENGTH OF STREAM REACH (ft) 100.00 LAT 39.460000 LONG -81.646740 RIVER MILE ______

DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-029

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	50
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ **MAXIMUM POOL DEPTH (centimeters):** 0

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]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ **AVERAGE BANKFULL WIDTH (meters)** 0.91

Bankfull Width Max=30: 0

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 Within an Ag field.

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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.55 mi

☐ CWH Name: ______ Distance from Evaluated Stream ______

☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity? (Y/N): N Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______

Salamanders Observed? (Y/N) N Species observed (if known): ______

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______

Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S030 RIVER BASIN ____ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.02

LENGTH OF STREAM REACH (ft) 195.00 LAT 39.460095 LONG -81.646357 RIVER MILE ____

DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-030

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	50
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (***Measure the maximum pool depth within the 61 meter (200 feet)*** evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ____ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ____ AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☑	☑	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS Within an Ag field.

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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.55 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 30

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S031 RIVER BASIN ____ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.02

LENGTH OF STREAM REACH (ft) 85.00 LAT 39.460322 LONG -81.648092 RIVER MILE ____

DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-031

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* <u>two</u> predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	**BLDR SLABS [16 pts]**		☑☐	**SILT [3 pt]**	50
☐☐	**BOULDER (>256 mm) [16 pts]**		☐☑	**LEAF PACK/WOODY DEBRIS [3 pts]**	50
☐☐	**BEDROCK [16 pts]**		☐☐	**FINE DETRITUS [3 pts]**	
☐☐	**COBBLE (65-256 mm) [12 pts]**		☐☐	**CLAY or HARDPAN [0 pt]**	
☐☐	**GRAVEL (2-64 mm) [9 pts]**		☐☐	**MUCK [0 pts]**	
☐☐	**SAND (<2 mm) [6 pts]**		☐☐	**ARTIFICIAL [3 pts]**	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40 18 **A + B**

2. Maximum Pool Depth (*Measure the <u>maximum</u> pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters **[20 pts]**
☐ > 22.5 - 30 cm **[30 pts]**
☐ > 10 - 22.5 cm **[25 pts]**
☐ 5 cm - 10 cm **[15 pts]**
☐ < 5 cm **[5pts]**
☐ NO WATER OR MOIST CHANNEL **[0pts]**

COMMENTS ____ **MAXIMUM POOL DEPTH (centimeters):** 0

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]**
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') **[25 pts]**
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") **[20 pts]**
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") **[15 pts]**
☐ ≤ 1.0 m (≤ 3' 3") **[5 pts]**

COMMENTS ____ **AVERAGE BANKFULL WIDTH (meters)** 0.91

Bankfull Width Max=30 0

This information <u>must</u> 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 Within an Ag field.

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.88 mi
☐ CWH Name: ____ Distance from Evaluated Stream ____
☐ EWH Name: ____ Distance from Evaluated Stream ____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ____ NRCS Soil Map Stream Order: ____

County: Washington Township/City: ____

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ____ Quantity: ____

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 90

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ____

Field Measures: Temp (°C) ____ Dissolved Oxygen (mg/l) ____ pH (S.U.) ____ Conductivity (umhos/cm) ____

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ____

Additional comments/description of pollution impacts: ____

BIOLOGICAL OBSERVATIONS

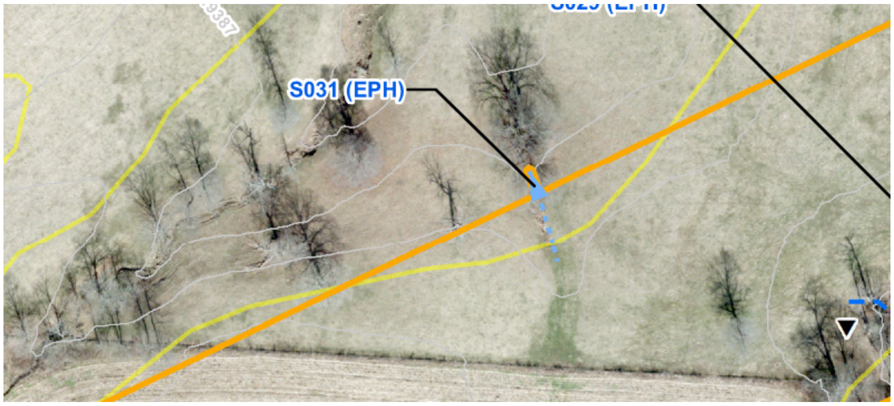
(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ____
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ____
Salamanders Observed? (Y/N) N Species observed (if known): ____
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ____
Comments Regarding Biology: ____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S032 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.02

