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Pre-Construction Notification

Ohio to Erie Bridge over Big Walnut Creek

PREPARED FOR
U.S. Army Corps of Engineers

Huntington District Office
502 8th Street
Huntington, WV 25701

ON BEHALF OF
Preservation Parks of Delaware County

2656 Hogback Road
Sunbury, Ohio 43074

ISSUED: 9.30.2021

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INTRODUCTION

This Pre Construction Notification (PCN) has been prepared as an attachment document to the U.S. Army Corps of Engineers 404 application for a permit to impact jurisdictional waters of the U.S. This PCN pertains to the rehabilitation of the Ohio to Erie Bridge over Walnut Creek (the “Project”).

In the construction of the Project, total impact are proposed to 0.30 acres of Waters of the United States (WOTUS), including temporary impacts to 0.02 acres of wetland and 0.28 acres of stream as well as 0.001 acre of permanent stream fill. This report provides the information to show compliance with the terms and conditions of Nationwide Permit (NWP) 3. With these documents, we are requesting verification from the district engineer that this project complies with NWP 3 prior to commencing the proposed work.

In response to this NWP verification request and PCN, the district engineer reviews the information submitted by the permittee. If the district engineer determines that the activity complies with the terms and conditions of the NWP, the engineer will notify the permittee. Special conditions may be added to the NWP authorization to ensure that the activity results in minimal individual and cumulative adverse effects on the aquatic environment and other public interest factors. The special conditions are incorporated into the NWP verification, along with the NWP text and the NWP general conditions. The district engineer will respond to NWP verification requests within 45 days of receiving a complete PCN. A PCN is considered complete once all agency concerns/comments have been addressed.

Included in this report is information to show compliance with the conditions of the USACE NWP 3. This includes evaluation for endangered species, potential designation of onsite streams, water quality management and erosion control methods, assessments of wetlands, and a mitigation proposal.

1.0 RESPONSIBLE PARTIES

Name, address and telephone numbers of the prospective permittee:

Applicant:	Preservation Parks of Delaware Co. Matt Simpson 2656 Hogback Road Sunbury, Ohio 43074	msimpson@preservationparks.com 740-524-8600 x102
Ecological Consultant:	CT Consultants, Inc. Carrie Ricker, PWS 8150 Sterling Ct. Mentor, OH 44060	cricker@ctconsultants.com 440-530-2208
Engineer:	CT Consultants, Inc. Tajudeen A. Bakare, PE, M.ASCE 8150 Sterling Ct. Mentor, OH 44060	tbakare@ctconsultants.com

2.0 SITE LOCATION

The project site is approximately 1 acre in size and is located in the Village of Sunbury, Delaware County, Ohio. The property consists of PPN(s): 41623001062001 (partial) and 41623301063001 (partial). The site is located at 40.244963° by -82.848226° latitude/longitude. See the Location Map (Appendix A) for details.

3.0 NWP AUTHORIZATION

This Pre-Construction Notification (PCN) has been prepared on behalf of Preservation Park of Delaware County. This is an attachment document to the U.S. Army Corps of Engineers Section 404 application for authorization under Nationwide Permit #3 to impact jurisdictional waters of the U.S. This report provides the information to show compliance with the terms and conditions of Nationwide Permit (NWP) #3.

4.0 PROJECT DESCRIPTION

The Project involves the rehabilitation of the Ohio to Erie Bridge over Walnut Creek in the Village of Sunbury, Delaware County, Ohio. The existing Train Trestle Bridge is 200 ft. long, approximately 45 ft. high, spanning the width of Big Walnut Creek with riveted twin steel plate girder superstructure supported on concrete abutments and piers.

The proposed rehabilitation is intended to support a wider multi-use trail and strengthen the structural integrity of the bridge to prolong its useful life. This rehabilitation work includes: clean and paint entire steel superstructure, fix rear abutment scour and foundation undermining problem, replace existing narrow trail deck with a proposed 10 ft. wide walkway, repair and patch spalled bridge seat at all substructure units and seal surfaces with epoxy-urethane sealer, clean and refurbish all bearings, and repair embankment at new approach pavement at forward abutment.

The bridge construction rehabilitation work will be accomplished through temporary access fill (TAF), in accordance with ODOT Bridge Design Manual Section 201.3.2, which will be used as the medium for construction access within stream. TAF area includes 60 ft. south of bridge and 30 ft. north of bridge, totaling a length of 110 ft. and area of 0.28 acres within Big Walnut Creek. The maximum placement height of TAF will be set approximately one foot above the Ordinary High Water Mark (OHWM). TAF shall accommodate a flow rate equal to twice the highest mean monthly flows such that backwater elevation does not exceed the OHWM. Immediately following construction TAF shall be removed in its entirety and any affected areas of the stream banks will be restored to pre-construction contours and revegetated.

The proposed work at rear abutment includes scour mitigation and countermeasures to hamper the degradation. This includes a concrete encasement around foundation that will result in the permanent fill of 0.001 acre beneath the OHWM of Big Walnut Creek.

The construction of the Project will result in the temporary impact to 0.02 acres of wetland and 0.28 linear feet of stream as well as 0.001 acre of permanent stream fill. See the Wetland Impact Map in Appendix B for details.

5.0 DELINEATION

CT Consultants completed a wetland delineation in August 2021, to determine the presence, extent, and quality of wetlands, streams, and other surface water resources that may be subject to regulation under Section 404 and 401 of the United States Clean Water Act. The wetland delineation was performed in accordance with the 1987 Corps of Engineers Wetlands Delineation Manual and the 2012 Regional Supplement to the Corps of Engineers Delineating manual: Midwest Region (Version 2.0). This report summarizes the results of our wetland investigation.

A review of the available data has been completed to evaluate potential conditions of the site. A walk through of the property revealed that there were wetland areas on the property. Points were plotted on the property to best characterize the wetland and non-wetland areas. Field investigations were completed to determine the wetland boundaries. Delineated wetland boundaries have been marked on the property using neon pink wetland flagging. These boundaries were plotted on a map of the site and the areas were digitally calculated. Thus, it was determined that 0.02 acres of wetlands and 225 linear feet of stream are present within study site.

5.1 METHODOLOGY

On August 17, 1991, the U.S. Army Corps of Engineers was directed under the 1991 appropriation bill to utilize the 1987 Corps of Engineers Wetlands Delineation Manual. The Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0) was issued in April 2012 and is to be used in conjunction with the 1987 Manual. This Supplement is applicable to all or portions of Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, and Wisconsin.

An experienced wetland scientist has reviewed all available resources of information including historic aerial photographs and topographic maps, as well as technical criteria and field indicators to assess the site in accordance to the USACE Wetlands Delineation Manual. Wetland Determination Data Forms are included in Appendix D.

5.2 RESOURCE INFORMATION

USDA SOIL SURVEY

The US Department of Agriculture *Web Soil Survey* (Appendix A) indicated the presence of the following soil types in declining order that are present on the site:

- | | | | |
|--------|-------|---|--|
| 1. LoA | (75%) | Lobdell silt loam,
channery substratum | 0 to 2 percent slopes,
occasionally flooded |
| 2. W | (25%) | Water | |

None of the above listed soil series are listed as “hydric” within the *Hydric Soils of the United States* (1987).

NATIONAL WETLAND INVENTORY

An examination of the US Fish and Wildlife National Wetland Inventory (NWI) Map, (Appendix A) indicates a previously mapped Riverine feature (Big Walnut Creek) within the study site. This area roughly correspond to the currently mapped Big Walnut Creek. The NWI map has been compiled using aerial photography in conjunction with collateral data sources and fieldwork. It should be noted that, however useful it may be as a preliminary wetland resource, the size and shape of wetlands could vary greatly between the available data sources and the on-site observed conditions. NWI maps are not to be construed as the final authority for wetlands existence.

5.3 SITE CHARACTERISTICS

This property is located within the Till Plains Region of central Ohio. The surficial geology of the property was formed by the deposition of silty glacial till or loamy material over silty glacial till. The soils on the property are of the Cardington-Bennington association and are nearly level to steep, moderately well drained, poorly drained, and very poorly drained soils; formed on an undulating low-lime glacial till plain.

The property consists primarily of forested plant communities. Surrounding land use is primarily forested and residential.

5.4 LAND COVER/PLANT COMMUNITIES

Plant communities and/or land covers were determined by characterizing the dominant vegetative strata present within areas that share similar topographical relief, soil types and hydrology. A map of the land covers is located in Appendix C.

1. Mixed Hardwood, Hydrophytic:

Species include American sycamore (*Platanus occidentalis*), American elm (*Ulmus americana*), Common Violet (*Viola sororia*), White Grass (*Leersia virginiana*), False Nettle (*Boehmeria cylindrica*), and Poison Ivy (*Toxicodendron radicans*).

2. Mixed Hardwood, Mesophytic:

Species include Sugar Maple (*Acer saccharum*), American Basswood (*Tilia americana*), American Beech (*Fagus grandifolia*), Tulip Tree (*Liriodendron tulipifera*), Black Walnut (*Juglans nigra*), Multiflora Rose (*Rosa multiflora*), Poison Ivy (*Toxicodendron radicans*), and Virginia Creeper (*Parthenocissus quinquefolia*).

5.5 WETLAND DELINEATION RESULTS

It has been determined that 0.02 acres of wetlands and 225 linear feet of Big Walnut Creek are present on the study site. It is the opinion of CT Consultants that wetlands and streams are considered federally jurisdictional 'Waters of the United States' (WOTUS).

5.6 EXTENT OF WATER RESOURCES

The wetland boundaries were plotted on a map of the site and the areas were digitally calculated. (See the Delineation Map in Appendix B). The following tables show a breakdown of the wetland and stream areas.

Table 1. Extent of Water Resources- Wetlands

Wetland Label	Area (ac.)	Wetland Type	Jurisdictional Status ¹	ORAM Category	Latitude	Longitude
W-A	0.02	Forested	Jurisdictional	2	40.245073°	-82.848003°

¹Preliminary jurisdictional status based on the professional opinion of CT Consultants; subject to review by USACE.

