Colliers Engineering & Design

Wetland Delineation Report

NCHP Phase 3B Project

Colliers Engineering & Design Project Number: 21004202A

December 20, 2024

Prepared for:

NiSource Inc.
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Prepared by:

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Colliers Engineering & Design

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APPENDICES

EXECUTIVE SUMMARY

On behalf of NiSource Inc., Colliers Engineering & Design (CED) conducted field delineations for the North Columbus High Pressure (NCHP) Pipeline Project – Phase 3B within Franklin County, Ohio (hereinafter described as "Survey Corridor"). The Survey Corridor begins at latitudinal coordinate 40.021989 N and longitudinal coordinate -82.950258 W and ends at latitudinal coordinate 40.018147 N and longitudinal coordinate -82.882347 W. The Survey Corridor is located approximately 5 miles north of Columbus, Ohio. Access to the Survey Corridor can be achieved from Woodlawn Road, Granville Street, W Johnstown Road, James Road, and Agler Road.

The Project Study Area is comprised of a 100-foot wide survey corridor centered on the proposed pipeline alignment for approximately 3.75 miles. The Survey Corridor was investigated to identify potential jurisdictional Waters of the U.S. (WOTUS) and wetlands subject to Federal or State regulatory jurisdiction. The delineation methodologies developed by the USACE and the USEPA, as described in the *1987 Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0*) and the subsequently issued USACE regulatory guidance regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high-water mark within drainage features (Environmental Laboratory, 1987; USACE 2012; USACE 2005) were utilized during our investigation. The location and size of jurisdictional areas delineated are shown on the attached Figure 5. Delineation Results (**Appendix A**).

Based on the field investigations, five (5) wetland features, one (1) palustrine unconsolidated bottom (pond) feature, and seven (7) stream features were delineated within the Survey Corridor by CED on March 2nd and 3rd, 2022, October 24, 2022, and December 17, 2024. A total of 0.67 acres of palustrine forested (PFO) wetland, 0.23 acres of palustrine emergent (PEM) wetland, 0.18 acres of pond (palustrine unconsolidated bottom – PUB), 806 linear feet of perennial (R3) stream, and 1,120 linear feet of intermittent (R4) stream were delineated. It is CED's professional opinion that Wetland Features "5" through "9" and Stream Features "4" through "10" are considered jurisdictional WOTUS since they are and/or drain into Big Walnut Creek and Alum Creek. These stream and wetland features can be considered jurisdictional WOTUS since they connect and/or are directly connected to Big Walnut Creek and Alum Creek, which eventually drain to the Scioto River. The location and size of jurisdictional areas delineated are shown on Figure 5. Delineation Results (**Appendix A**).

1.0 PROJECT INFORMATION

Project Name	North Columbus High Pressure (NCHP) Pipeline Project – Phase 3B
Project Location	Woodlawn Road, Granville Street, W Johnstown Road, James Road, and Agler Road
Municipality	Columbus
County	Franklin
State	Ohio
Latitude/Longitude	40.021989 N / -82.950258 W to 40.018147 N / -82.882347 W
Survey Corridor Size	+/- 3.75 mi 100 feet wide survey corridor
U.S.G.S. Quadrangle	Northeast Columbus OH
Potential Jurisdictional Waters of the U.S. (WOTUS) and wetlands	See Aquatic Resource Area Summary Table on Page 5
River Basin (HUC) & sub-watershed	Upper Scioto Basin: 8 Digit HUC Code 05060001
Nearest Stream	Big Walnut Creek, Alum Creek
Navigable Water Nexus	Stream features delineated on the Survey Corridor would be considered jurisdictional WOTUS and wetlands since these features drain towards Big Walnut Creek and Alum Creek
Isolated Wetlands/Waters Present (Yes/No)	No

2.0 INTRODUCTION

On behalf of NiSource Inc., Colliers Engineering & Design (CED) conducted field delineations for the North Columbus High Pressure (NCHP) Pipeline Project – Phase 3B located in the greater North Columbus area within Franklin County, Ohio (hereinafter described as "Survey Corridor"). The Survey Corridor begins at latitudinal coordinate 40.021989 N and longitudinal coordinate -82.950258 W and ends at latitudinal coordinate 40.018147 N and longitudinal coordinate -82.882347 W. The Survey Corridor is located approximately 5 miles north of Columbus, Ohio. Access to the Survey Corridor can be achieved from Woodlawn Road, Granville Street, W Johnstown Road, James Road, and Agler Road. The Survey Corridor is bordered by residential homes, commercial properties, and forested areas. There are unnamed tributaries located within the Survey Corridor that eventually drain to Big Walnut Creek and Alum Creek.

The Survey Corridor was investigated to identify potential jurisdictional Waters of the U.S. (WOTUS) and wetlands subject to Federal or State regulatory jurisdiction. According to the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA) regulations described in Section 404 of the Clean Water Act (33 CFR Section 328.3 and 40 CFR Section 230.3) respectively, wetlands are "...areas that are inundated or saturated with surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

3.0 PROPERTY DESCRIPTION

The Survey Corridor is located within the Upper Scioto River Basin (8 Digit HUC Code 05060001). Access to the Survey Corridor can be achieved from Woodlawn Road, Granville Street, W Johnstown Road, James Road, and Agler Road. The western section of the Survey Corridor drains south and east towards Alum Creek and the central and eastern sections of the Survey Corridor drain to Big Walnut Creek. The Survey Corridor does contain a floodway and a floodplain according to FEMA Floodplain Panel Maps 39049C0189K, 39049C0193K, and 39049C0194K (eff. 6/17/2008). The Survey Corridor contains approximately 35% forested communities and 65% residential properties and commercial properties. The forested areas are comprised of a mixture of oak, tulip poplar, red maple, pine, and sweetgum species that dominate the canopy layer. Big Walnut Creek is located in the eastern section and Alum Creek is located in the western section of the Survey Corridor, flowing north to south. Unnamed tributaries can be found throughout the Survey Corridor eventually discharging into Big Walnut Creek and Alum Creek.

4.0 BACKGROUND INFORMATION

Prior to on-site field investigations, several publicly available sources of information were reviewed to determine the likelihood of wetlands and surface waters occurring within Survey Corridor. These mapping resources generally include, but are not limited to, the United States Geological Survey (USGS) maps (Figure 1. Project Location Map, **Appendix A**), the U.S. Department of Agriculture - Natural Resource Conservation Service (NRCS) soils database (Figure 2. Soil Series Map, **Appendix A**), National Hydrography Dataset (NHD), and the U.S. Fish & Wildlife Service National Wetlands Inventory (NWI) database (Figure 3. National Wetlands Inventory Map, **Appendix A**).

4.1 U.S. GEOLOGICAL SURVEY MAP

The Survey Corridor appears on the *Northeast Columbus OH* Quadrangle USGS Maps (Figure 1. Project Location Map, **Appendix A**) and is depicted as developed properties which contains approximately 35% forested areas habitat communities and 65% residential and commercial properties. The USGS also depicts unnamed tributaries located within the project limits. Residential and forested areas are located within the vicinity of the Survey Corridor to the north, south, east, and west. Elevations at the Survey Corridor range from approximately 770 to 830 feet above mean sea level (MSL) based on the USGS map.

4.2 SOIL SURVEY

The NRCS Web Soil Survey depicts the following 19 soil series map units within the Survey Corridor and Table 1 provides a description of the properties and qualities of each soil:

Table 1. NCHP Phase 3B Project USDA NRCS Soil Series

Map Unit Symbol	Map Unit Name	Drainage Class	Runoff Class	Depth to Water Table
AdC2	Alexandria silt loam, 6 to 12 percent slopes, eroded	Well Drained	High	More than 80 inches
BeB	Bennington silt loam, 2 to 6 percent slopes	Somewhat Poorly Drained	High	About 6 to 12 inches
BfA	Bennington-Urban land complex, 0 to 2 percent slopes	Somewhat Poorly Drained	High	About 6 to 12 inches
CbC	Cardington-Urban land complex, 6 to 12 percent slopes	Moderately Well Drained	High	About 24 to 36 inches
Crd1B1	Cardington silt loam, 2 to 6 percent slopes	Moderately Well Drained	Medium	About 12 to 24 inches
Ee	Eel silt loam, 0 to 2 percent slopes, occasionally flooded	Moderately Well Drained	Low	About 15 to 24 inches

Map Unit Symbol	Map Unit Name	Drainage Class	Runoff Class	Depth to Water Table
ElB	Eldean silt loam, 2 to 6 percent slopes	Well Drained	Low	More than 80 inches
ElD2	Eldean silt loam, 12 to 18 percent slopes, eroded	Well Drained	High	More than 80 inches
So	Sloan silt loam, Columbus Lowland, 0-2 percent slopes, frequently flooded	Very Poorly Drained	Negligible	About 0 to 6 inches
Mh	Medway silt loam, occasionally flooded	Moderately Well Drained	Low	About 18 to 36 inches
Pm	Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes	Very Poorly Drained	Negligible	About 0 to 12 inches
Sh	Shoals silt loam, occasionally flooded	Somewhat Poorly Drained	Very low	About 12 to 36 inches
Pn	Pewamo low carbonate till-Urban land complex, 0 to 2 percent slopes	Very Poorly Drained	Negligible	About 0 to 12 inches
ElC2	Eldean silt loam, 6 to 12 percent slopes, eroded	Well Drained	High	More than 80 Inches
AdE2	Alexandria silt loam, 18 to 25 percent slopes, eroded	Well Drained	Very High	More than 80 inches
KeB	Kendallville silt loam, 2 to 6 percent slopes	Well Drained	Low	More than 80 inches
Cn	Condit silt loam, 0 to 1 percent slopes	Poorly Drained	Negligible	About 0 to 12 inches
BeA	Bennington silt loam, 0 to 2 percent slopes	Somewhat Poorly Drained	High	About 6 to 12 inches
Ut	Udorthents-Urban land complex, gently rolling	-	-	More than 80 inches

Of the 19 mapped soil units, seven (7) soil units: Alexandria silt loam (AdC2), Bennington silt loam (BeB), Bennington-Urban land complex (BfA), Cardington silt loam (Crd1B1), Eel silt loam (Ee), Sloan silt loam, Columbus Lowland (So), and Pewamo silty clay loam (Pm), are listed as being hydric.