LENGTH OF STREAM REACH (ft) 50.00 LAT 39.460617 LONG -81.644666 RIVER MILE ______

DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-032

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	50
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5pts]
- ☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 0.61

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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 Within an Ag field. Stream extends into mature forest.

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 ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.49 mi

☐ CWH Name: ________ Distance from Evaluated Stream ________

☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

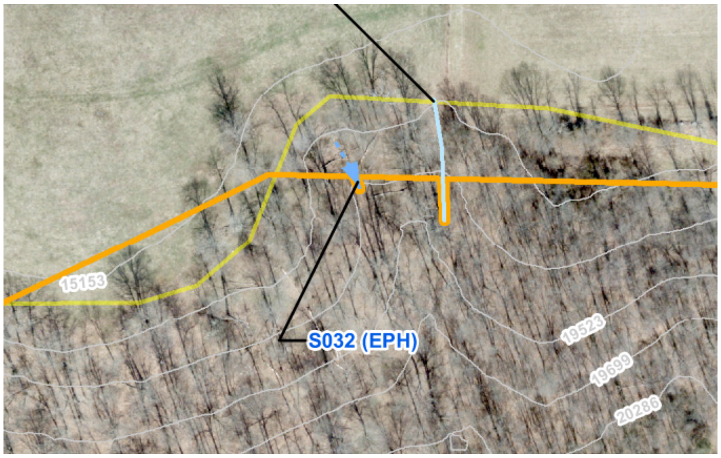
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S033 RIVER BASIN ____ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.08

LENGTH OF STREAM REACH (ft) 272.00 LAT 39.462226 LONG -81.641126 RIVER MILE ____

DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-033

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	55
☐☐	BOULDER (>256 mm) [16 pts]		☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	40
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	5	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS Moist channel present in downstream areas

MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ____

AVERAGE BANKFULL WIDTH (meters) 1.22

Bankfull Width Max=30: 0

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 Moist channel in downstream portion of stream

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.33 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

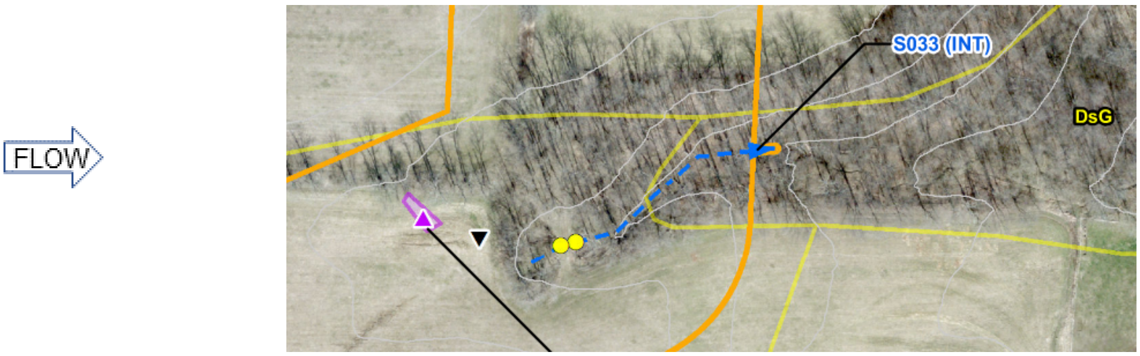
BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S034 RIVER BASIN ____ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.30
LENGTH OF STREAM REACH (ft) 368.00 LAT 39.464025 LONG -81.641476 RIVER MILE ____
DATE 09/05/2023 SCORER AGS COMMENTS SOH-AGS-034