Table 2. Field Quantitative Assessments- Streams

Stream label	Length (L.F.)	Width (L.F.)	Flow Regime	QHEI score	Stream Class	Latitude	Longitude
Big Walnut Creek	225	140-160	Per.	64.5	4	40.244963°	-82.848226°

6.0 MITIGATION

The Project will result in a loss of 0.001 acres of waters of the United States. Additional impacts include 0.02 acres of temporary wetland impact, and 0.28 acres of temporary perennial stream impact for construction. Below is a discussion of compensatory mitigation and restoration that offsets the unavoidable impacts for the construction of the project.

6.1 WETLAND MITIGATION

Proposed wetland impacts are minimal (0.02 acres) and temporary for construction access. Temporary fill will be removed immediately following construction and wetland will be restored to pre-construction contours and revegetated. The project will not result in a loss of wetlands and no mitigation is proposed.

6.2 STREAM MITIGATION

The proposed 0.001 acre of permanent fill to Big Walnut Creek is minimal and beneath the compensatory mitigation requirement. Sandbags and pumps will be used to keep abutment foundation dry for concrete pouring.

The proposed 0.28 acres of temporary impacts to Big Walnut Creek for the purposes of heavy machinery access for bridge rehabilitation. Temporary Access Fill (TAF) will be used in accordance with ODOT BDM Section 201.3.2 and will be removed immediately following construction activities. Flow will be sustained to protect aquatic life and prevent the interruption of existing downstream use. The stream impact is unlikely to have any effect on lowering of the water quality. TAF includes removal of fill material to pre-construction contours and revegetation of disturbed stream banks.

7.0 LISTED SPECIES

The U.S. Fish and Wildlife Service (USFWS) was consulted with to obtain an official list of threatened and endangered species that may occur within the project boundaries (TAILS# 03E15000-2021-TA-2351). After reviewing the comments from the USFWS a total of two mammal species were identified. A copy of the USFWS official response is provided in Appendix F.

See the following chart for a breakdown of the identified species, results of the habitat assessment, and potential effects to each species.

Table 5. Information for Planning and Consultation Species List

Scientific Name	Common Name	Federal Status	Habitat Present	Species Impacted
Mammals				
<i>Myotis septentrionalis</i>	Northern long-eared bat	Threatened	Summer	Potential
<i>Myotis sodalist</i>	Indiana bat	Endangered	Summer	Potential

Northern long-eared Bat (*Myotis septentrionalis*) and Indiana Bat (*Myotis sodalist*):

The federally endangered Indiana bat and the federally threatened Northern long-eared bat have distinct habitats during the winter and summer months. During the winter, both of these species can be found hibernating in underground hibernacula typically consisting of caves and abandoned mines. The summer habitat for these species consist of variety of forested habitats, which are, utilized for roosting, foraging, and commuting. Critical habitat has been designated for the Indiana bat but this project is not located within it. No critical habitat has been designated for the Northern long-eared bat.

No caves or mines were identified during the habitat assessment; therefore, no winter habitat for these species is present in the project boundary.

The project area contains a less than 1 acres of wooded habitat that contained suitable summer roosting, foraging, and commuting habitat for the Indiana and Northern long-eared bat.

Effects and Minimization

To complete the project, it is necessary to clear a total of 0.14 acres of suitable forested habitat. Trees will be cleared during the Seasonal clearing limits (October 1 – March 31) to reduce adverse effects to these species. Due to the lack of potential winter habitat in the project boundaries, no adverse effects to hibernating Indiana or Northern long-eared bats are anticipated from the project.

8.0 HISTORICAL PROPERTIES AND CULTURAL RESOURCES

The project is intended for the bridge to be rehabilitated to support a wider multi-use trail. The work will also strengthen the structural integrity of the bridge and prolong its useful life. Given the project type, it is unlikely to affect Historic Places or cultural resources.

9.0 NATIONAL WILD AND SCENIC RIVER SYSTEM

There are no scenic river systems on or near the project site.

10.0 CONCLUSION

The construction of the Project will result in 0.02 acres of temporary wetland impacts, 0.28 acres of temporary perennial stream impact and 0.001 acre of permanent perennial stream fill. Based on all of the information provided in this Pre-construction Notification, the applicant is requesting Department of the Army authorization to proceed with the project under Nationwide Permit #3.

Please contact me with any questions you may have concerning this submittal.

Respectfully,

CT Consultants, Inc.

Carrie Ricker, PWS
Director of Ecological Services

11.0 SOURCES

Brown, L. (2012). *Weeds and Wildflowers In Winter*. Vermont: The Countryman Press.

Brown, L. (1979). *Grasses, An Identification Guide*. Boston: Houghton Mifflin.

Newcomb, L. (1977). *Wildflower Guide*. New York: Little, Brown and Company.

Peterson, R. and McKenny, M. (1998). *A field guide to wildflowers*. Boston: Houghton Mifflin.

Petrides, G. (1958) *Trees and Shrubs*. Boston: Houghton Mifflin.

Army Corps of Engineers Wetland Delineation Manual, 1987. *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. Cooperative Technical Publication, Washington D.C.

U.S. Army Corps of Engineers. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)*. Washington, DC 20314-1000

U. S. Fish and Wildlife Service. Publication date (found in metadata). *National Wetlands Inventory website*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands/>

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. *Web Soil Survey*. <http://websoilsurvey.sc.egov.usda.gov/> Accessed [August, 2021].

USDA, NRCS. 2019. *National List of Hydric Soils*. USDA-NRCS Soils. Available online at <https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/> Accessed August 2021.

Munsell Soil Color Book. (2009). Munsell.

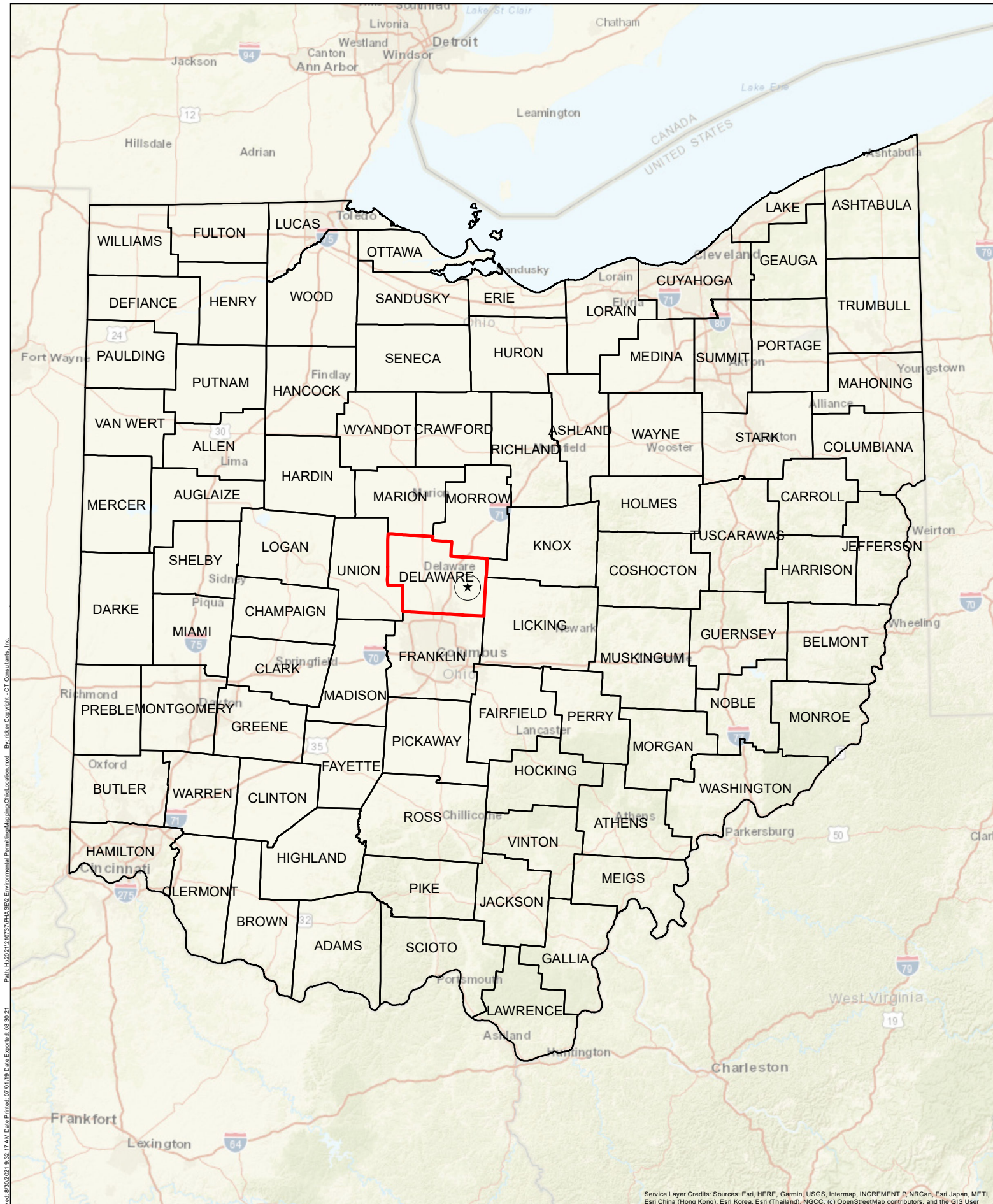
Google Earth V 7.3.2.5776 (December 13, 2018). village of Sunbury, Delaware County, Ohio. 40.244963°, -82.848226°. Altitude 2000-4000. DigitalGlobe 2020. Digital Map <http://www.earth.google.com> [August 2021].

Google Earth V 7.3.2.5776 (December 13, 2018). village of Sunbury, Delaware County, Ohio. 40.244963°, -82.848226°. Altitude 2000-4000. DigitalGlobe 2020. FEMA <http://www.earth.google.com> [August 2021].

Google Earth V 7.3.2.5776 (December 13, 2018). village of Sunbury, Delaware County, Ohio. 40.244963°, -82.848226°. Altitude 2000-4000. DigitalGlobe 2020. Parlay Parcels <http://www.earth.google.com> [August 2021].