5.0 WETLAND & SURFACE WATER DELINEATION METHODOLOGY

The wetland delineation methodologies developed by the USACE and the USEPA, as described in the *1987 Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Version 2.0) and subsequently issued USACE regulatory guidance regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high-water mark within drainage features (Environmental Laboratory, 1987; USACE 2012; USACE 2005), were utilized during our investigation. These methodologies generally involve the review of three parameters (vegetation, soils, hydrology) when making a wetland or non-wetland determination.

The Survey Corridor was walked, community types were characterized, and wetland and surface water boundaries were flagged. Sample stations were established along the boundaries to examine vegetation, soils, and hydrology. Using this data, boundaries were established based on changes in vegetation, soils, hydrology, and surface water characteristics.

6.0 WETLAND AND SURFACE WATER DELINEATION RESULTS

6.1 WETLAND AND SURFACE WATER SUMMARY

On-site field investigations of the Survey Corridor were conducted by CED on March 2nd & 3rd, 2022, October 24, 2022, and December 17, 2024. The on-site delineation did verify the presence of wetlands and surface waters within Survey Corridor. A summary of the aquatic resources identified within the Survey Corridor is provided below in Table 2: Aquatic Resource Summary. The location and size of the aquatic resources delineated are shown on Figure 5. Wetland Delineation Map (**Appendix A**).

Table 2: Aquatic Resource Area Summary Table

Aquatic Resource	PFO Area (AC)	PEM Area (AC)	Aquatic Resource	PUB Area (AC)	Aquatic Resource	R3 Length (LF)	R4 Length (LF)
W-5	0.03	-	PUB3	0.18	S-4	-	204
W-6	-	0.23	-	-	S-5	-	750
W-7	0.29	-	-	-	S-6	-	166
W-8	0.02	-	-	-	S-7	155	-
W-9	0.33	-	-	-	S-8	39	-
-	-	-	-	-	S-9	337	-
-	-	-	-	-	S-10	275	-
Total Wetlands by Class (AC)	0.67	0.23	Total Pond (AC)	0.18	Total Stream by Class (LF)	806	1,120
Total Wetlands (AC)	0.9				Total Stream (LF)	1,926	

Note 1: Cowardin Classification; PFO = palustrine forested wetland; PEM = palustrine emergent wetland; PUB = palustrine unconsolidated bottom (pond), R3 = perennial stream, R4 = intermittent stream

6.2 VEGETATION

Representative plant species within the wetland areas include the following: green ash (*Fraxinus pennsylvanica*), red maple (*Acer rubrum*), sycamore (*Platanus occidentalis*), eastern cottonwood (*Populus deltoides*), amur honeysuckle (*Lonicera mackaii*), multiflora rose (*Rosa multiflora*), reed canary grass (*Phalaris arundinacea*), and broadleaf cattail (*Typha latifolia*).

Representative plant species within the upland areas include the following: eastern cottonwood, red maple, black cherry (*Prunus serotina*), Indian olive (*Elaeagnus angustifolia*), Tatarian honeysuckle (*Lonicera tatarica*), wild privet (*Ligustrum vulgare*), Callery pear (*Pyrus calleryana*) and tall fescue (*Schedonorus arundinaceus*).

6.3 SOILS

Hydric soils are defined as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part of the soil (USDA 2003). The soils in the wetland areas were variable, but for the most part, exhibited low chroma matrices with redoximorphic

features. Soils within the wetland areas on-site exhibit low chroma matrix colors and concentrations that are characteristic of reducing anaerobic conditions associated within the formation of hydric soils. Wetland soils were typically dark grayish brown (10YR 4/2), weak red (2.5Y 4/2 and 2.5Y 5/2), and dark gray (10YR 4/1) within the upper 16 inches. Redox concentrations greater than 3% were observed between 0 and 16 inches below soil surface and are typically dark yellowish brown (10YR 4/6). Soils within jurisdictional areas meet the F3 Depleted Matrix hydric soil indicator. Textures within the jurisdictional areas include clay, silt, and silty clay loam. The upland soils within each area varied from very dark grayish brown (10YR 3/2), yellowish brown (10YR 5/4 and 10YR 5/6), and dark brown (10YR 3/3) and (10YR 5/6) within the upper 16 inches. Soil textures include silt and clay.

6.4 HYDROLOGY

On-site field investigations of the Survey Corridor were conducted by CED on March 2nd & 3rd, 2022, October 24, 2022, and December 17, 2024. The USACE Antecedent Precipitation Tool (APT) was utilized for the Survey Corridor and is provided **Appendix B**. Based the USACE APT tool, the on-site field investigations were conducted in "Wetter than Normal" precipitation conditions in March 2022, "Normal Conditions" in October 2022, and "Normal Conditions" in December 2024 (with a 30-day rolling total).

The delineated wetlands exhibited primary and secondary indicators of wetland hydrology. Positive indicators of wetland hydrology on the property included the following: surface water (A1), high water table (A2), saturation (A3), water marks (B1), and water-stained leaves (B9). Secondary indicators include drainage patterns (B10), and the FAC-neutral test (D5). Indicators of wetland hydrology are largely absent in upland areas.

7.0 WETLAND DELINEATION CONCLUSION

Five (5) wetland features, one (1) palustrine unconsolidated bottom (pond) feature, and seven (7) stream features were delineated within the Survey Corridor by CED on March 2nd and 3rd, 2022, October 24, 2022, and December 17, 2024. A total of 0.67 acres of palustrine forested (PFO) wetland, 0.23 acres of palustrine emergent (PEM) wetland, 0.18 acres of pond (palustrine unconsolidated bottom – PUB), 806 linear feet of perennial (R3) stream, and 1,120 linear feet of intermittent (R4) stream were delineated. Field investigations were conducted in accordance with the manuals, methodologies, and regulatory guidance procedures as stated in Section 5.0 Wetland and Surface Water Delineation Methodology.

It is CED's professional opinion that Wetland Features "5" through "9" and Stream Features "4" through "10" are considered jurisdictional WOTUS since they are and/or drain into Big Walnut Creek and Alum Creek. These stream and wetland features can be considered jurisdictional WOTUS since they connect to Big Walnut Creek and Alum Creek, which eventually drain to the Scioto River. The location and size of jurisdictional areas delineated are shown on Figure 5. Delineation Results (**Appendix A**).

8.0 REFERENCES

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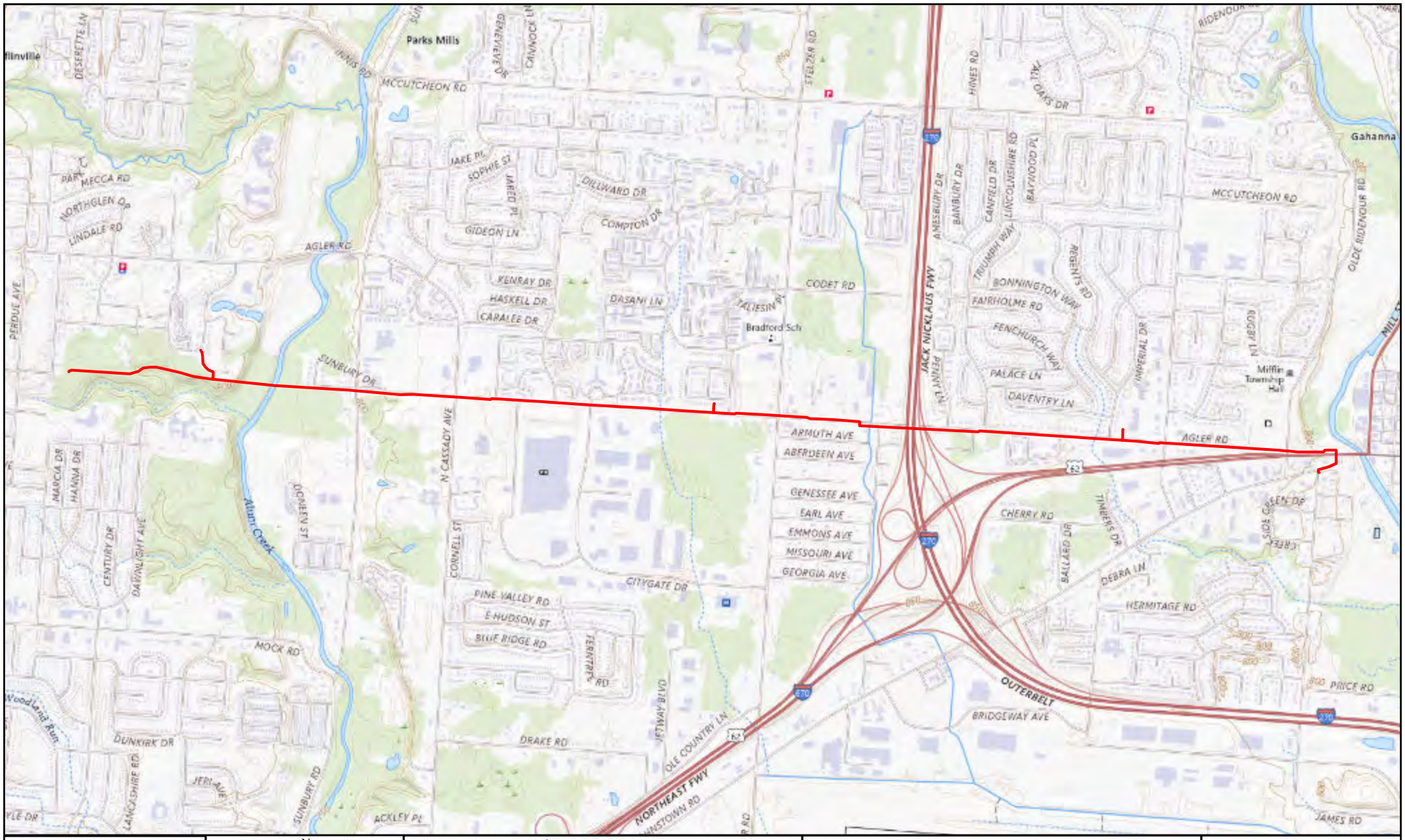
Appendix
Appendix A | Figures



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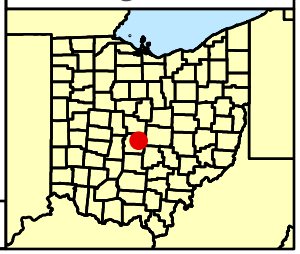
Project Alignment