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☑	SILT [3 pt]	15
☐☐	BOULDER (>256 mm) [16 pts]	5	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☑☐	COBBLE (65-256 mm) [12 pts]	80	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15
TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points
Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ > 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS Moist channel
MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ____
AVERAGE BANKFULL WIDTH (meters) 2.13

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☑	☑	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☑	☑	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS Floodplain not present is steep, incised portion of stream

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 Moist channel

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None ☐ 0.5 ☐ 1.0 ☐ 1.5 ☐ 2.0 ☐ 2.5 ☐ 3.0 ☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.31 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity?(Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures:Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y If not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________

Salamanders Observed? (Y/N) N Species observed (if known): ________

Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________

Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S035 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.04
LENGTH OF STREAM REACH (ft) 252.00 LAT 39.474861 LONG -81.630408 RIVER MILE ______
DATE 09/06/2023 SCORER AGS COMMENTS SOH-AGS-035

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☐	SILT [3 pt]	70
☐☐	BOULDER (>256 mm) [16 pts]	10	☐☑	LEAF PACK/WOODY DEBRIS [3 pts]	20
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet)* evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.52

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★ NOTE: River Left (L) and Right (R) as looking downstream★

L	R	RIPARIAN WIDTH (Per Bank)	L	R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.41 mi
☐ CWH Name: ______ Distance from Evaluated Stream ______
☐ EWH Name: ______ Distance from Evaluated Stream ______

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ______ NRCS Soil Map Stream Order: ______

County: Washington Township/City: ______

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: ______ Quantity: ______

Photo-documentation Notes: ______

Elevated Turbidity? (Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ______

Field Measures: Temp (°C) ______ Dissolved Oxygen (mg/l) ______ pH (S.U.) ______ Conductivity (umhos/cm) ______

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______

Additional comments/description of pollution impacts: ______

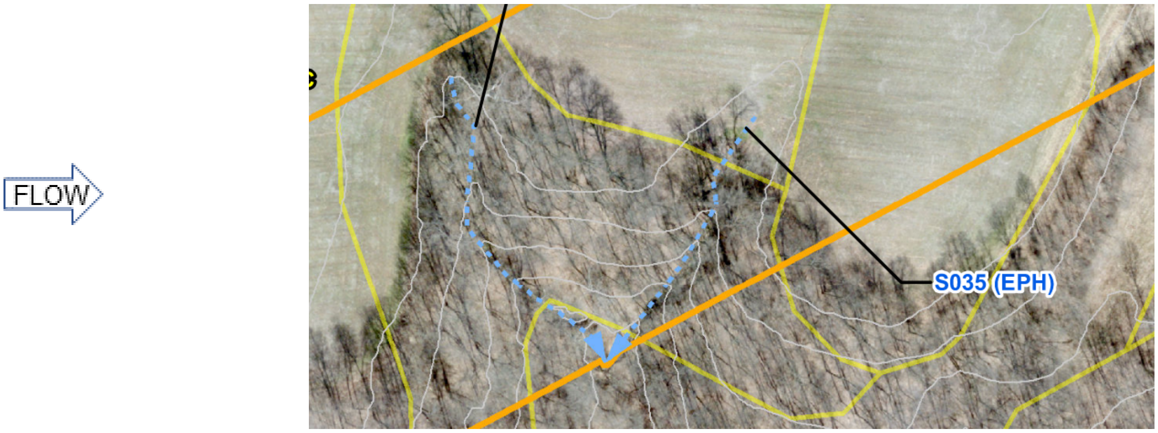
BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______
Salamanders Observed? (Y/N) N Species observed (if known): ______
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______
Comments Regarding Biology: ______