Appendix A

Resource Maps



Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User

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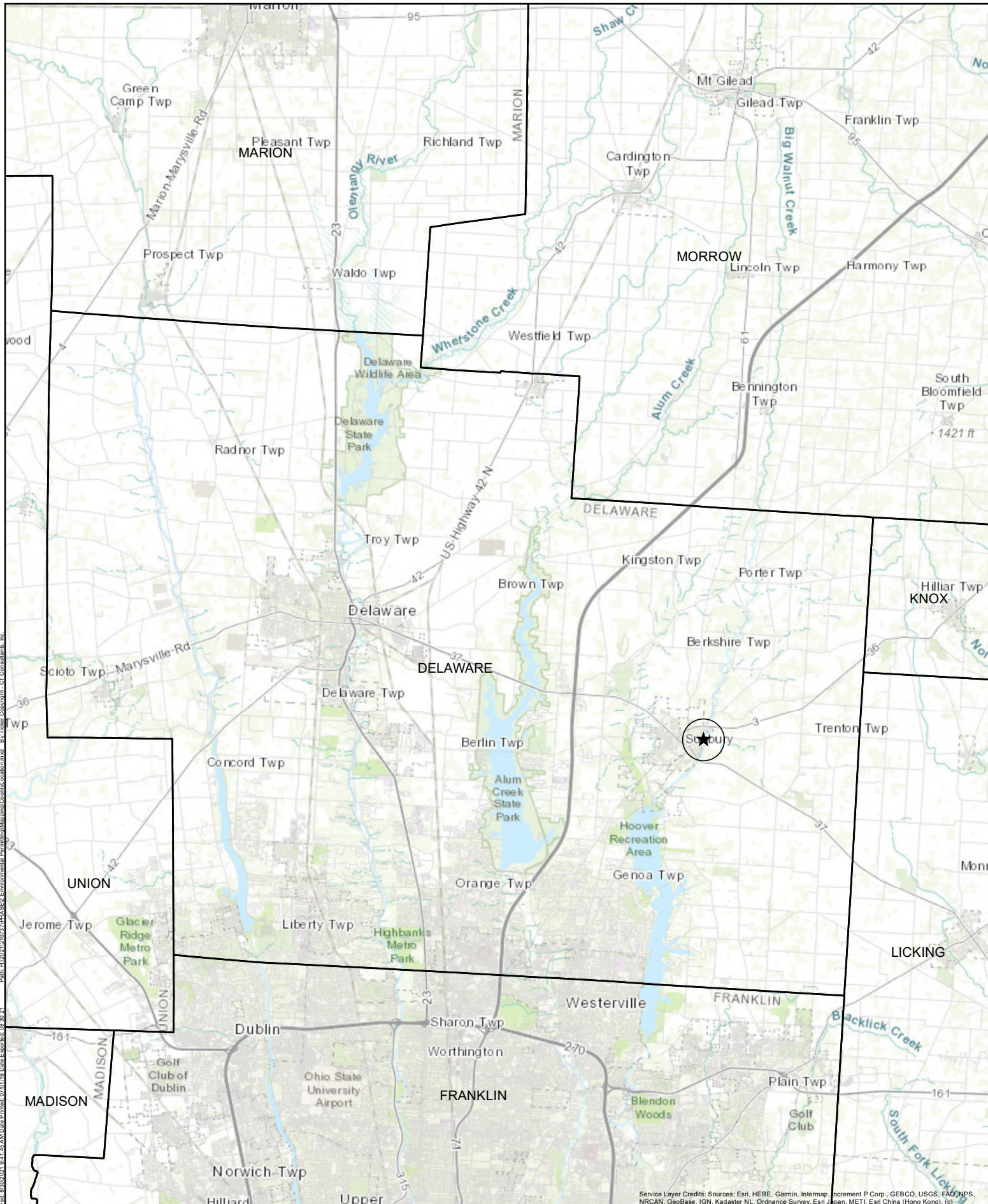


PROJECT COUNTY
PROJECT LOCATION

Figure 1. Ohio Location Map
Preservation Park
Ohio to Erie Bridge over Walnut Creek

0 10 20 Miles
1 inch = 172,684 feet





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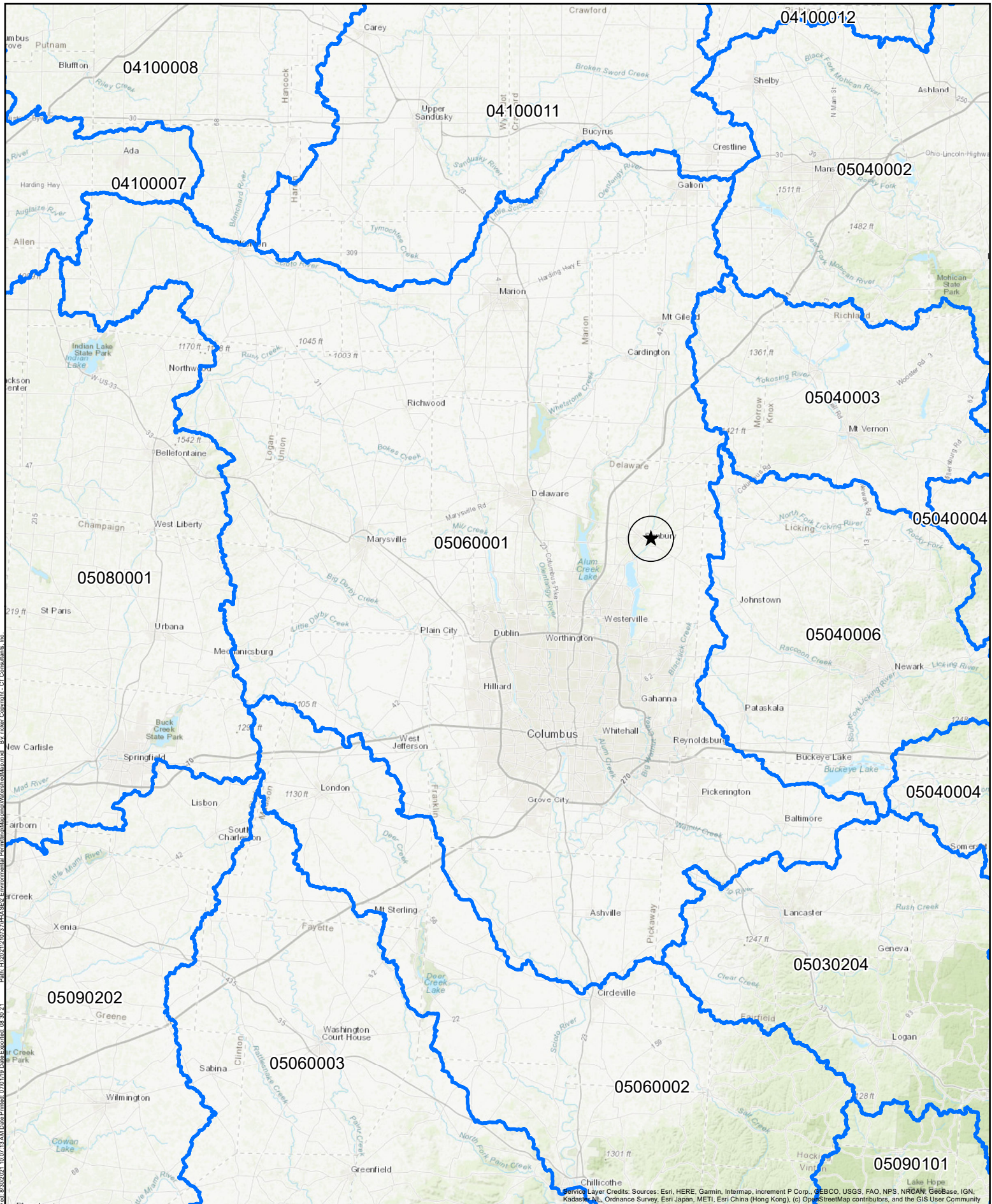


OHIO COUNTIES
PROJECT LOCATION

**Figure 2. County Location Map
Preservation Park
Ohio to Erie Bridge over Walnut Creek**

0 1 2 Miles
1 inch = 20,833 feet





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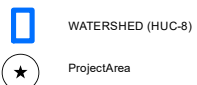
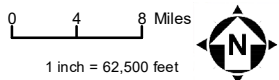
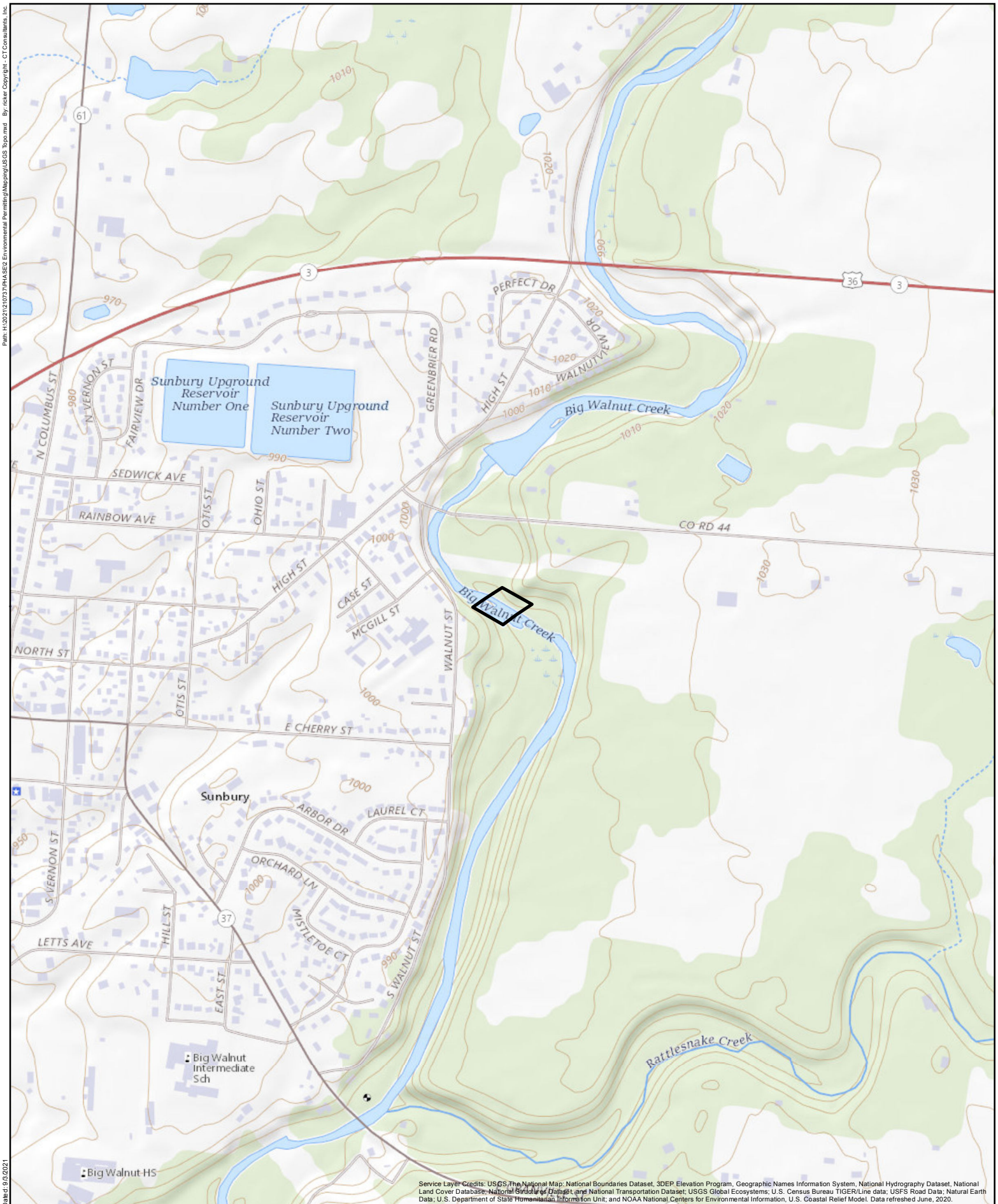