Project Location Map

NHCP Phase 3B Project

Franklin County, Ohio

Figure 1



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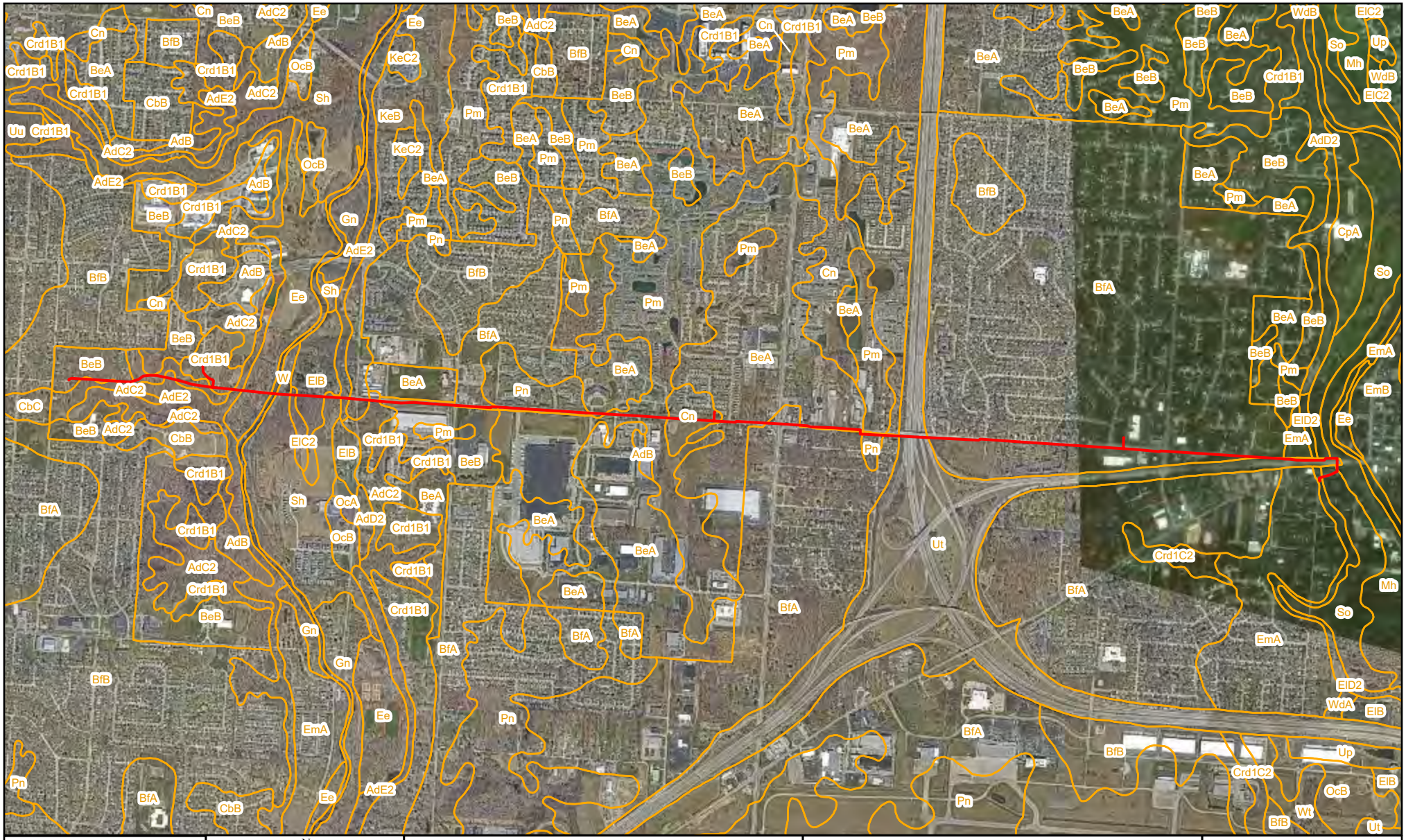

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Project Alignment

Soil Units (SSURGO)

Soil Series Map

NHCP Phase 3B Project

Franklin County, Ohio

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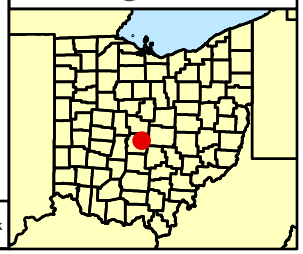
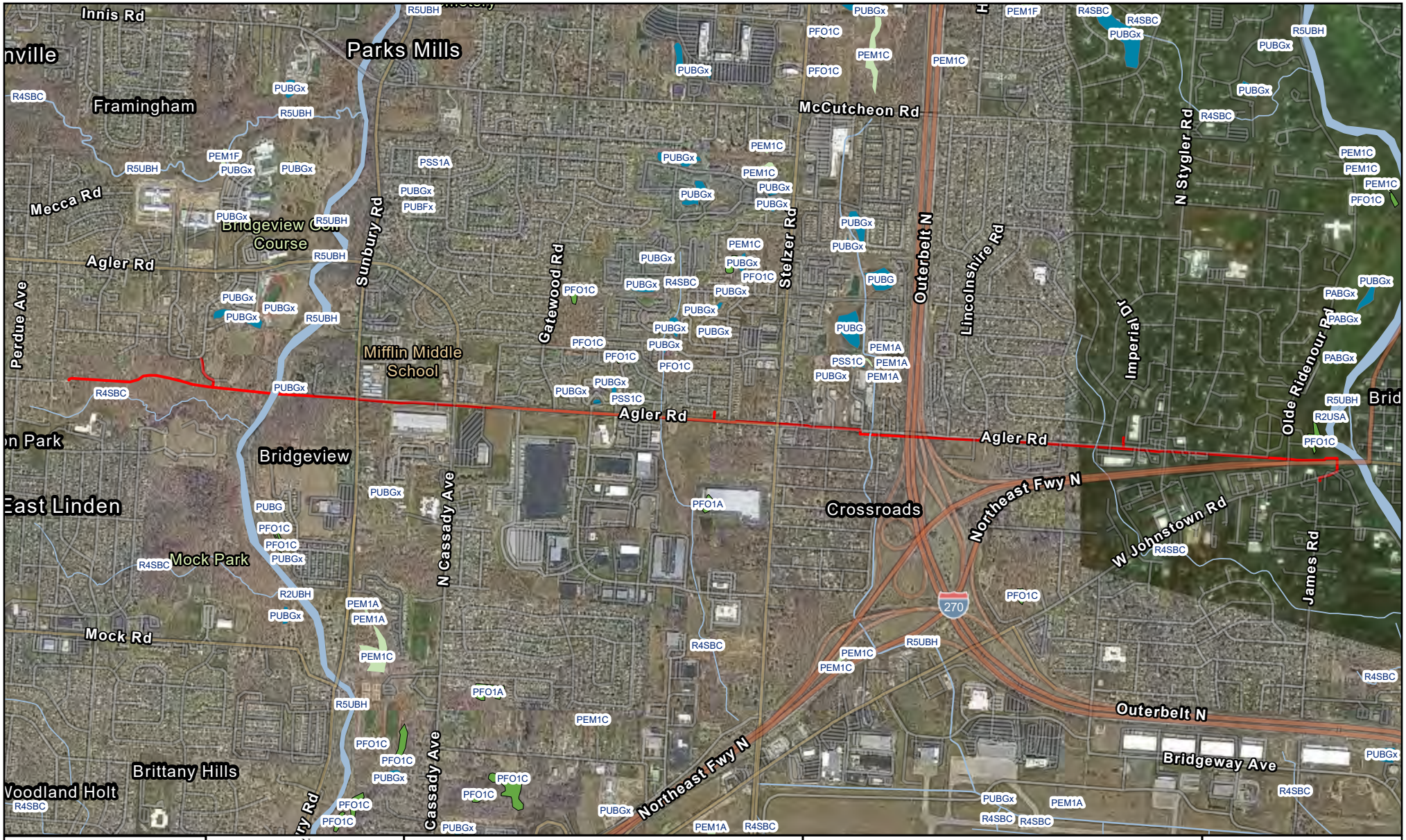
Figure 2





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- Project Alignment
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine

NWI Series Map

NHCP Phase 3B Project

Franklin County, Ohio

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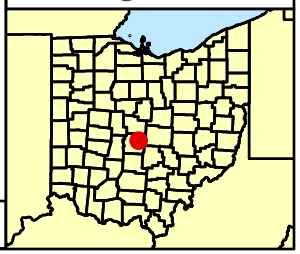
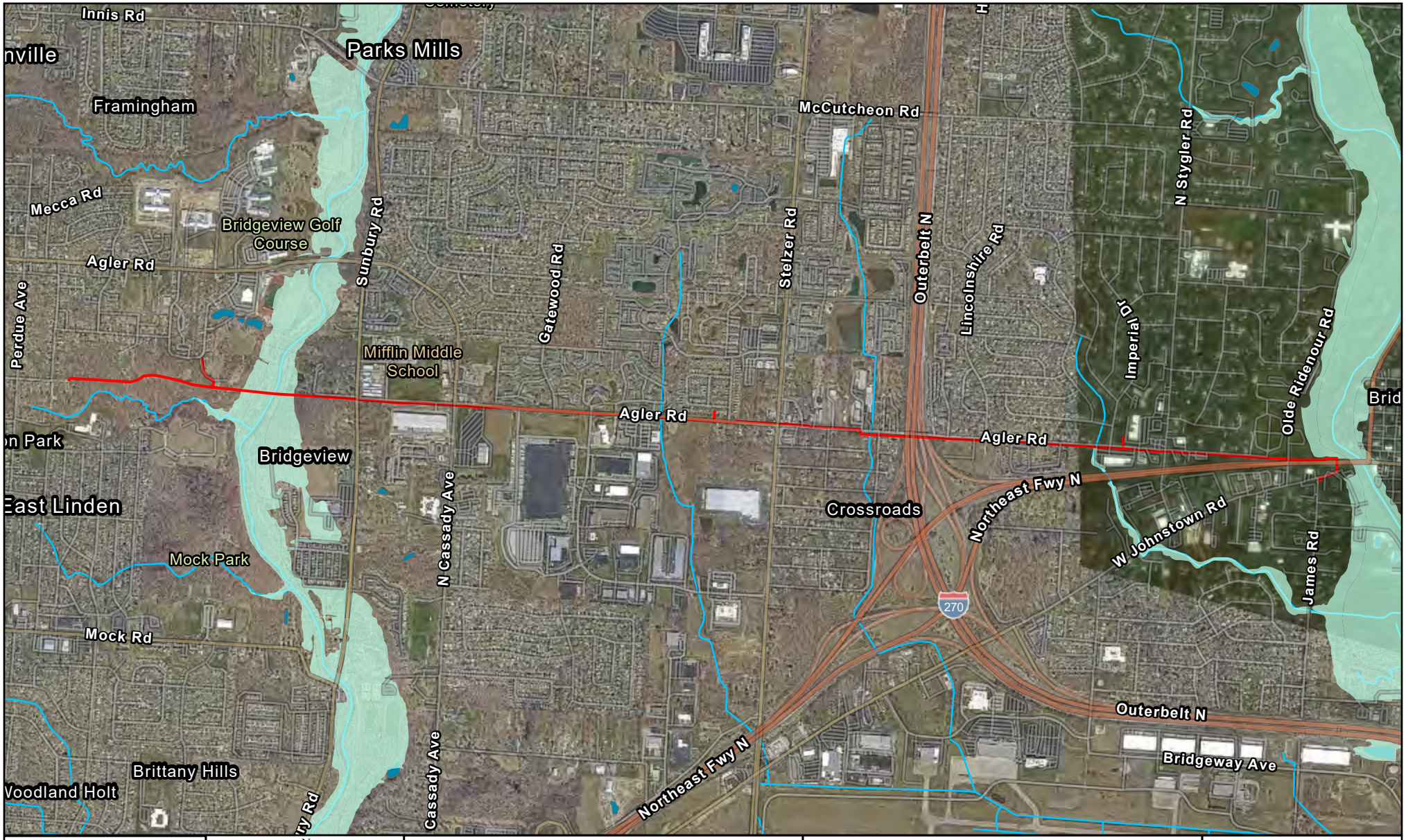
Figure 3