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown
SITE NUMBER S036 RIVER BASIN ______ RIVER CODE 050400040903 DRAINAGE AREA (mi²) 0.3
LENGTH OF STREAM REACH (ft) 306.00 LAT 39.474643 LONG -81.630960 RIVER MILE ______
DATE 09/06/2023 SCORER AGS COMMENTS SOH-AGS-036

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☑	SILT [3 pt]	20
☐☐	BOULDER (>256 mm) [16 pts]	10	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☑☐	COBBLE (65-256 mm) [12 pts]	70	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15
TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points
Substrate Max = 40: 18
A + B

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 1.52

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

L R	RIPARIAN WIDTH (Per Bank)	L R	FLOODPLAIN QUALITY (Most Predominant per Bank)	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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: South Branch Wolf Creek Distance from Evaluated Stream 0.41 mi
☐ CWH Name: ________ Distance from Evaluated Stream ________
☐ EWH Name: ________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE <u>ENTIRE</u> WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: ________

County: Washington Township/City: ________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ________ Quantity: ________

Photo-documentation Notes: ________

Elevated Turbidity? (Y/N): N Canopy (% open): 80

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ________

Field Measures: Temp (°C) ________ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ________

Additional comments/description of pollution impacts: ________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ________
Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ________
Salamanders Observed? (Y/N) N Species observed (if known): ________
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ________
Comments Regarding Biology: ________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This <u>must</u> be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW

Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S003 RIVER BASIN ____ RIVER CODE ____ DRAINAGE AREA (mi²) 0.08

LENGTH OF STREAM REACH (ft) 206.00 LAT 39.458758 LONG -81.666818 RIVER MILE ____

DATE 08/30/2023 SCORER AGS COMMENTS SOH-AGS-003

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	50
☐☐	BOULDER (>256 mm) [16 pts]		☑☐	LEAF PACK/WOODY DEBRIS [3 pts]	50
☑☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☑☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 6

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 2

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the* time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ____

MAXIMUM POOL DEPTH (centimeters): 0

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ____

AVERAGE BANKFULL WIDTH (meters) 0.61

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L R	
☐☐	Wide >10m
☐☐	Moderate 5-10m
☐☐	Narrow <5m
☑☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L R		L R	
☑☐	Mature Forest, Wetland	☐☐	Conservation Tillage
☑☐	Immature Forest, Shrub or Old Field	☐☐	Urban or Industrial
☐☑	Residential, Park, New Field	☐☐	Open Pasture, Row Crop
☐☐	Fenced Pasture	☐☐	Mining or Construction

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 2.83 mi
☐ CWH Name: ______________________ Distance from Evaluated Stream ________
☐ EWH Name: ______________________ Distance from Evaluated Stream ________

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ________ NRCS Soil Map Stream Order: _______

County: Washington Township/City: ______________________

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ____________ Quantity: ________

Photo-documentation Notes: ______________________

Elevated Turbidity?(Y/N): N Canopy (% open): 20

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ____________

Field Measures:Temp (°C) ______ Dissolved Oxygen (mg/l) ________ pH (S.U.) ________ Conductivity (umhos/cm) ________

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ______________________

Additional comments/description of pollution impacts: ______________________

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ______________________

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ______________________

Salamanders Observed? (Y/N) N Species observed (if known): ______________________

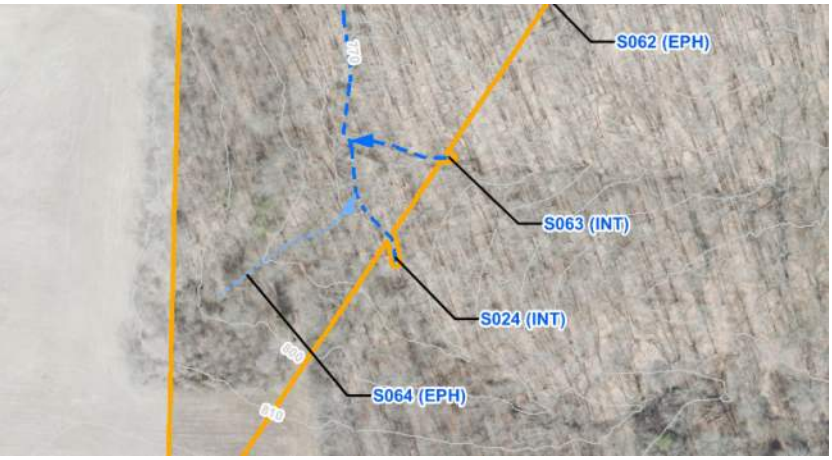
Aquatic Macroinvertebrates Observed? (Y/N) N Species observed (if known): ______________________