Figure 3. HUC-8 Watershed Map
Preservation Park
Ohio to Erie Bridge over Walnut Creek



Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadastre NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

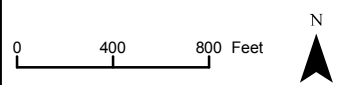


Service Layer Credits: USGS The National Map; National Boundaries Dataset; 3DEP Elevation Program; Geographic Names Information System; National Hydrography Dataset; National Land Cover Database; National Structures Dataset; and National Transportation Dataset; USGS Global Ecosystems; U.S. Census Bureau TIGER/Line data; USFS Road Data; Natural Earth Data; U.S. Department of State Humanitarian Information Unit; and NOAA National Centers for Environmental Information, U.S. Coastal Relief Model. Data refreshed June, 2020.



 Project Area

**Figure 4. USGS Topographic Map
Preservation Park
Ohio to Erie Bridge over Walnut Creek**





Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

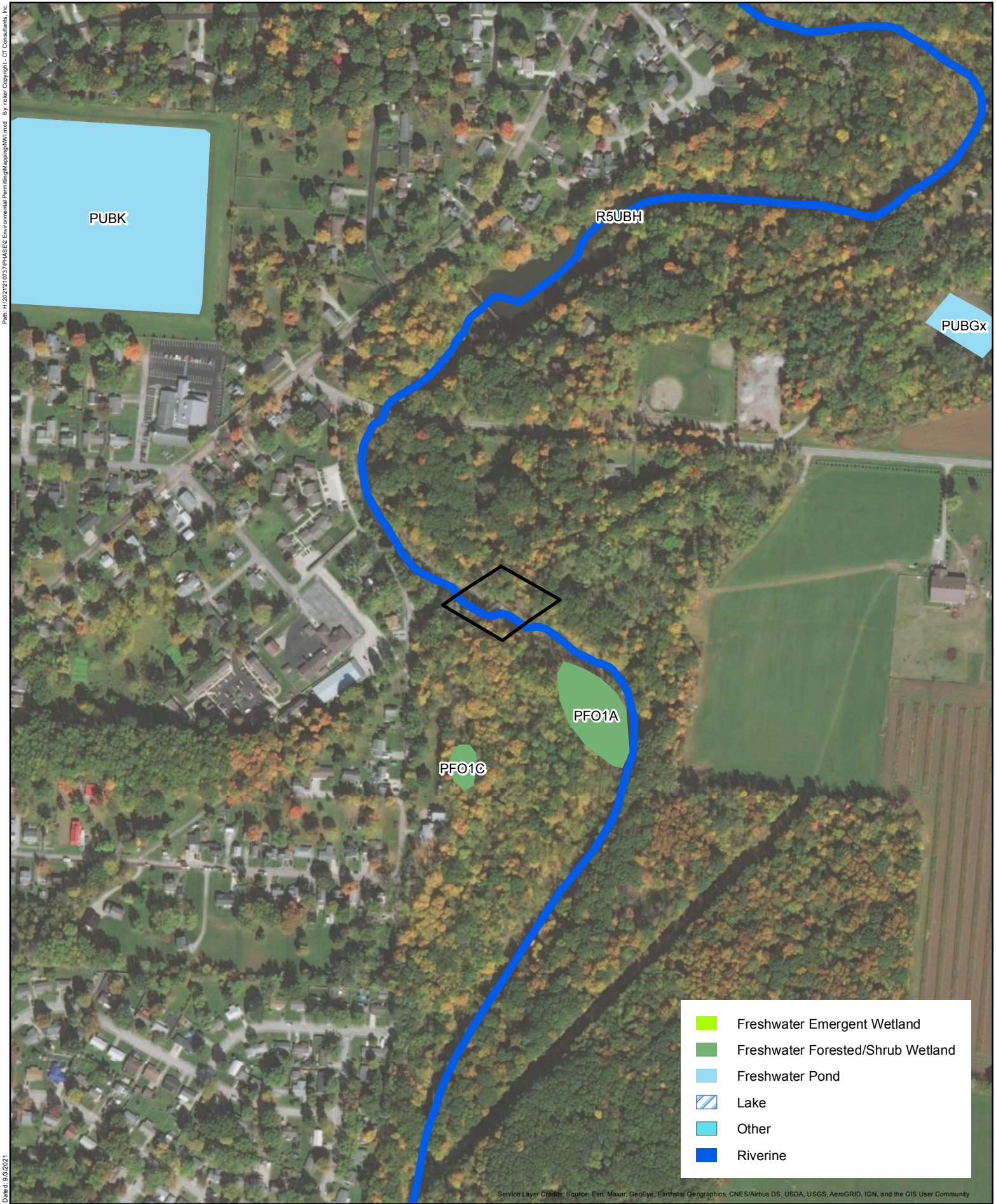


Project Area

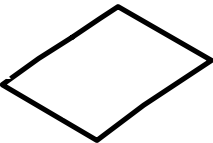
**Figure 5. USDA Soils Map Preservation
Park
Ohio to Erie Bridge over Walnut Creek**

0 100 200 Feet

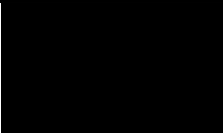




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ProjectArea

**Figure 7. FEMA Flood Hazard
Preservation Parks
Ohio to Erie Bridge over Walnut Creek**

0 200 400 Feet

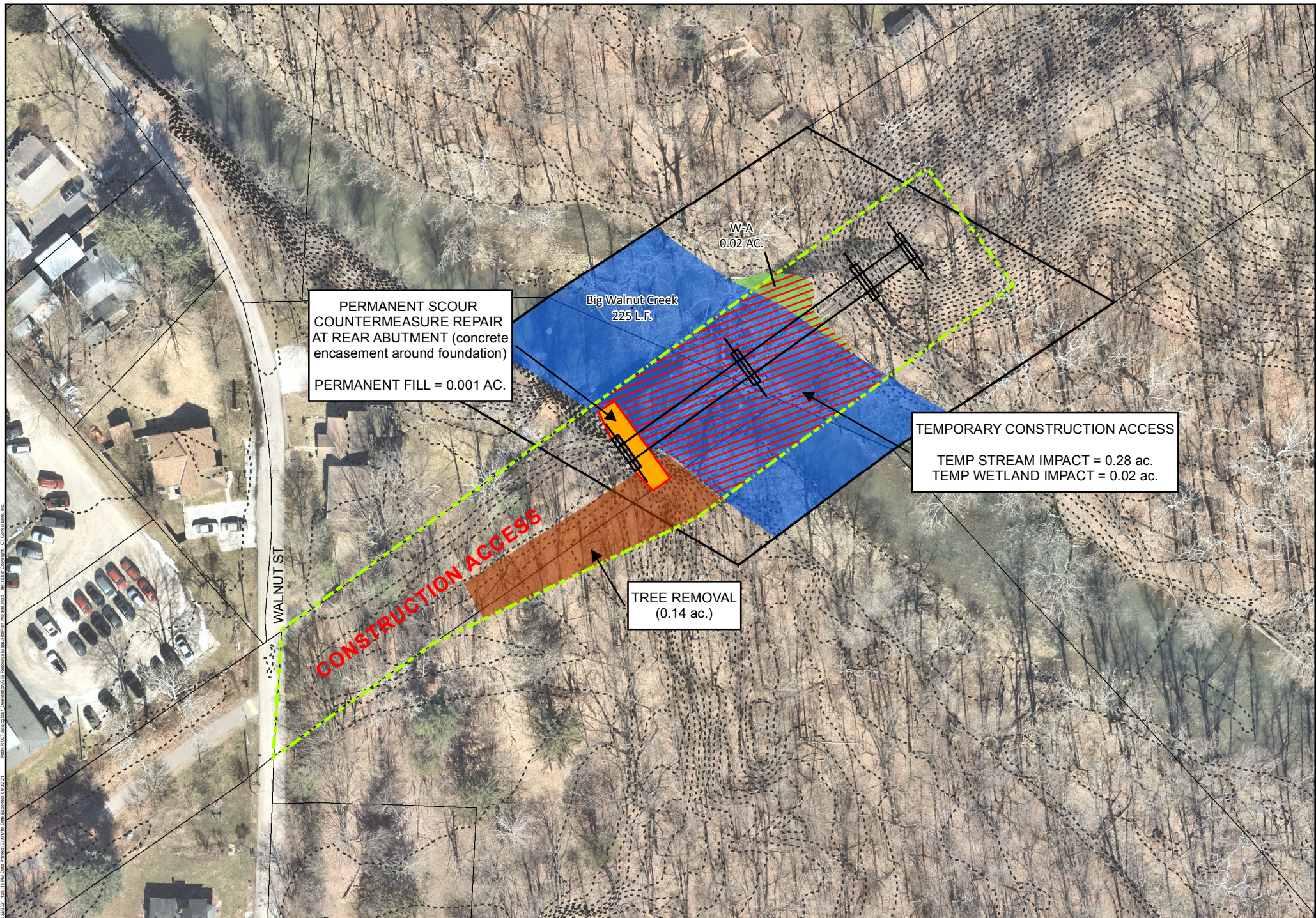


Appendix B

Water Resource Map

Appendix C

Site Plan Impact Map



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	PROJECT AREA		STREAM		PERMANENT FILL
	CONSTRUCTION LIMITS		WETLAND		TEMPORARY IMPACTS
	TREE REMOVAL				