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- Project Alignment
- NHD Flowline
- NHD Waterbody
- 100-Year Floodplain

FEMA/ NHD Map

NHCP Phase 3B Project

Franklin County, Ohio

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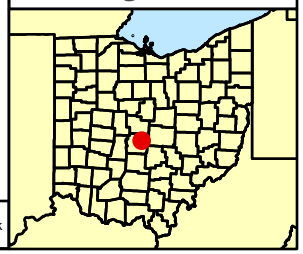
Figure 4



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Project Data

- Project Alignment
- Study Corridor

Survey Data

- Culvert
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PUB Water
- Perennial Stream

Delineation Results Map

NHCP Phase 3B Project

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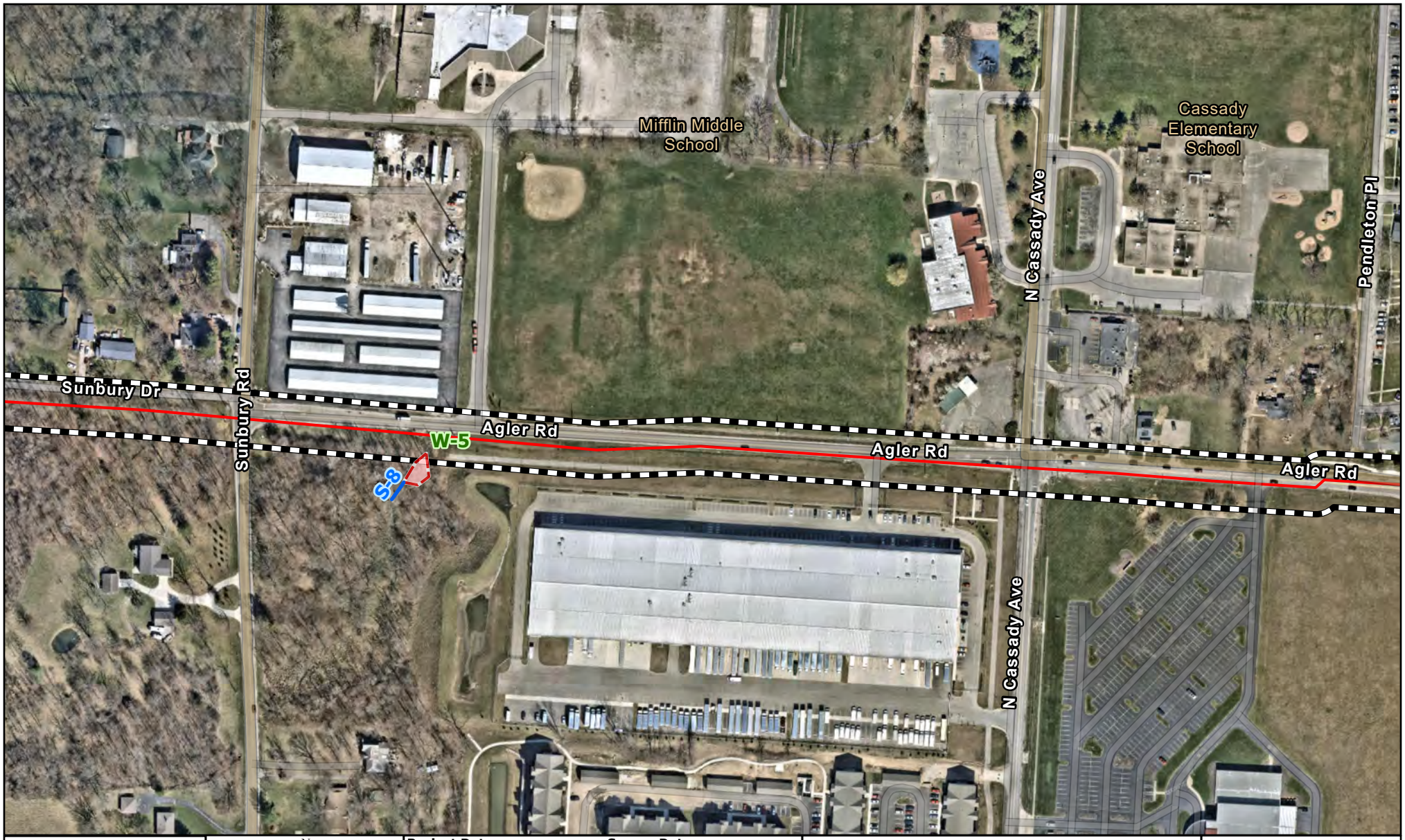

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- PEM Wetland
- PFO Wetland
- PUB Water
- Perennial Stream

Delineation Results Map

NHCP Phase 3B Project

Franklin County, Ohio

Date Saved: 12/20/2024	CED PN: 21004202A	Revised by: frances.buchanek

Figure 5 - Page 4 of 9

Prepared For:

NiSource Inc.
801 E. 86th Avenue
Merrillville, IN 46410

Prepared By:

Colliers Engineering & Design
Pittsburgh Office
1501 Reedsdale Street, Ste 302
Pittsburgh, PA 15233
T: 610.254.9140
www.colliersengineering.com

N
W E
S

0 60 120 240
Feet
0 10 20 40
Meters

Scale: 1:3,000

Project Data

- Project Alignment
- Study Corridor

Survey Data

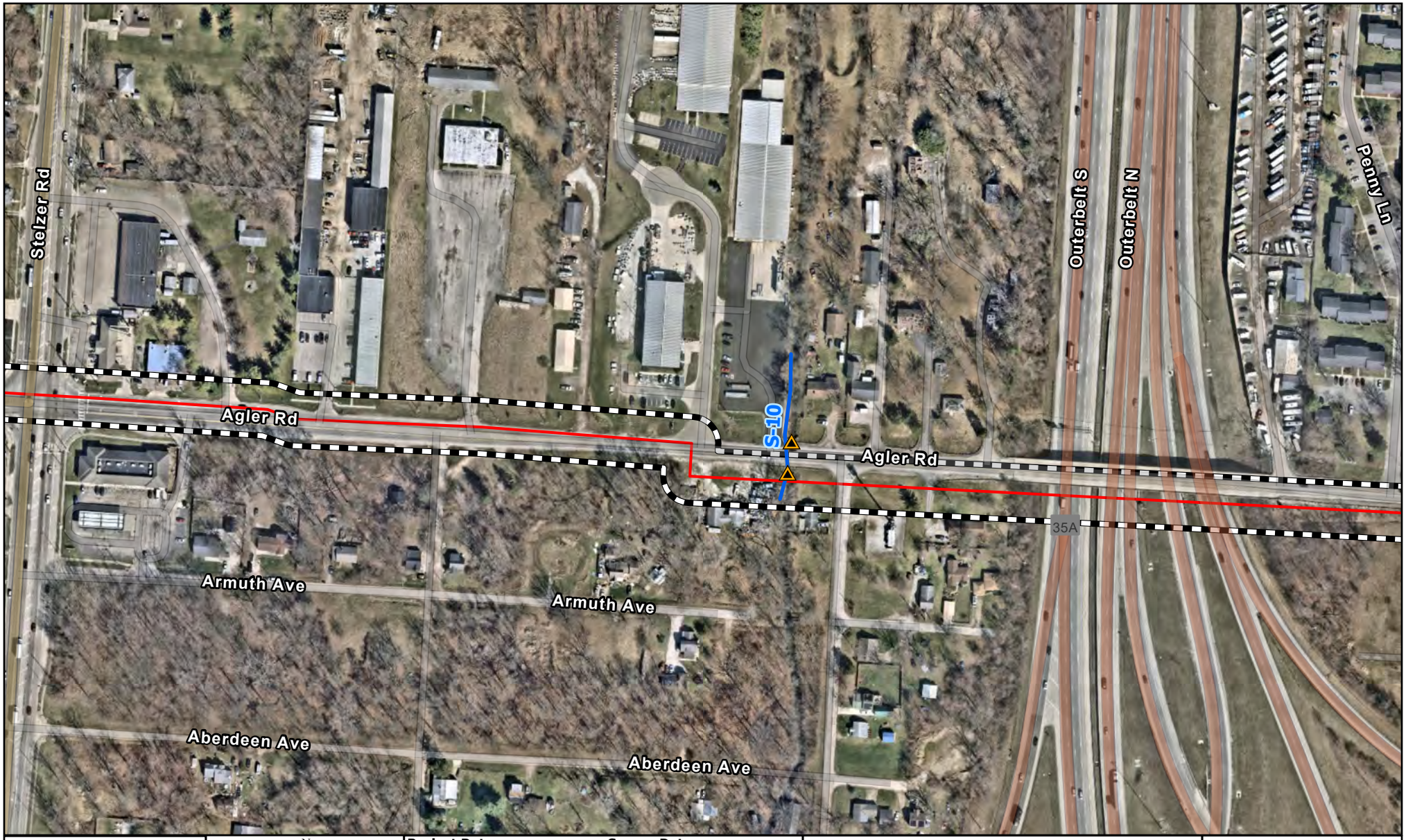
- Culvert
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PUB Water
- Perennial Stream