Comments Regarding Biology: ______________________

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed)

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location

FLOW



Headwater Habitat Evaluation Index Field Form

HHEI Score (sum of metrics 1+2+3) 18

SITE NAME/LOCATION West Watertown-Watertown

SITE NUMBER S004 RIVER BASIN ______ RIVER CODE ______ DRAINAGE AREA (mi²) 0.19

LENGTH OF STREAM REACH (ft) 132.00 LAT 39.452274 LONG -81.671202 RIVER MILE ______

DATE 08/30/2023 SCORER AGS COMMENTS SOH-AGS-004

NOTE: Complete All Items On This Form - Refer to "Headwater Habitat Evaluation Index Field Manual" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type present). Check *ONLY* two predominant substrate *TYPE* boxes. (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	30
☐☐	BOULDER (>256 mm) [16 pts]		☑☐	LEAF PACK/WOODY DEBRIS [3 pts]	20
☑☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☑☐	COBBLE (65-256 mm) [12 pts]	50	☐☐	CLAY or HARDPAN [0 pt]	
☐☑	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 65

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (A) 15

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 18 (A + B)

2. Maximum Pool Depth (*Measure the maximum pool depth within the 61 meter (200 feet) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes*) (Check *ONLY* one box):

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☐ 5 cm - 10 cm [15 pts]
☐ < 5 cm [5pts]
☐ NO WATER OR MOIST CHANNEL [0pts]

COMMENTS ______ MAXIMUM POOL DEPTH (centimeters): 15.2

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]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS ______ AVERAGE BANKFULL WIDTH (meters) 2.13

Bankfull Width Max=30: 0

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ★NOTE: River Left (L) and Right (R) as looking downstream★

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R		L	R	
☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	Fenced Pasture	☐	☐	Mining or Construction

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
☐ 0.5
☐ 1.0
☐ 1.5
☐ 2.0
☐ 2.5
☐ 3.0
☐ >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: Southwest Fork South Branch Wolf Creek Distance from Evaluated Stream 0.59 mi

☐ CWH Name: ____ Distance from Evaluated Stream ____

☐ EWH Name: ____ Distance from Evaluated Stream ____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION.

USGS Quadrangle Name: Watertown NRCS Soil Map Page: ____ NRCS Soil Map Stream Order: ____

County: Washington Township/City: ____

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: ____ Quantity: ____

Photo-documentation Notes: ____

Elevated Turbidity? (Y/N): N Canopy (% open): 40

Were samples collected for water chemistry? (Y/N): N Lab Sample # or ID (attach results): ____

Field Measures: Temp (°C) ____ Dissolved Oxygen (mg/l) ____ pH (S.U.) ____ Conductivity (umhos/cm) ____

Is the sampling reach representative of the stream (Y/N) Y f not, explain: ____

Additional comments/description of pollution impacts: ____

BIOLOGICAL OBSERVATIONS

(Record all observations below)

Fish Observed? (Y/N) N Species observed (if known): ____

Frogs or Tadpoles Observed? (Y/N) N Species observed (if known): ____

Salamanders Observed? (Y/N) N Species observed (if known): ____

Aquatic Macroinvertebrates Observed? (Y/N) Y Species observed (if known): ____

Comments Regarding Biology: Unidentified species of water spider 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