Figure 9. Water Resource Impact Map
Preservation Park
Ohio to Erie Bridge over Walnut Creek

1 inch = 78 feet

Appendix D

Wetland Data Sheets

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Preservation Park City/County: Sunbury / Delaware Sampling Date: 08/17/21
 Applicant/Owner: _____ State: OH Sampling Point: 1
 Investigator(s): Emmett Messer-Kruse, Lindsay Jackovljevic Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): _____
 Slope (%): 20 Lat: 40.244735° Long: -82.848335° Datum: _____
 Soil Map Unit Name: Lobdell silt loam NWI classification: _____

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 <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	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)
1. <u>Acer saccharum</u>	40	Yes	FACU	
2. <u>Tilia americana</u>	25	Yes	FACU	
3. <u>Juglans nigra</u>	10	No	FACU	
4. <u>Liriodendron tulipifera</u>	10	No	FACU	
5. _____	85	=Total Cover		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 = _____
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Rosa multiflora</u>	10	Yes	FACU	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	10	=Total Cover		
Herb Stratum (Plot size: _____)				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.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ =Total Cover				
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ =Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: 1

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		
0-4	10YR 4/2	100					Loamy/Clayey	
4-18	10YR 4/4	100					Loamy/Clayey	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	---

Remarks:
 This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> ? Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Preservation Park City/County: Sunbury / Delaware Sampling Date: 08/17/21
 Applicant/Owner: _____ State: OH Sampling Point: 2
 Investigator(s): Emmett Messer-Kruse, Lindsay Jackovljevic Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): _____
 Slope (%): 5-10 Lat: 40.245206° Long: -82.848207° Datum: _____
 Soil Map Unit Name: Lobdell silt loam NWI classification: _____

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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer saccharum</u>	25	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>42.9%</u> (A/B)																
2. <u>Platanus occidentalis</u>	15	Yes	FACW																	
3. <u>Carya ovata</u>	15	Yes	FACU																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		55 = Total Cover																		
Sapling/Shrub Stratum (Plot size: _____)																				
1. <u>Rosa multiflora</u>	5	Yes	FACU	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>15</u></td> <td>x 2 = <u>30</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>265</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.53</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>15</u>	x 2 = <u>30</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>75</u> (A)	<u>265</u> (B)	Prevalence Index = B/A = <u>3.53</u>	
Total % Cover of:	Multiply by:																			
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Prevalence Index = B/A = <u>3.53</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
		5 = Total Cover																		
Herb Stratum (Plot size: _____)																				
1. <u>Toxicodendron radicans</u>	5	Yes	FAC	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.																
2. <u>Fragaria vesca</u>	5	Yes	UPL																	
3. <u>Solidago rugosa</u>	5	Yes	FAC																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
		15 = Total Cover																		
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>																
2. _____	_____	_____	_____																	
		_____ = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: 2

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		
0-4	10YR 4/2	100					Loamy/Clayey	
4-18	10YR 4/4	90	2.5YR 6/2	10	D	PL	Loamy/Clayey	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
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<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
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<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
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Remarks:
 This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
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<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Preservation Park City/County: Sunbury / Delaware Sampling Date: 08/17/21
 Applicant/Owner: _____ State: OH Sampling Point: 3
 Investigator(s): Emmett Messer-Kruse, Lindsay Jackovljevic Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): _____
 Slope (%): 30 Lat: 40.245026° Long: -82.847668° Datum: _____
 Soil Map Unit Name: Lobdell silt loam NWI classification: _____

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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

VEGETATION – Use scientific names of plants.

<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Tree Stratum (Plot size: _____)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. <u>Acer saccharum</u></td><td style="text-align: center;">40</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>2. <u>Carya ovata</u></td><td style="text-align: center;">10</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">50 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Sapling/Shrub Stratum (Plot size: _____)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">_____ = Total Cover</td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Herb Stratum (Plot size: _____)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. <u>Persicaria virginiana</u></td><td style="text-align: center;">10</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>2. <u>Toxicodendron radicans</u></td><td style="text-align: center;">10</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>3. <u>Parthenocissus quinquefolia</u></td><td style="text-align: center;">10</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACU</td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td>6. _____</td><td></td><td></td><td></td></tr> <tr><td>7. _____</td><td></td><td></td><td></td></tr> <tr><td>8. _____</td><td></td><td></td><td></td></tr> <tr><td>9. _____</td><td></td><td></td><td></td></tr> <tr><td>10. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">30 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Woody Vine Stratum (Plot size: _____)</th> <th style="text-align: center;">Absolute % Cover</th> <th style="text-align: center;">Dominant Species?</th> <th style="text-align: center;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">_____ = Total Cover</td><td></td><td></td></tr> </tbody> </table>	Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Acer saccharum</u>	40	Yes	FACU	2. <u>Carya ovata</u>	10	Yes	FACU	3. _____				4. _____				5. _____				50 = Total Cover				Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	1. _____				2. _____				3. _____				4. _____				5. _____				_____ = Total Cover				Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	1. <u>Persicaria virginiana</u>	10	Yes	FAC	2. <u>Toxicodendron radicans</u>	10	Yes	FAC	3. <u>Parthenocissus quinquefolia</u>	10	Yes	FACU	4. _____				5. _____				6. _____				7. _____				8. _____				9. _____				10. _____				30 = Total Cover				Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	1. _____				2. _____				_____ = Total Cover				<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B) </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>80</u> (A)</td> <td><u>300</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.75</u></td> </tr> </table> </div> <div style="border: 1px solid black; padding: 5px;"> Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0¹ <u>4</u> - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) <u>_____</u> Problematic Hydrophytic Vegetation¹ (Explain) ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. </div> <div style="border: 1px solid black; padding: 5px;"> Hydrophytic Vegetation Present? Yes _____ No <u>X</u> </div>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>80</u> (A)	<u>300</u> (B)	Prevalence Index = B/A = <u>3.75</u>	
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FACW species <u>0</u>	x 2 = <u>0</u>																																																																																																																																								
FAC species <u>20</u>	x 3 = <u>60</u>																																																																																																																																								
FACU species <u>60</u>	x 4 = <u>240</u>																																																																																																																																								
UPL species <u>0</u>	x 5 = <u>0</u>																																																																																																																																								
Column Totals: <u>80</u> (A)	<u>300</u> (B)																																																																																																																																								
Prevalence Index = B/A = <u>3.75</u>																																																																																																																																									
Remarks: (Include photo numbers here or on a separate sheet.)																																																																																																																																									

SOIL

Sampling Point: 3

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		
0-3	10YR 4/2	100					Loamy/Clayey	
3-18	10YR 4/4	100					Loamy/Clayey	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Iron-Manganese Masses (F12)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Red Parent Material (F21)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (F22)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Loamy Mucky Mineral (F1)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes _____ No <u>X</u>
---	---

Remarks:
 This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
---	---

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

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Preservation Park City/County: Sunbury / Delaware Sampling Date: 08/17/21
 Applicant/Owner: _____ State: OH Sampling Point: 4
 Investigator(s): Emmett Messer-Kruse, Lindsay Jackovljevic Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: 40.245108° Long: -82.848043° Datum: _____
 Soil Map Unit Name: Lobdell silt loam NWI classification: _____

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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

VEGETATION – Use scientific names of plants.

<p>Tree Stratum (Plot size: _____)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 15%;">Absolute % Cover</th> <th style="width: 15%;">Dominant Species?</th> <th style="width: 10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. <u>Platanus occidentalis</u></td><td style="text-align: center;">40</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>2. <u>Ulmus americana</u></td><td style="text-align: center;">15</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>3. <u>Carya ovata</u></td><td style="text-align: center;">10</td><td style="text-align: center;">No</td><td style="text-align: center;">FACU</td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">65 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p>Sapling/Shrub Stratum (Plot size: _____)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 15%;">Absolute % Cover</th> <th style="width: 15%;">Dominant Species?</th> <th style="width: 10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td>3. _____</td><td></td><td></td><td></td></tr> <tr><td>4. _____</td><td></td><td></td><td></td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">_____ = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p>Herb Stratum (Plot size: _____)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 15%;">Absolute % Cover</th> <th style="width: 15%;">Dominant Species?</th> <th style="width: 10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. <u>Viola sororia</u></td><td style="text-align: center;">15</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FAC</td></tr> <tr><td>2. <u>Leersia virginica</u></td><td style="text-align: center;">10</td><td style="text-align: center;">Yes</td><td style="text-align: center;">FACW</td></tr> <tr><td>3. <u>Boehmeria cylindrica</u></td><td style="text-align: center;">10</td><td style="text-align: center;">Yes</td><td style="text-align: center;">OBL</td></tr> <tr><td>4. <u>Fragaria vesca</u></td><td style="text-align: center;">5</td><td style="text-align: center;">No</td><td style="text-align: center;">UPL</td></tr> <tr><td>5. _____</td><td></td><td></td><td></td></tr> <tr><td>6. _____</td><td></td><td></td><td></td></tr> <tr><td>7. _____</td><td></td><td></td><td></td></tr> <tr><td>8. _____</td><td></td><td></td><td></td></tr> <tr><td>9. _____</td><td></td><td></td><td></td></tr> <tr><td>10. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">40 = Total Cover</td><td></td><td></td></tr> </tbody> </table> <p>Woody Vine Stratum (Plot size: _____)</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 15%;">Absolute % Cover</th> <th style="width: 15%;">Dominant Species?</th> <th style="width: 10%;">Indicator Status</th> </tr> </thead> <tbody> <tr><td>1. _____</td><td></td><td></td><td></td></tr> <tr><td>2. _____</td><td></td><td></td><td></td></tr> <tr><td colspan="2" style="text-align: right;">_____ = Total Cover</td><td></td><td></td></tr> </tbody> </table>		Absolute % Cover	Dominant Species?	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Indicator Status	1. _____				2. _____				_____ = Total Cover				<p>Dominance Test worksheet:</p> <p>Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A)</p> <p>Total Number of Dominant Species Across All Strata: <u>5</u> (B)</p> <p>Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)</p> <p>Prevalence Index worksheet:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 10%;"></th> <th style="width: 10%;">Multiply by:</th> <th style="width: 40%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td style="text-align: center;">10</td> <td style="text-align: center;">x 1 =</td> <td style="text-align: center;">10</td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">65</td> <td style="text-align: center;">x 2 =</td> <td style="text-align: center;">130</td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">15</td> <td style="text-align: center;">x 3 =</td> <td style="text-align: center;">45</td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">10</td> <td style="text-align: center;">x 4 =</td> <td style="text-align: center;">40</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">5</td> <td style="text-align: center;">x 5 =</td> <td style="text-align: center;">25</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">105 (A)</td> <td></td> <td style="text-align: center;">250 (B)</td> </tr> <tr> <td colspan="4">Prevalence Index = B/A = <u>2.38</u></td> </tr> </tbody> </table> <p>Hydrophytic Vegetation Indicators:</p> <p>____ 1 - Rapid Test for Hydrophytic Vegetation</p> <p><u>X</u> 2 - Dominance Test is >50%</p> <p><u>X</u> 3 - Prevalence Index is ≤3.0¹</p> <p>____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)</p> <p>____ Problematic Hydrophytic Vegetation¹ (Explain)</p> <p>¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.</p> <p>Hydrophytic Vegetation Present? Yes <u>X</u> No _____</p>	Total % Cover of:		Multiply by:		OBL species	10	x 1 =	10	FACW species	65	x 2 =	130	FAC species	15	x 3 =	45	FACU species	10	x 4 =	40	UPL species	5	x 5 =	25	Column Totals:	105 (A)		250 (B)	Prevalence Index = B/A = <u>2.38</u>			
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SOIL