Delineation Results Map

NHCP Phase 3B Project

Franklin County, Ohio

Date Saved: 12/20/2024	CED PN: 21004202A	Revised by: frances.buchanek



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Meters

Scale: 1:3,000

Project Data
- Project Alignment
- Study Corridor

Survey Data
- Culvert
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PUB Water
- Perennial Stream

Delineation Results Map

NHCP Phase 3B Project

Franklin County, Ohio

Date Saved: 12/20/2024	CED PN: 21004202A	Revised by: frances.buchanek

Prepared For:

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Project Data
- Project Alignment
- Study Corridor

Survey Data
- Culvert
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PUB Water
- Perennial Stream

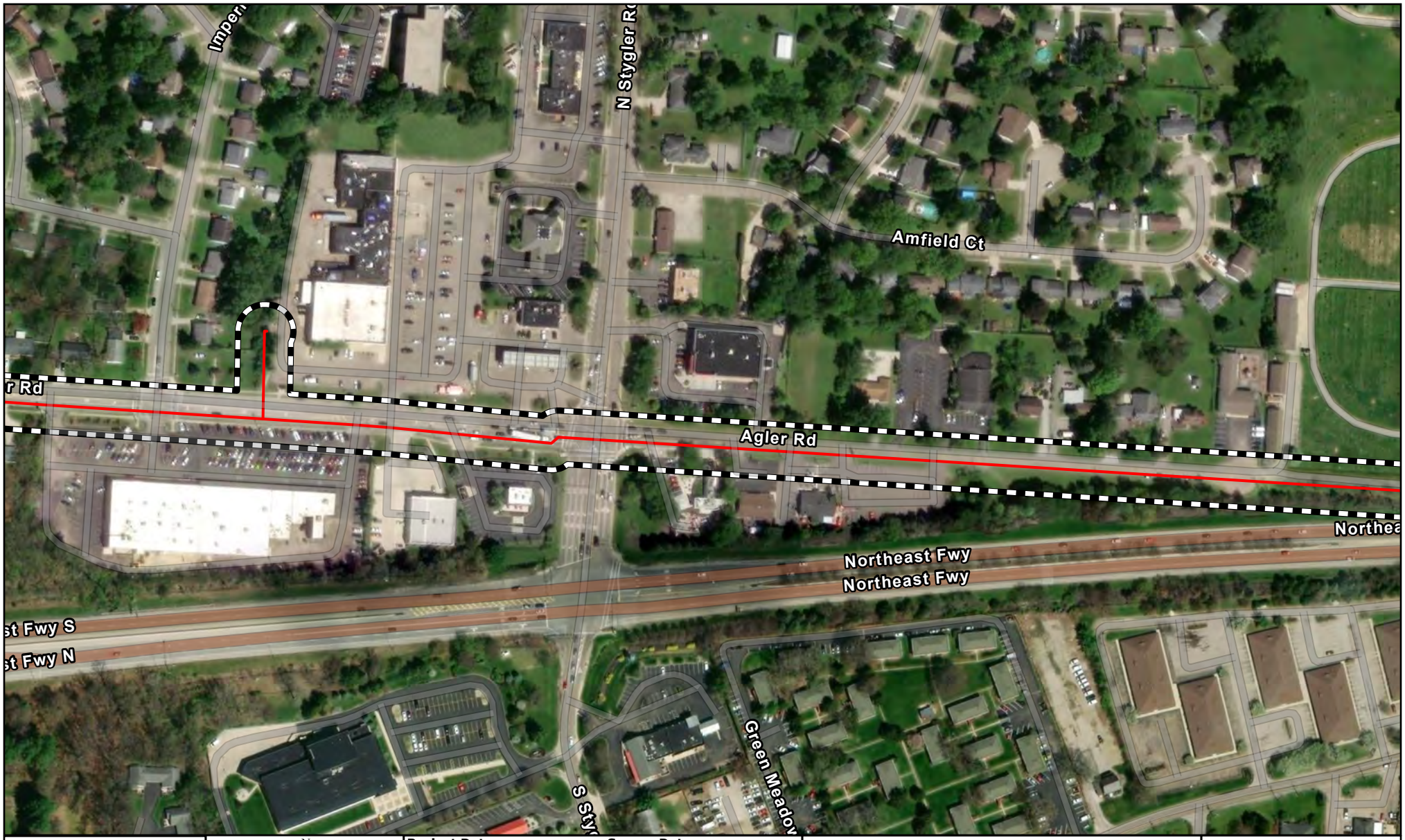
Delineation Results Map

NHCP Phase 3B Project

Franklin County, Ohio

Date Saved: 12/20/2024	CED PN: 21004202A	Revised by: frances.buchanek

Figure 5 - Page 7 of 9



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Feet
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Meters

Scale: 1:3,000

Project Data

- Project Alignment
- Study Corridor

Survey Data

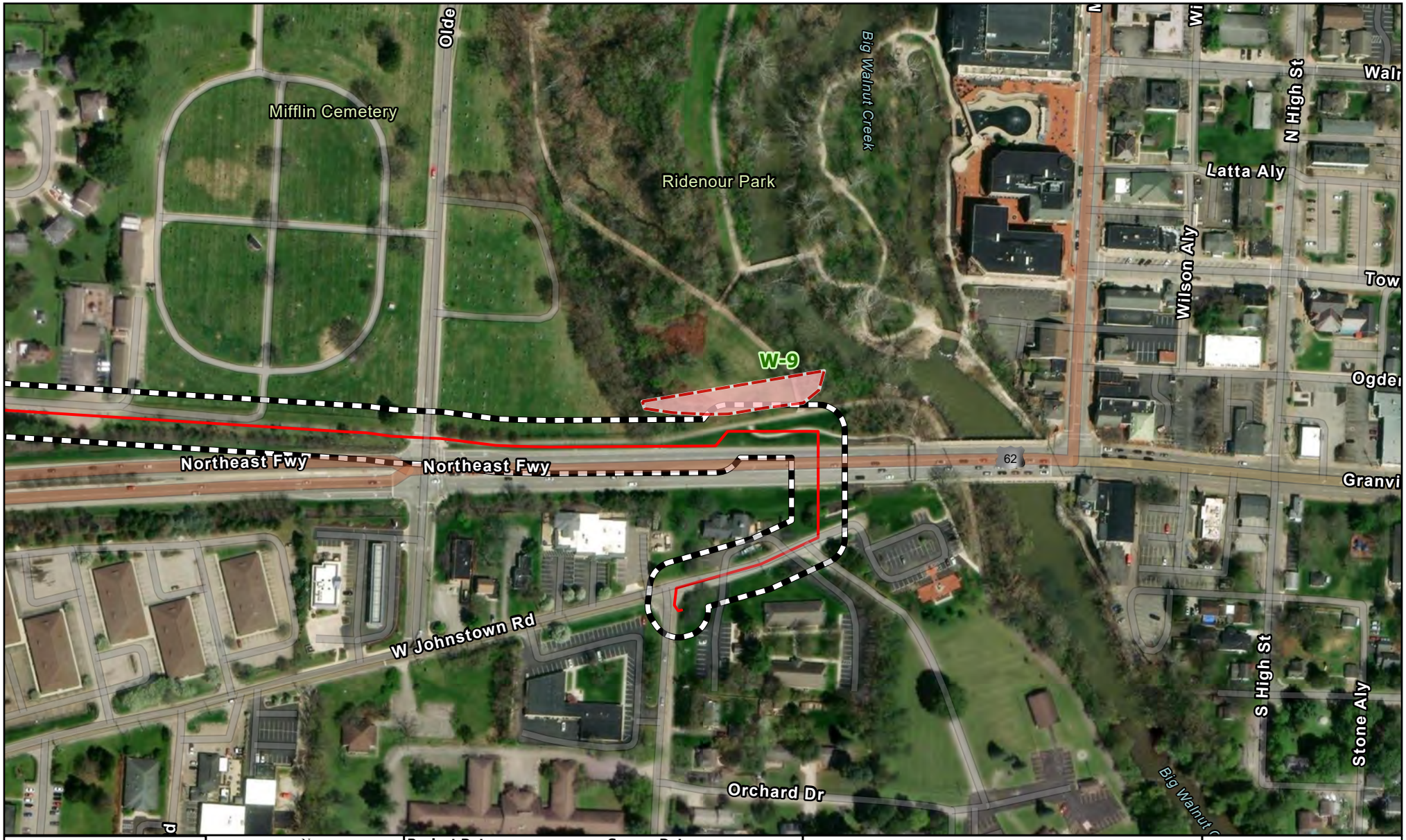
- Culvert
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PUB Water
- Perennial Stream

Delineation Results Map

NHCP Phase 3B Project

Franklin County, Ohio

Date Saved: 12/20/2024	CED PN: 21004202A	Revised by: frances.buchanek



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N
W E
S

0 60 120 240
Feet
0 10 20 40
Meters

Scale: 1:3,000

Project Data

- Project Alignment
- Study Corridor

Survey Data

- Culvert
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PUB Water
- Perennial Stream

Delineation Results Map

NHCP Phase 3B Project

Franklin County, Ohio

Date Saved: 12/20/2024	CED PN: 21004202A	Revised by: frances.buchanek

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& Design

Appendix B | Data Forms

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: NC HP City/County: Columbus/Franklin Sampling Date: 3/2/22
Applicant/Owner: NiSource State: OH Sampling Point: W005(PFO)
Investigator(s): REK Section, Township, Range: T1N R17W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): concave
Slope (%): 5 Lat: Long: Datum:
Soil Map Unit Name: AdC2 NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes Y No (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
PFO rep to W005

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus occidentalis	45	Y	FACW
2. Populus deltoides	10	N	FAC
3.			
4.			
5.			
	55 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15x5)			
1. Platanus occidentalis	5	Y	FACW
2. Lonicera maackii *	15	—	NL
3.			
4.			
5.			
	20 = Total Cover		

Herb Stratum (Plot size: 5'x5')			
1. Euonymus fortunei *	5	-	NL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	= Total Cover		

Woody Vine Stratum (Plot size: 30x30)			
1. Vitis riparia	5	Y	FACW
2.			
	5 = Total Cover		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