Attachment 3
Stream Resource Table

Table 1
Waterbodies Identified Within the Project Study Area

	Location[2]							Field Evaluation			
Stream ID[1]	**Latitude**	**Longitude**	**Stream Type**	**Stream Name**	**Delineated Length (feet)[3]**	**Bankfull Width (feet)[4]**	**OHWM Width (feet)**	**Method**	**Score[5, 6]**	**Category[5] / Rating[6] / OAC Aquatic Life Designation[7]**	**Ohio EPA 401 Eligibility[8]**
S024	39.457966	-81.664606	Intermittent	UNT to Southwest Fork South Branch Wolf Creek	1127	9	8	HHEI	53	Class II PHW	Eligible
S025	39.457873	-81.664137	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	388	4	3	HHEI	34	Class II PHW	Eligible
S061	39.457873	-81.664137	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	329	4	3	HHEI	41	Class II	Eligible
S062	39.457716	-81.664530	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	86	3	2	HHEI	22	Class I	Eligible
S063	39.456887	-81.664612	Intermittent	UNT to Southwest Fork South Branch Wolf Creek	115	3	2	HHEI	36	Class II	Eligible
S064	39.456596	-81.665057	Ephemeral	UNT to Southwest Fork South Branch Wolf Creek	198	3	2	HHEI	22	Class I	Eligible
				Total	**2,243**						

Notes:

[1] GAI map designation.

[2] North American Datum, 1983.

[3] Total stream length (in feet) located within the Project study area.

[4] Width in feet from tops of stream bank.

[5] Categorization for OEPA Headwater Habitat Evaluation Index (HHEI) Primary Headwater Habitats (PHWH). HHEI Score and comparison to HHEI Flow Chart places streams into six PHWH categories: Rheocrene, Class I (natural channel), Modified Class I (modified channel), Class II (natural channel), Modified Class II (modified channel), Class III. For streams with a Rheocrene designation a biological survey using Level 3 Assessment methods for amphibians and benthic macroinvertebrates was not completed.

[6] Narrative rating for headwater streams using the OEPA Qualitative Habitat Evaluation Index (QHEI). Excellent = ≥70; Good = 55 - 60; Fair = 43 - 54; Poor = 30 - 42; Very Poor = <30.

[7] As defined by Ohio Administrative Code (OAC) Chapter 3745-1-24 Water Quality Standards for Muskingum River tributaries drainage basin effective May 22, 2017. Water use designations and statewide criteria are defined in OAC 3745-1-07; https://epa.ohio.gov/static/Portals/35/rules/01-all.pdf?ver=Eaa7s8hOK8IRHn1XA8nXDA%3d%3d.

[8] As defined by the Clean Water Act Section 401 Water Quality Certification (WQC) conditions for stream eligibility coverage under the 2021 NWP program. Streams located in Possibly Eligible areas are eligible for coverage if the pH is <6.5 or stream flow is ephemeral. Streams located in Possibly Eligible areas are also eligible for coverage if the HHEI score is <50, or if the HHEI score is between 50-69 and substrate composition is <10% coarse types (includes cumulative percentage of bedrock, boulders, boulder slabs, and cobble). Streams located in Possibly Eligible areas are also eligible for coverage if the QHEI score is <50 and the drainage area is <3.0 square miles or the score is <55 and the drainage area is ≥3.0 square miles.

Attachment 4
Photographs

Photograph 1. Stream S061, Upstream, Facing East

Photograph 2. Stream S061, Downstream, Facing West

Photograph 3. Stream S061, Crossing, Facing North

Photograph 4. Stream S061, Substrate

Photograph 5. Stream S062, Upstream, Facing East

Photograph 6. Stream S062, Downstream, Facing West

Photograph 7. Stream S062, Crossing, Facing North

Photograph 8. Stream S062, Substrate

Photograph 9. Stream S063, Upstream, Facing East

Photograph 10. Stream S063, Downstream, Facing West

Photograph 11. Stream S063, Crossing, Facing North

Photograph 12. Stream S063, Substrate

Photograph 13. Stream S064, Upstream, Facing Southwest

Photograph 14. Stream S064, Downstream, Facing Northeast

Photograph 15. Stream S064, Crossing, Facing North

Photograph 16. Stream S064, Substrate