Sampling Point: 4

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 4/2	100					Loamy/Clayey	
6-18	10YR 4/2	70	10YR 5/6	30	C	M	Loamy/Clayey	Prominent redox concentrations

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Redox Depressions (F8)
	³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
---	---

Remarks:
This data form is revised from Midwest Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils, Version 7.0, 2015 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)	
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<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
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<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

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

Remarks:

Appendix E

Water Resource Assessments

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

Instructions

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

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

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

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

Background Information

Name:	Emmett Messer-Kruse	
Date:	8/10/2021	
Affiliation:	CT Consultants	
Address:	8150 Sterling Court, Mentor Ohio	
Phone Number:	440-417-6698	
e-mail address:	emesserkruse@ctconsultants.com	
Name of Wetland:	W-A	
Vegetation Communit(ies):	Forested/Emergent	
HGM Class(es):	Riverine	
Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. See attached.		
Lat/Long or UTM Coordinate	40.244703° -82.848441°	
USGS Quad Name	Sunbury	
County	Delaware	
City/Township	Sunbury	
Section and Subsection		
Hydrologic Unit Code	50600011304	
Site Visit	8/7/2021	
National Wetland Inventory Map	N/A	
Ohio Wetland Inventory Map	N/A	
Soil Survey	LoA	
Delineation report/map	See Attached	

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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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	YES	NO
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).	<input type="checkbox"/> Wetland should be evaluated for possible Category 3 status. Go to Question 2	<input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 3	<input checked="" type="checkbox"/> Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	<input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 4	<input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 5	<input checked="" type="checkbox"/> Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	<input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 6	<input checked="" type="checkbox"/> Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	<input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 7	<input checked="" type="checkbox"/> 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%?	<input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 8	<input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 8b	<input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Wetland should be evaluated for possible Category 3 status Go to Question 9a	<input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Go to Question 9b	<input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Wetland should be evaluated for possible Category 3 status Go to Question 9d	<input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Go to Question 9d	<input checked="" type="checkbox"/> Go to Question 9d
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?	<input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 10	<input checked="" type="checkbox"/> Go to Question 9e
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	<input type="checkbox"/> Wetland should be evaluated for possible Category 3 status. Go to Question 10	<input checked="" type="checkbox"/> 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.	<input type="checkbox"/> Wetland is a Category 3 wetland. Go to Question 11	<input checked="" type="checkbox"/> 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.).	<input type="checkbox"/> Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating.	<input checked="" type="checkbox"/> Complete Quantitative Rating.

Table 1. Characteristic plant species.

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

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

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Preservation Park	Rater(s):	EMK	Date:	9/7/21
0	0	Wetland: W-A			

subtotal max6pts

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)
0	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) (2 pts)
	0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
0	<0.1 acres (0.04ha) (0 pts)

46

Final Score

2

Category

12	12
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subtotal max14pts

Metric 2. Upland buffers and surrounding land use.

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

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

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

30	18
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subtotal max30pts

Metric 3. Hydrology.

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

	High pH groundwater (5)
	Other groundwater (3)
4	1 Precipitation (1)
	3 Seasonal/Intermittent surface water (3)
	Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

3	1 100 year floodplain (1)
	1 Between stream/lake and other human use (1)
	Part of wetland/upland (e.g. forest), complex (1)
	1 Part of riparian or upland corridor (1)

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

	>0.7 (27.6in) (3)
1	04. to 0.7m (15.7 to 27.6in) (2)
	1 >0.4m (<15.7in) (1)

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

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

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

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

Check all disturbances observed

<input type="checkbox"/> ditch	<input type="checkbox"/> point source (non stormwater)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input checked="" type="checkbox"/> dirt road
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input checked="" type="checkbox"/> other - culvert

44	14
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subtotal max20pts

Metric 4. Habitat alteration and development.

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

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

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

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

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

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

Check all disturbances observed

<input type="checkbox"/> mowing	<input type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input checked="" type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input checked="" type="checkbox"/> nutrient enrichment

44

Subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Preservation Park	Rater(s):	EMK	Date:	9/7/21
			Wetland:	W-A	

44

Subtotal1st page

44	0
subtotal	max10pts

Metric 5. Special Wetlands

Check all that apply and score as indicated.

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

46	2
subtotal	max20pts

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities

Score all present using 0 to 3 scale.

<input type="checkbox"/>	Aquatic bed
<input type="checkbox"/>	Emergent
<input type="checkbox"/>	Shrub
<input type="checkbox"/>	Forest
<input type="checkbox"/>	Mudflats
<input type="checkbox"/>	Open water
<input type="checkbox"/>	Other

6b. Horizontal (plan view) interspersions.

Select only one.

<input type="checkbox"/>	High (5)
<input type="checkbox"/>	Moderately high (4)
<input type="checkbox"/>	Moderate (3)
<input type="checkbox"/>	Moderately low (2)
<input type="checkbox"/>	Low (1)
<input type="checkbox"/>	None (0)

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

<input type="checkbox"/>	Extensive >75% cover (-5)
<input type="checkbox"/>	Moderate 25-75% cover (-3)
<input type="checkbox"/>	Sparse 5-25% cover (-1)
<input type="checkbox"/>	Nearly absent <5% cover (0)
<input type="checkbox"/>	Absent (1)

6d. Microtopography

Score all present using 1 to 3 scale.

<input type="checkbox"/>	Vegetated hummocks/tussocks
<input type="checkbox"/>	Coarse woody debris > 15cm (6in)
<input type="checkbox"/>	Standing dead >25cm (10in) dbh
<input type="checkbox"/>	Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Preset 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
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

46.0

GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: <http://www.epa.state.oh.us/dsw/401/401.html>
last revised 1 February 2001 jjm
Comments:

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

		YES	NO	Result
Narrative Rating	Question 1 Critical Habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 3.
	Question 4. Significant bird habitat	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 1.
	Question 6. Bogs	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 3.
	Question 7. Fens	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, evaluate for Category 3; may also be 1 or 2.
Question 10. Oak Openings	<input type="checkbox"/>	<input checked="" type="checkbox"/>	If yes, Category 3	
Question 11. Relict Wet Prairies	<input type="checkbox"/>	<input checked="" type="checkbox"/>	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	12		
	Metric 3. Hydrology	18		
	Metric 4. Habitat	14		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersed, microtopography	2		
	TOTAL SCORE	46		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

Choices	Yes	NO	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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is quantitative rating score <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> 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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	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	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold (<i>including</i> 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?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> 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?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	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

CAT 2

End of Ohio Rapid Assessment Method for Wetlands.

Stream & Location: Big Walnut Creek, Sunbury Ohio RM: 51.1 Date: 08/17/21Scorers Full Name & Affiliation: Lindsey Jakovljevic/ CT
River Code: - - - - - STORET #: - - - - - Lat./Long.: 40.244963 / 82.848226 Office verified location ☐1] **SUBSTRATE** Check ONLY Two substrate TYPE BOXES;
estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		POOL RIFFLE		OTHER TYPES		POOL RIFFLE		ORIGIN		QUALITY			
<input type="checkbox"/> BLDR /SLABS [10]	10	<input type="checkbox"/> 10		<input type="checkbox"/> HARDPAN [4]		<input type="checkbox"/> 15		<input type="checkbox"/> LIMESTONE [1]		<input type="checkbox"/> HEAVY [-2]	<div style="border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;">17</div> <div>Substrate Maximum 20</div>		
<input type="checkbox"/> BOULDER [9]				<input type="checkbox"/> DETRITUS [3]				<input checked="" type="checkbox"/> TILLS [1]		<input type="checkbox"/> MODERATE [-1]			
<input checked="" type="checkbox"/> COBBLE [8]	40	50		<input type="checkbox"/> MUCK [2]				<input type="checkbox"/> WETLANDS [0]		<input checked="" type="checkbox"/> NORMAL [0]			
<input type="checkbox"/> GRAVEL [7]	15	20		<input type="checkbox"/> SILT [2]	15			<input type="checkbox"/> HARDPAN [0]		<input type="checkbox"/> FREE [1]			
<input checked="" type="checkbox"/> SAND [6]	20	20		<input type="checkbox"/> ARTIFICIAL [0]				<input type="checkbox"/> SANDSTONE [0]		<input type="checkbox"/> EXTENSIVE [-2]			
<input type="checkbox"/> BEDROCK [5]								<input type="checkbox"/> RIP/RAP [0]		<input type="checkbox"/> MODERATE [-1]			
(Score natural substrates; ignore sludge from point-sources)								<input type="checkbox"/> LACUSTURINE [0]		<input checked="" type="checkbox"/> NORMAL [0]			
								<input type="checkbox"/> SHALE [-1]		<input type="checkbox"/> NONE [1]			
								<input type="checkbox"/> COAL FINES [-2]					