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

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

Hydrophytic Vegetation Present? Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)
*Not listed in MW NWPL, not included in hydric veg calcs

SOIL

Sampling Point WOOS1(PFO)

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/2	92	10YR 4/4	8	C	M	Silty Clay Loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- √ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 8"

Water Table Present? Yes X No ___ Depth (inches): 3"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): at surface

Wetland Hydrology Present? Yes X No ___

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

N/A

Remarks:

outlets into channelized stream

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: NCHP City/County: Columbus/Franklin Sampling Date: 3/3/22
Applicant/Owner: NiSource State: OH Sampling Point: W006(PEM)
Investigator(s): REK Section, Township, Range: T1N R17W
Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave
Slope (%): 3 Lat: Long: Datum:
Soil Map Unit Name: EIC2 NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:
PEM rep to W006 - PEM w/in ROW, PFO/PSS on edges

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Platanus occidentalis	10	Y	FACW
2. Acer rubrum	5	Y	FAC
3. Populus deltoides	5	Y	FAC
4.			
5.			
	10	20 = Total Cover	4

Sapling/Shrub Stratum (Plot size: 15x15)			
1. Platanus occidentalis	10	Y	FACW
2. Rosa multiflora	2	N	FACU
3. Cornus amomum	3	Y	FACW
4.			
5.			
	8	15 = Total Cover	3

Herb Stratum (Plot size: 5x5)			
1. Phalaris arundinacea	80	Y	FACW
2. Verbesina alternifolia	10	N	FACW
3. Vernonia noveboracensis	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	48	95 = Total Cover	19

Woody Vine Stratum (Plot size: 30x30)			
1.			
2. Absent			
		= Total Cover	

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:
- ___ 1 - Rapid Test for Hydrophytic Vegetation
- Y 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.

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point: WDUP (PEM)

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

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 1"

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 4"

Wetland Hydrology Present? Yes X No ___

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

N/A

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: NCHP City/County: Columbus/Franklin Sampling Date: 3/3/22
Applicant/Owner: N. Source State: _____ Sampling Point: WD07 (PEM)
Investigator(s): REK Section, Township, Range: T1N R17W
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave
Slope (%): 5 Lat: _____ Long: _____ Datum: _____
Soil Map Unit Name: Ee NWI classification: PUB Gx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	30	Y	FAC
2. Platanus occidentalis	15	Y	FACW
3. Populus deltoides	10	N	FAC
4.			
5.			
76	55	= Total Cover	11

Sapling/Shrub Stratum (Plot size: 5x15)			
1. Acer rubrum	45	Y	FAC
2. Platanus occidentalis	10	N	FACW
3. Fraxinus pennsylvanica	5	N	FACW
4.			
5.			
30	60	= Total Cover	12

Herb Stratum (Plot size: 5x5)			
1. Phalaris arundinacea	75	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	75	= Total Cover	

Woody Vine Stratum (Plot size: _____)			
1. ABSENT			
2.			
		= Total Cover	

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 11 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

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

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: W007C (PFO)

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

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Dark Surface (S7)
- ___ Iron-Manganese Masses (F12)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 1"

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0"

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Reset Form | Print Form

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: North Columbus High Pressure Pipeline Project City/County: Gahannah/Franklin Sampling Date: 12/17/24

Applicant/Owner: Campos EPC State: OH Sampling Point: Wet 8

Investigator(s): AAY Section, Township, Range: T/N R116W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave

Slope (%): 0-3 Lat: 40.022098° Long: -82.941762° Datum: NAD 83

Soil Map Unit Name: Cardington silt loam, 2 to 6 percent slopes NWI or WWI classification: NA

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

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

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

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

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

Remarks:

PFO rep to Wetland 8

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	70	Y	FAC
2.			
3.			
4.			
5.			
	70 = Total Cover		
Sapling/Shrub Stratum (Plot size: 20')			
1. *Populus deltoides*	20	Y	FAC
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	_____ = Total Cover		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	90	x 3 =	270
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	90 (A)		270 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

___ 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.

Hydrophytic Vegetation Present? Yes X No _____

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

Outside growing season.

SOIL

Sampling Point: Wet 8

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y 4/2	90	10YR 5/6	10	C	M	SiCL	
6-15	2.5Y 5/2	80	10YR 5/6	20	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Meets F3

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- X Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 2

Water Table Present? Yes X No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

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

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

Remarks:

Standing water

Reset Form | Print Form

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: North Columbus High Pressure Pipeline Project City/County: Gahannah/Franklin Sampling Date: 12/17/24

Applicant/Owner: Campos EPC State: OH Sampling Point: Wet 9

Investigator(s): AAY Section, Township, Range: T/N R116W

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): Concave

Slope (%): 0-3 Lat: 019161° Long: -82.881995° Datum: NAD 83

Soil Map Unit Name: Sloan silt loam, Columbus Lowland, 0 to 2 percent slopes, frequently flooded NWI or WWI classification: PFO1C

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

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

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

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

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

Remarks:

PFO/PEM rep to Wetland 9

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Platanus occidentalis*	10	Y	FACW
2.			
3.			
4.			
5.			
	10 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5')			
1. *Typha latifolia*	70	Y	OBL
2. *Epilobium hirsutum*	10	N	FACW
3. *Polygonum pensylvanicum*	10	N	FACW
4. *Persicaria sagittata*	10	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
	_____ = Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	80	x 1 =	80
FACW species	30	x 2 =	60
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	110 (A)		140 (B)

Prevalence Index = B/A = 1.27

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

___ 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.

Hydrophytic Vegetation Present? Yes X No _____

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

Outside growing season.

SOIL

Sampling Point: Wet 9

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	20	7.5YR 5/6	20	C	M	SiC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): 2

Water Table Present? Yes X No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

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

Remarks:

Standing water

Reset Form | Print Form

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: North Columbus High Pressure Pipeline Project City/County: Gahannah/Franklin Sampling Date: 12/17/24

Applicant/Owner: Campos EPC State: OH Sampling Point: Up 8

Investigator(s): AAY Section, Township, Range: T/N R116W

Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Convex

Slope (%): 3-5 Lat: 40.022016° Long: -82.941911° Datum: NAD 83

Soil Map Unit Name: Alexandria silt loam, 6 to 12 percent slopes, eroded NWI or WWI classification: NA

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

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

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

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

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

Remarks:

Upland woodlands adjacent to Wetland 8

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	30	Y	FAC
2. *Prunus serotina*	30	Y	FACU
3. *Acer rubrum*	10	N	FAC
4.			
5.			
	70	= Total Cover	
Sapling/Shrub Stratum (Plot size: 20')			
1. *Elaeagnus angustifolia*	40	Y	FACU
2. *Lonicera tatarica*	40	Y	FACU
3. *Ligustrum vulgare*	40	Y	FACU
4.			
5.			
	120	= Total Cover	
Herb Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	_____	= Total Cover	
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
	_____	= Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.00 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	40	x 3 =	120
FACU species	150	x 4 =	600
UPL species	0	x 5 =	0
Column Totals:	190 (A)		720 (B)

Prevalence Index = B/A = 3.79

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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.

Hydrophytic Vegetation Present? Yes _____ No X

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

Outside growing season.

SOIL

Sampling Point: Up 8

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/2	100					SiL	
6-15	10YR 5/4	100					SiCL	Gravelly

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Gauge or Well Data (D9)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Reset Form | Print Form

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: North Columbus High Pressure Pipeline Project City/County: Gahannah/Franklin Sampling Date: 12/17/24

Applicant/Owner: Campos EPC State: _____ Sampling Point: Up 9

Investigator(s): AAY Section, Township, Range: T/N R116W

Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Convex

Slope (%): 5-8 Lat: 40.019084° Long: -82.881988° Datum: NAD 83

Soil Map Unit Name: Udorthents-Urban land complex, gently rolling NWI or WWI classification: NA

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

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

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

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

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

Remarks:

Upland maintained lawn/early successional veg adjacent to Wetland 9

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. *Pyrus calleryana*	20	Y	NI
2.			
3.			
4.			
5.			
	20 = Total Cover		
Herb Stratum (Plot size: 5')			
1. *Schedonorus arundinaceus*	90	Y	FACU
2. *Trifolium repens*	10	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 15')			
1.			
2.			
	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ 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.

Hydrophytic Vegetation Present? Yes _____ No X

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

SOIL

Sampling Point: Up 9

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					SiL	
6-12	10YR 5/6	100					CL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Stratified Layers (A5)
___ 2 cm Muck (A10)
___ Depleted Below Dark Surface (A11)
___ Thick Dark Surface (A12)
___ Sandy Mucky Mineral (S1)
___ 5 cm Mucky Peat or Peat (S3)
___ Sandy Gleyed Matrix (S4)
___ Sandy Redox (S5)
___ Stripped Matrix (S6)
___ Loamy Mucky Mineral (F1)
___ Loamy Gleyed Matrix (F2)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

___ Coast Prairie Redox (A16)
___ Iron-Manganese Masses (F12)
___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

___ Surface Water (A1)
___ High Water Table (A2)
___ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Water-Stained Leaves (B9)
___ Aquatic Fauna (B13)
___ True Aquatic Plants (B14)
___ Hydrogen Sulfide Odor (C1)
___ Oxidized Rhizospheres on Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Recent Iron Reduction in Tilled Soils (C6)
___ Thin Muck Surface (C7)
___ Gauge or Well Data (D9)
___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

___ Surface Soil Cracks (B6)
___ Drainage Patterns (B10)
___ Dry-Season Water Table (C2)
___ Crayfish Burrows (C8)
___ Saturation Visible on Aerial Imagery (C9)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ FAC-Neutral Test (D5)

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

Site: NJCHP	Rater(s): REK	Date: 3/2/22

WOOS PFO

Metric 1. Wetland Area (size).

1 | 1 (max 6 pts. | subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

2 | 3 (max 14 pts. | subtotal)

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

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

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

2

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

Metric 3. Hydrology.

8 | 11 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

7 | 18 (max 20 pts. | subtotal)

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

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

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

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

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

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

Check all disturbances observed

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

18 (subtotal this page)

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ORAM v. 5.0 Field Form Quantitative Rating

Site: NCHP	Rater(s): REK	Date: 3/2/22

18
subtotal first page

WOOS
PFD

Metric 5. Special Wetlands.

0 (max 10 pts.) | 18 (subtotal)

Check all that apply and score as indicated.

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

Metric 6. Plant communities, interspersion, microtopography.