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

Comments

2] **INSTREAM COVER** Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

<input type="checkbox"/> UNDERCUT BANKS [1]	<input checked="" type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]	<input type="checkbox"/> EXTENSIVE >75% [11]
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input checked="" type="checkbox"/> ROOTWADS [1]	<input checked="" type="checkbox"/> AQUATIC MACROPHYTES [1]	<input checked="" type="checkbox"/> MODERATE 25-75% [7]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input checked="" type="checkbox"/> BOULDERS [1]	<input checked="" type="checkbox"/> LOGS OR WOODY DEBRIS [1]	<input checked="" type="checkbox"/> SPARSE 5-<25% [3]
<input checked="" type="checkbox"/> ROOTMATS [1]			<input type="checkbox"/> NEARLY ABSENT <5% [1]

Comments

12

Cover
Maximum
20

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input checked="" type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input checked="" type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

10

Channel
Maximum
20

4] **BANK EROSION AND RIPARIAN ZONE** Check ONE in each category for EACH BANK (Or 2 per bank & average)
River right looking downstream

EROSION		RIPARIAN WIDTH		FLOOD PLAIN QUALITY		CONSERVATION TILLAGE	
<input type="checkbox"/> NONE / LITTLE [3]	<input checked="" type="checkbox"/> MODERATE [2]	<input checked="" type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> MODERATE 10-50m [3]	<input checked="" type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> CONSERVATION TILLAGE [1]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	<input type="checkbox"/> FENCED PASTURE [1]	<input type="checkbox"/> MINING / CONSTRUCTION [0]	
<input type="checkbox"/> HEAVY / SEVERE [1]		<input type="checkbox"/> NONE [0]		<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]			

Comments

8

Indicate predominant land use(s)
past 100m riparian. Riparian
Maximum
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] ☒ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☐ FAST [1] ☐ INTERMITTENT [-2]
☒ MODERATE [1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential

Primary Contact

Secondary Contact

(circle one and comment on back)

Comments

6.5

Pool /
Current
Maximum
12

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

Check ONE (Or 2 & average).

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input checked="" type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input checked="" type="checkbox"/> BEST AREAS 5-10cm [1]	<input checked="" type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input checked="" type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [metric=0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [-1]

Comments

5

Riffle /
Run
Maximum
8

6] **GRADIENT** (30 ft/mi) ☐ VERY LOW - LOW [2-4]
DRAINAGE AREA (78.2 mi²) ☐ MODERATE [6-10]
☒ HIGH - VERY HIGH [10-6]%POOL: 15%GLIDE: 15%RUN: 10%RIFFLE: 60

6

Gradient
Maximum
10

Check ALL that apply

snails, corbicula, crayfish, justica beds, water level was up at the time of survey most likely the riffles are mostly dry during normal or low flow.

<input type="checkbox"/>	HIGH	<input type="checkbox"/>
<input checked="" type="checkbox"/>	UP	<input type="checkbox"/>
<input type="checkbox"/>	NORMAL	<input type="checkbox"/>
<input type="checkbox"/>	LOW	<input type="checkbox"/>
<input type="checkbox"/>	DRY	<input type="checkbox"/>

<input type="checkbox"/>	< 20 cm	<input type="checkbox"/>
<input type="checkbox"/>	20-<40 cm	<input type="checkbox"/>
<input type="checkbox"/>	40-70 cm	<input type="checkbox"/>
<input checked="" type="checkbox"/>	> 70 cm/ CTB	<input type="checkbox"/>
<input type="checkbox"/>	SECCHI DEPTH	<input type="checkbox"/>

Legacy Tree:

POOL: $\square > 100\text{ft}^2$ $\square > 3\text{ft}$

Stream Drawing:





Appendix F

Site Photographs

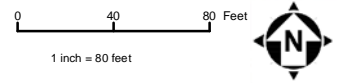


Date Saved: 9/20/2021 12:26:08 PM Date Printed: 9/20/2021 Date: 9/20/2021 Path: H:\2021\10\2021\PhotoLocations.mxd By: rslr Copyright: © Coastal Analytics, Inc.



- | | | | |
|---|-----------------|---|----------|
|  0 | Photo Locations |  | Stream |
|  | ProjectArea |  | Wetlands |

**Figure 10. Photograph Location Map
Preservation Park
Ohio to Erie Bridge over Walnut Creek**





PHOTOGRAPH 1

DESCRIPTION

Upstream Walnut Creek at Bridge

DIRECTION

Northwest

DATE

08/17/2021



PHOTOGRAPH 2

DESCRIPTION

Downstream Walnut Creek at bridge

DIRECTION

Southeast

DATE

08/17/2021



PHOTOGRAPH 3

DESCRIPTION

View of western bridge abutment

DIRECTION

Southwest

DATE

08/17/2021



PHOTOGRAPH 4

DESCRIPTION

View of upland adjacent to eastern bridge abutment

DIRECTION

Southeast

DATE

08/17/2021



PHOTOGRAPH 5

DESCRIPTION

View downstream Walnut Creek towards bridge

DIRECTION

Southeast

DATE

08/17/2021



PHOTOGRAPH 6

DESCRIPTION

View upstream Walnut Creek towards bridge

DIRECTION

Northwest

DATE

08/17/2021



PHOTOGRAPH 7

DESCRIPTION

View of W-A

DIRECTION

West

DATE

08/17/2021



PHOTOGRAPH 8

DESCRIPTION

View of W-A and upland

DIRECTION

Northwest

DATE

08/17/2021

Appendix G

Agency Coordination Documents

Lindsey Jakovljevic

From: Ohio, FW3 <ohio@fws.gov>
Sent: Thursday, September 16, 2021 12:53 PM
To: Lindsey Jakovljevic
Cc: nathan.reardon@dnr.state.oh.us; Parsons, Kate; Carrie Ricker
Subject: Ohio to Erie Trail Bridge over Big Walnut Creek, Sunbury Ohio, Delaware County, Ohio

Caution: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.



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



TAILS# 03E15000-2021-TA-2351

Dear Ms. Jakovljevic,

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

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

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥ 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. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule

(see <http://www.fws.gov/midwest/endangered/mammals/nleb/index.html>), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present. If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats. If Indiana bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

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

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

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

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

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,

A handwritten signature in blue ink, appearing to read "Peter A. Alfieri". The signature is fluid and cursive, with a large loop at the end.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ohio Ecological Services Field Office

4625 Morse Road, Suite 104

Columbus, OH 43230-8355

Phone: (614) 416-8993 Fax: (614) 416-8994



In Reply Refer To:

September 21, 2021

Consultation Code: 03E15000-2021-SLI-2414

Event Code: 03E15000-2021-E-03389

Project Name: Ohio to Erie Trail Bridge Over Big Walnut Creek

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <http://www.fws.gov/migratorybirds/RegulationsandPolicies.html>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/BirdHazards.html>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <http://www.fws.gov/migratorybirds/AboutUS.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ohio Ecological Services Field Office

4625 Morse Road, Suite 104

Columbus, OH 43230-8355

(614) 416-8993

Project Summary

Consultation Code: 03E15000-2021-SLI-2414

Event Code: Some(03E15000-2021-E-03389)

Project Name: Ohio to Erie Trail Bridge Over Big Walnut Creek

Project Type: RECREATION CONSTRUCTION / MAINTENANCE

Project Description: This site is proposed for a rehabilitation of the Ohio to Erie Bridge over Walnut Creek.

Project Location:

Approximate location of the project can be viewed in Google Maps: [https://](https://www.google.com/maps/@40.24501715,-82.84816828894753,14z)

www.google.com/maps/@40.24501715,-82.84816828894753,14z



Counties: Delaware County, Ohio

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: <ul style="list-style-type: none"> Incidental take of the northern long-eared bat is not prohibited at this location. Federal action agencies may conclude consultation using the streamlined process described at https://www.fws.gov/midwest/endangered/mammals/nleb/s7.html Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix H

Mussel Reconnaissance Survey

Matt Simpson
Preservation Parks of Delaware County
2656 Hogback Road
Sunbury, Ohio 43074

**RE: Mussel Reconnaissance Survey - Ohio to Erie Trail
Bridge over Big Walnut Creek**

Dear Mr. Simpson:

CT Consultants, Inc. has completed a reconnaissance survey at the above captioned property. The survey area is approximately 725 feet in length in the Village of Sunbury, Delaware County, Ohio. The site is located at 40.244963° by -82.848226° latitude/longitude. This study area is a proposed for a rehabilitation of the Ohio to Erie Bridge over Walnut Creek. The property consists primarily of forested plant communities. Surrounding land use is primarily residential and forested. A location map is included in Exhibit A.

All freshwater mussel species are afforded protection in the State of Ohio and federally listed species are further protected by the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), thus impacts to mussels and their habitats should be avoided and minimized to the maximum extent practicable. Since impacts cannot be avoided for this Project, streams that contain mussels or potential mussel habitat must be surveyed prior to any proposed stream disturbance. Streams that may contain mussels or potential mussel habitat include those listed in the 2020 Ohio Mussel Survey Protocol (Protocol) and any stream not listed in the Protocol with a drainage area greater than 5 square miles (ODNR and USFWS, 2020). To determine the effort required for freshwater mussel surveys, the Protocol classifies streams based on size and potential presence of federally listed freshwater mussel species, as Group 1, Group 2, Group 3, Group 4 and Unlisted. A reconnaissance survey was completed in Big Walnut Creek (Group 1) to determine mussel presence or absence.

Methods

Per the Protocol, a reconnaissance survey was to be conducted if the following specifications are met:

- Surveyed during the warm months from May 1 to October 1, unless prior approval was granted.
- Water levels at the site must be normal or below normal,
- Water clarity must have had at least 20 inches of visibility, and
- All stream substrates within the survey reach must have been visible and able to be surveyed.



September 9, 2021
Preservation Parks of
Delaware County

Ms. Lindsey Jakovljevic (Permit SC210033) is qualified within the state of Ohio to conduct reconnaissance-level surveys within Group 1 and Unlisted streams. Reconnaissance surveys are meant to be utilized in small wadeable streams not known to contain federally listed species.

The procedures implemented at Big Walnut Creek included:

- Visual search for evidence of shells, shell fragments, or live mussels;
- Survey limits including the Area of Direct Impact plus 200 feet upstream and 400 feet downstream;
- Evaluation of all potential freshwater mussel habitats within the survey limits;
- Time based-visual search of the survey limits;
 - Search time was dependent upon drainage size: The site should be searched for at least 60 minutes for smaller streams (10-100) square miles, or 90 minutes for larger streams (above 100 square miles), unless evidence of a mussel population is found. (Protocol);
 - Detection of live mussels or fresh shells at any point during the search concluded the reconnaissance survey effort; and
 - If weathered dead shells are observed but no live mussels are found during the upstream and downstream search, an additional 20 minutes will be dedicated to a search of the salvage zone (the salvage zone includes the ADI and all applicable buffers)
- An Ohio Mussel Habitat Assessment form was completed.

Photographs were taken of the survey limits, substrate, stream habitats, and any shell material or living mussels (Exhibit B).

Mussel Reconnaissance Results

The reconnaissance survey was conducted on August 17, 2021 in accordance to the Protocol requirements. No fresh dead or live mussels were present on site. One weathered dead valve of *Villosa iris* (Rainbow mussel) was collected on the gravel bar under the bridge. The Ohio Mussel Habitat Assessment data forms as well as photo documentation of the site and mussel species can be found in Exhibit B.

Big Walnut Creek in Delaware County is considered a Group 1 stream per the Protocol, where federally listed species are not expected (ODNR and USFWS, 2020). The receiving stream of Big Walnut Creek is the Scioto River. The drainage areas of Big Walnut Creek at the Project crossing is 78.2 square miles. The reconnaissance survey indicated that no live mussels occur at the crossings of Big Walnut Creek. The substrate was mostly cobble, gravel, and sand with small amounts of silt and boulder.



September 9, 2021
Preservation Parks of
Delaware County

I hope the preceding information will be of help to you. Please feel free to contact me at ljakovljevic@ctconsultants.com with any questions you may have concerning this report. CT Consultants looks forward to further serving you in the future.

Respectfully,
CT Consultants, Inc.

Lindsey Jakovljevic
Environmental specialist

Exhibit A



**Figure 1. Mussel Reconnaissance Map
Preservation Park
Ohio to Erie Bridge over Walnut Creek**



Exhibit B

Ohio Mussel Habitat Assessment Form

Project Information

Project Name: Ohio to Erie Trail bridge over Big Walnut Creek/Preservation Parks
County: Delaware Township: Berkshire
Latitude (DD.DDDD): 40.244963 Longitude (DD.DDDD): -82.848226
Stream Name: Big Walnut Creek Group # (From Appendix A): Group 1

Methods

Name of Surveyor(s): Lindsey Jakovljevic , Carrie Ricker, Emmett Messer-Kruse
Qualification of Surveyor(s): ☒ USFWS Approved ☒ ODNR Approved ☐ Aquatic Biologist (minimum)
Date of Survey: August 17, 2021 Distance Surveyed (ft.): 725
Total Survey Time (min. x people): 180 Scientific Collector's Permit Number(s): SC210033

Note any deviations from the Ohio Mussel Habitat Assessment Methods:

Water level was up but stream was clear to bottom.

Habitat Description of Survey Area

Drainage Area at Survey Location (mi²): 78.2 Water Temp. (°F): 70 Air Temp. (°F): 76

Substrate Types (include %):

<input checked="" type="checkbox"/> Boulder <u>10</u>	<input checked="" type="checkbox"/> Gravel <u>15</u>	<input type="checkbox"/> Bedrock <u> </u>	<input type="checkbox"/> Detritus <u> </u>	<input checked="" type="checkbox"/> Silt <u>15</u>
<input checked="" type="checkbox"/> Cobble <u>40</u>	<input checked="" type="checkbox"/> Sand <u>20</u>	<input type="checkbox"/> Hardpan <u> </u>	<input type="checkbox"/> Muck <u> </u>	<input type="checkbox"/> Artificial <u> </u>

Water Level: ☐ High ☒ Up ☐ Normal ☐ Low ☐ Dry/Interstitial
Visibility: ☐ 0-15 cm ☐ 15-30 cm ☐ 30-50 cm ☐ >50 cm ☒ Visible to Bottom

Average Depth (cm): Riffle 2 Run 25 Pool 46

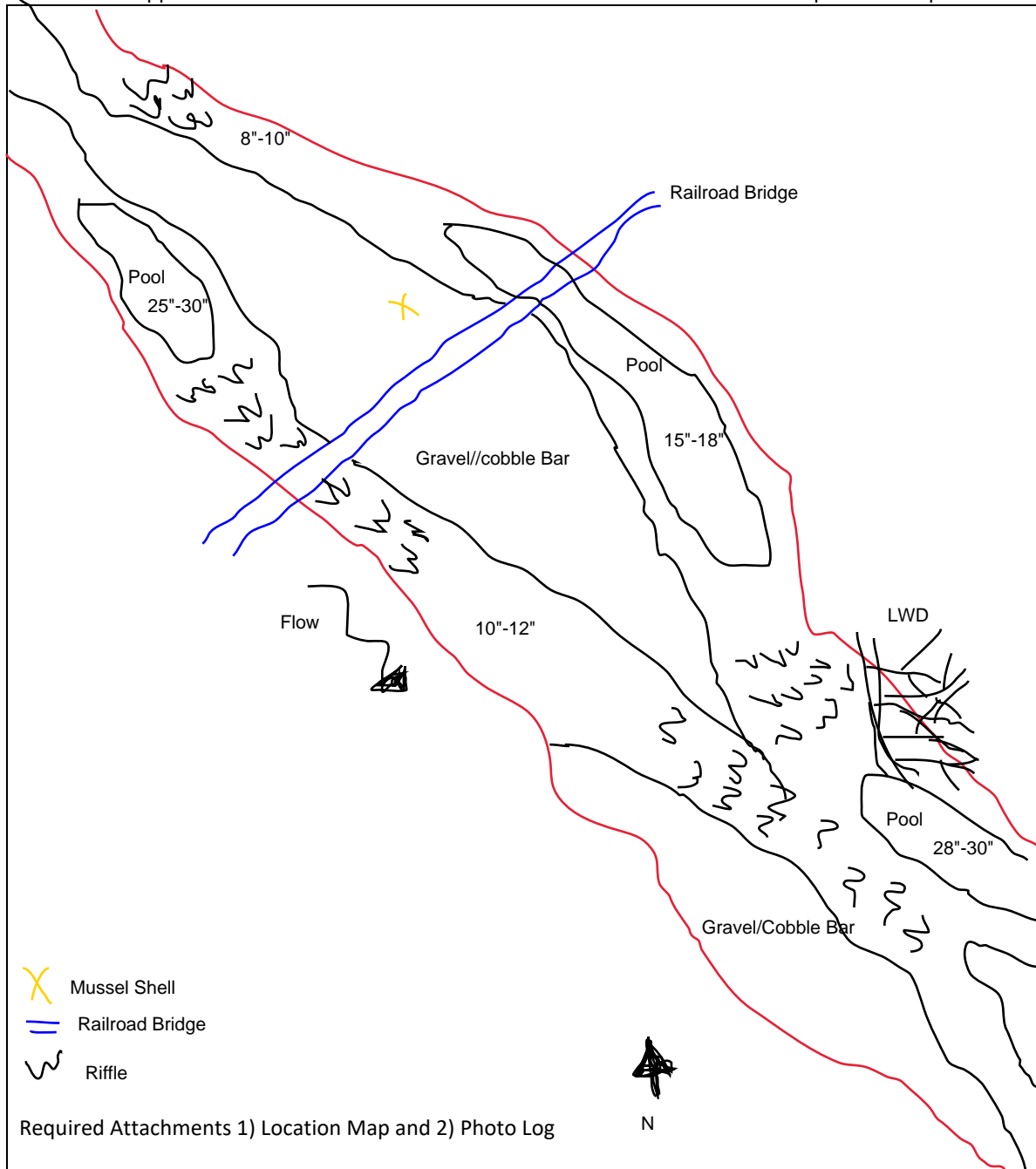
Max Depth (cm): Riffle 7 Run 38 Pool 76

Results

Evidence of Mussels: Presence of fresh dead mussel shells and living mussels will trigger a full mussel survey

☐ None ☐ Mussel Shell ☒ Mussel Shell Only - ☐ Mussel Shell Only ☐ Living Mussels
 Only - Subfossil Weathered Dead - Fresh Dead

Site Sketch. Approximate numbers and locations of shells and live mussels. Include species list if possible.





PHOTOGRAPH 1

DESCRIPTION

View downstream of the
ADI

DIRECTION

Southeast

DATE

August 17, 2021



PHOTOGRAPH 2

DESCRIPTION

View upstream looking at
the ADI

DIRECTION

Northwest

DATE

August 17, 2021



PHOTOGRAPH 3

DESCRIPTION

Substrate in the ADI

DATE

August 17, 2021



PHOTOGRAPH 4

DESCRIPTION

View downstream from the
downstream limits

DIRECTION

Southeast

DATE

August 17, 2021



PHOTOGRAPH 5

DESCRIPTION

View upstream from the
downstream limits

DIRECTION

Northwest

DATE

August 17, 2021



PHOTOGRAPH 6

DESCRIPTION

Substrate in the
downstream limits

DATE

August 17, 2021



PHOTOGRAPH 7

DESCRIPTION

Weathered dead *Villosa iris*

DATE

August 17, 2021



PHOTOGRAPH 8

DESCRIPTION

Weathered dead *Villosa iris*

DATE

August 17, 2021