5 (max 20 pts.) | 23 (subtotal)

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

- [0] Aquatic bed
- [1] Emergent
- [1] Shrub
- [2] Forest (4)
- [0] Mudflats
- [0] Open water
- [0] Other_____

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

23 Cat 1

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM v. 5.0 Field Form Quantitative Rating

Site: NLHP	Rater(s): REK	Date: 3/3/22

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts. | subtotal)

WOO6 PEM

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

12 | 14 (max 14 pts. | subtotal)

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

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

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

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

Metric 3. Hydrology.

16 | 30 (max 30 pts. | subtotal)

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

- [ ] High pH groundwater (5)
- [ ] Other groundwater (3)
- [x] Precipitation (1) — 6
- [ ] Seasonal/Intermittent surface water (3)
- [x] Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

9 | 39 (max 20 pts. | subtotal)

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

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

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

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

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

- [ ] None or none apparent (9)
- [ ] Recovered (6) — 2
- [x] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

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

39 (subtotal this page)

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ORAM v. 5.0 Field Form Quantitative Rating

Site: M2CHR	Rater(s): REK	Date: 3/3/22

39 subtotal first page

WOOS PEM

Metric 5. Special Wetlands.

0 max 10 pts. | 39 subtotal

Check all that apply and score as indicated.

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

Metric 6. Plant communities, interspersion, microtopography.

3 max 20 pts. | subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

5

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

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

42 Cat Mod 2

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM v. 5.0 Field Form Quantitative Rating

Site: NCHP	Rater(s): REK	Date: 3/3/22

WOO7 (PFO)

Metric 1. Wetland Area (size).

1 (max 6 pts.) | 1 (subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

9 (max 14 pts.) | 10 (subtotal)

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

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

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

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

Metric 3. Hydrology.

13 (max 30 pts.) | 23 (subtotal)

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

8 (max 20 pts.) | 31 (subtotal)

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

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

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

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

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

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

Check all disturbances observed

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

31 subtotal this page

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ORAM v. 5.0 Field Form Quantitative Rating

Site: NCHP	Rater(s): REK	Date: 3/3/22

W007
PFO

31
subtotal first page

0	31
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

6	37
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

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

5

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

37 cat mod 2.

End of Quantitative Rating. Complete Categorization Worksheets.

Site: NCHP-Wet 8	Rater(s): AAY	Date: 12/17/24

Metric 1. Wetland Area (size).

0	0
max 6 pts.	subtotal

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

4	4
max 14 pts.	subtotal

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

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

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

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

Metric 3. Hydrology.

10	18
max 30 pts.	subtotal

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

8	26
max 20 pts.	subtotal

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

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

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

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

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

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

Check all disturbances observed

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

76
subtotal this page

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: NCHP - Wet 8	Rater(s): AMY	Date: 12/17/24

26
subtotal first page

0	26
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

4	30
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

30

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM v. 5.0 Field Form Quantitative Rating

Site: NCHP-Wet 9	Rater(s): AAY	Date: 12/17/24

Metric 1. Wetland Area (size).

3	0
max 6 pts.	subtotal

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

5	8
max 14 pts.	subtotal

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

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

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

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

Metric 3. Hydrology.

15	23
max 30 pts.	subtotal

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

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

Check all disturbances observed

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

Metric 4. Habitat Alteration and Development.

8	31
max 20 pts.	subtotal

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

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

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

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

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

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

Check all disturbances observed

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

31
subtotal this page

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: NC HP - Wet 9	Rater(s): AMM	Date: 12/17/24

31
subtotal first page

0	31
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

8	39
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) Interspersion.
Select only one.

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

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

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

6d. Microtopography.
Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

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

Narrative Description of Vegetation Quality

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

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

39

End of Quantitative Rating. Complete Categorization Worksheets.

5001

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 46

SITE NAME/LOCATION NSCHP

SITE NUMBER 5001 RIVER BASIN Scioto River DRAINAGE AREA (mi²) 4mi²

LENGTH OF STREAM REACH (ft) 1516 LAT. 40.013582 LONG. 82.834119 RIVER CODE _____ RIVER MILE _____

DATE 5/2/22 SCORER DEL COMMENTS _____

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

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

culvert, channelization

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☒	SILT [3 pts]	70
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pt]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]	5	☐	CLAY or HARDPAN [0 pt]	
☒	GRAVEL (2-64 mm) [9 pts]	15	☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]		☐	ARTIFICIAL [3 pts]	12

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 5 (A) 12

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 4

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40

16

A + B

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

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

COMMENTS _____ **MAXIMUM POOL DEPTH (centimeters):** 10

Pool Depth Max = 30

5

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

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

COMMENTS _____ **AVERAGE BANKFULL WIDTH (meters)** 1.2

Bankfull Width Max=30

15

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☒ EWH Name: Rocky Fork Distance from Evaluated Stream 0.8m.

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Albany, OH NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Franklin Township / City: Gahanna

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/25/22 Quantity: 0.8"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 15%0

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

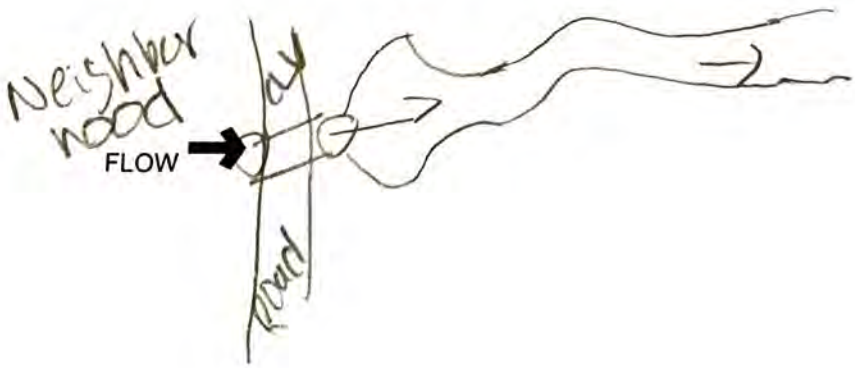
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



5002

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 61

SITE NAME/LOCATION NCHP

SITE NUMBER 5002 RIVER BASIN Scioto DRAINAGE AREA (mi²) 0.3mi²

LENGTH OF STREAM REACH (ft) 200 LAT. 40.011017 LONG. 82.83408 RIVER CODE _____ RIVER MILE _____

DATE 8/2/22 SCORER REK COMMENTS _____

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

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

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☒	SILT [3 pt]	80
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pt]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]	5	☐	CLAY or HARDPAN [0 pt]	
☒	GRAVEL (2-64 mm) [9 pts]	10	☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]		☐	ARTIFICIAL [3 pts]	5

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 5 (A) 12 (B) 4

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

HHEI Metric Points

Substrate Max = 40 16

A + B

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

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

COMMENTS _____ **MAXIMUM POOL DEPTH (centimeters):** 8

Pool Depth Max = 30 15

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

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

COMMENTS widened @ clv xing **AVERAGE BANKFULL WIDTH (meters)** 4.6

Bankfull Width Max=30 30

This information must also be completed

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

RIPARIAN WIDTH (Per Bank) L	R	FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		
☐	☐	Wide >10m	☒	☐	Mature Forest, Wetland
☒	☒	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field
☐	☐	Narrow <5m	☒	☒	Residential, Park, New Field
☐	☐	None	☐	☐	Fenced Pasture

L	R	
☐	☐	Conservation Tillage
☐	☐	Urban or Industrial
☐	☐	Open Pasture, Row Crop
☐	☐	Mining or Construction

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☒ EWH Name: Rocky Fork Distance from Evaluated Stream 0.8mi

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Albany NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Franklin Township / City: Gahanna

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/25/22 Quantity: 0.8"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 10%

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

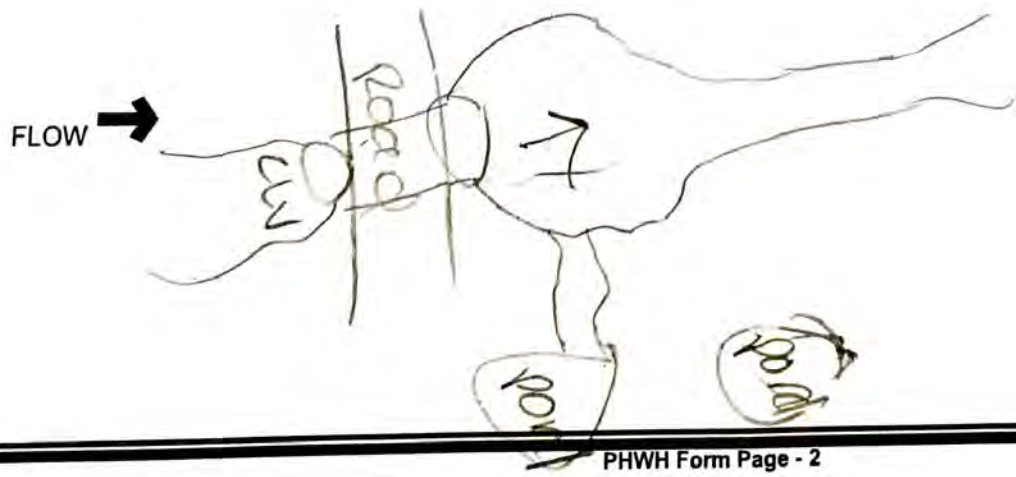
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



5005

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 41

SITE NAME/LOCATION NCHP

SITE NUMBER 5005 RIVER BASIN Scioto River DRAINAGE AREA (mi²) 40.1m²

LENGTH OF STREAM REACH (ft) 80' LAT 40.002401 LONG -87.835716 RIVER CODE _____ RIVER MILE _____

DATE 3/2/22 SCORER RLEK COMMENTS _____

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

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

Culvert at, Rd King

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

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

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0 (A) 9 (B) 2

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

HHEI Metric Points

Substrate Max = 40 11

A + B

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

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

COMMENTS _____ **MAXIMUM POOL DEPTH (centimeters):** 9

Pool Depth Max = 30 15

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

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

COMMENTS _____ **AVERAGE BANKFULL WIDTH (meters)** 1.2

Bankfull Width Max=30 15

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)	L	R
Wide >10m	☐	☐
Moderate 5-10m	☐	☐
Narrow <5m	☒	☒
None	☐	☐

FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R
Mature Forest, Wetland	☐	☐
Immature Forest, Shrub or Old Field	☒	☒
Residential, Park, New Field	☐	☐
Fenced Pasture	☐	☐
Conservation Tillage	☐	☐
Urban or Industrial	☒	☒
Open Pasture, Row Crop	☐	☐
Mining or Construction	☐	☐

COMMENTS _____

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

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

COMMENTS _____

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

- ☒ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☒ EWH Name: Rocky Fork Distance from Evaluated Stream 1.3

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Albany NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Franklin Township / City: Gahanna

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/25/22 Quantity: 0.8"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

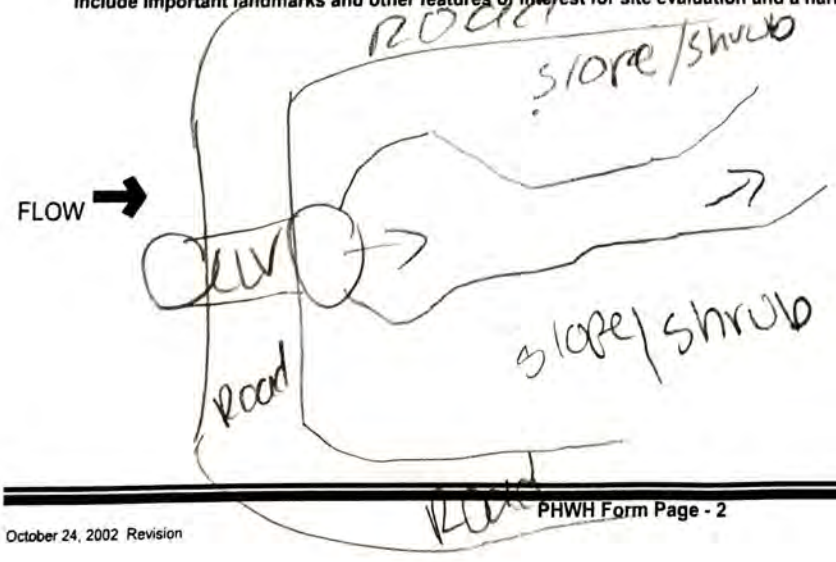
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



5003

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 47

SITE NAME/LOCATION NCHP

SITE NUMBER 5003 RIVER BASIN Scioto River DRAINAGE AREA (mi²) 0.04m.²

LENGTH OF STREAM REACH (ft) 105 LAT 40.005079 LONG -82.83462 RIVER CODE _____ RIVER MILE _____

DATE 3/2/22 SCORER REK COMMENTS _____

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☒ RECENT OR NO RECOVERY — Culverted, Road xing

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

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☒☐	SILT [3 pt]	40
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	10
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	10	☐☐	CLAY or HARDPAN [0 pt]	
☒☐	GRAVEL (2-64 mm) [9 pts]	30	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]	10	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 10 (A) 12

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 5

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 17

A + B

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

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

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 10

Pool Depth Max = 30: 15

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

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

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 0.6

Bankfull Width Max=30: 15

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

October 24, 2002 Revision

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☒ EWH Name: Rocky Fork Distance from Evaluated Stream 1.1 m.

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Albany, OH NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Franklin Township / City: Gahanna

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/25/22 Quantity: 0.8"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 15

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

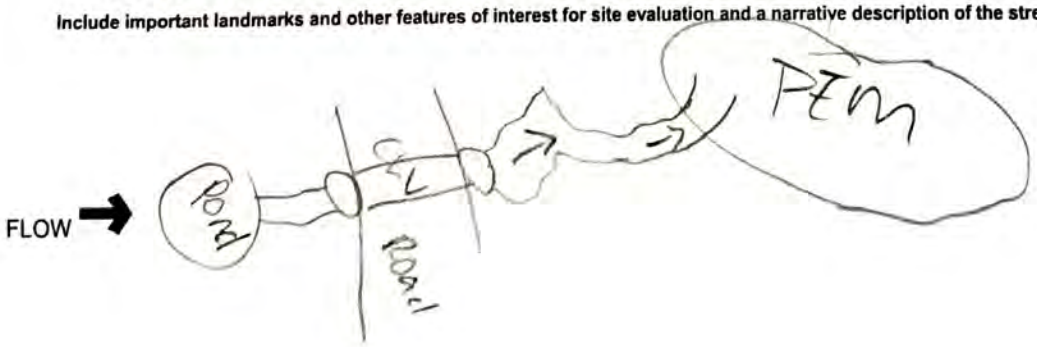
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



5006

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 44

SITE NAME/LOCATION NCHP

SITE NUMBER 5006 RIVER BASIN Scioto River DRAINAGE AREA (mi²) 0.11mi²

LENGTH OF STREAM REACH (ft) 200' LAT 40.007994 LONG. -82.853057 RIVER CODE _____ RIVER MILE _____

DATE 3/2/22 SCORER REK COMMENTS _____

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

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

culvert, road xing

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

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pt]	15
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pt]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]	5	☐	CLAY or HARDPAN [0 pt]	
☐	GRAVEL (2-64 mm) [9 pts]	10	☐	MUCK [0 pts]	
☒	SAND (<2 mm) [6 pts]	100	☐	ARTIFICIAL [3 pts]	10

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 5 (A) 9

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 5 TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40 14

A + B

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

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

3

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 30 15

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

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

1

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters)

Bankfull Width Max=30 15

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

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

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

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Big Walnut Creek Distance from Evaluated Stream 0.10

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Albany NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Franklin Township / City: Gahanna

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/25/22 Quantity: 0.8"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 70%

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

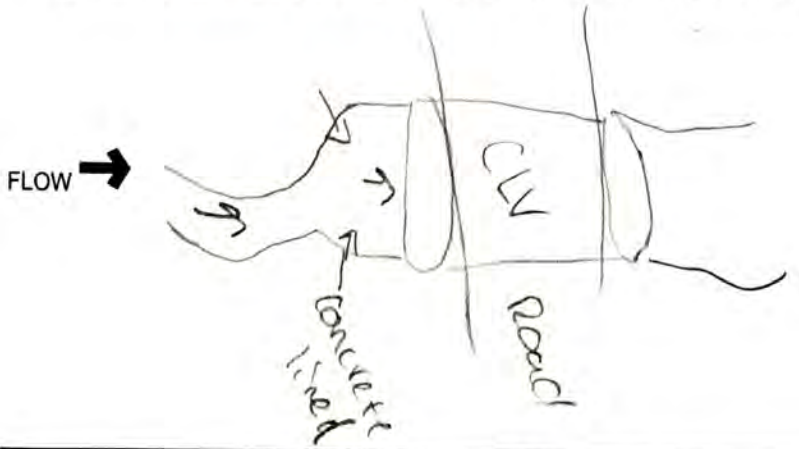
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



5007

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 66

SITE NAME/LOCATION ACHP

SITE NUMBER 5007 RIVER BASIN Scioto DRAINAGE AREA (mi²) 0.45 mi²

LENGTH OF STREAM REACH (ft) 150' LAT. 40.004493 LONG. -82.867832 RIVER CODE _____ RIVER MILE _____

DATE 3/2/22 SCORER ZEK COMMENTS _____

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

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

Channelized, culvert, recent dist.

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

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]		☐ ☐	SILT [3 pt]	20
☐ ☐	BOULDER (>256 mm) [16 pts]		☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐ ☐	BEDROCK [16 pt]		☐ ☐	FINE DETRITUS [3 pts]	
☐ ☒	COBBLE (65-256 mm) [12 pts]	20	☐ ☐	CLAY or HARDPAN [0 pt]	
☒ ☐	GRAVEL (2-64 mm) [9 pts]	30	☐ ☐	MUCK [0 pts]	
☐ ☐	SAND (<2 mm) [6 pts]	20	☐ ☐	ARTIFICIAL [3 pts]	10

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 20 (A) 21

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 5 TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 26

A + B

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

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

10

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 30: 15

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

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

3

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters)

Bankfull Width Max=30: 25

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

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

October 24, 2002 Revision

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

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

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Big Walnut Creek Distance from Evaluated Stream 0.58 mi

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Albany NRCS Soil Map Page: _____ NRCS Soil Map Stream Order ____

County: Franklin Township / City: Gahanna

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/25/22 Quantity: 0.8"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 75-90

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

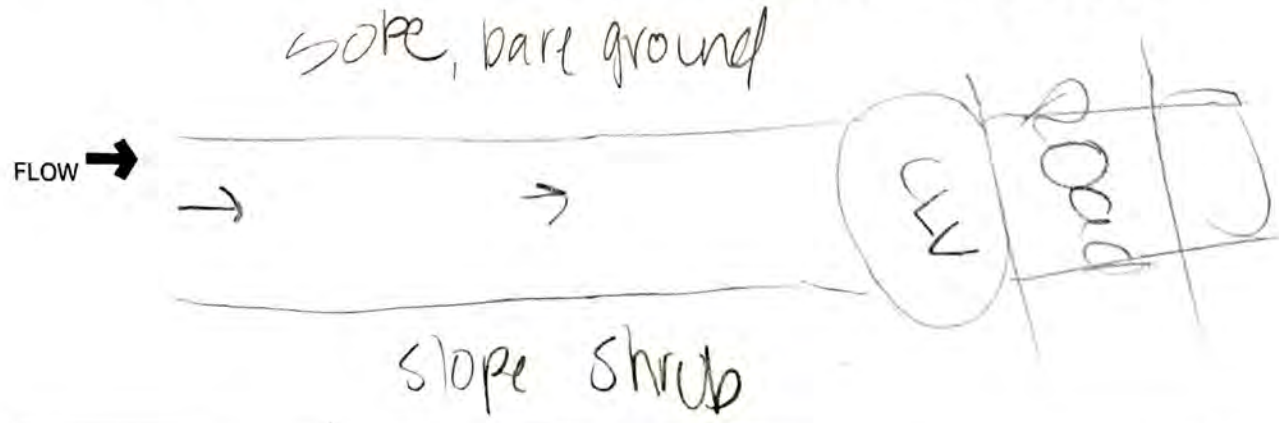
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



5008

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 106

SITE NAME/LOCATION NCHP

SITE NUMBER 5008 RIVER BASIN Scioto DRAINAGE AREA (mi²) <0.1 mi²

LENGTH OF STREAM REACH (ft) 200' LAT. 40.000457 LONG. -82.80390 RIVER CODE _____ RIVER MILE _____

DATE 3/2/22 SCORER REK COMMENTS _____

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

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☒ RECENT OR NO RECOVERY — Channelized

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

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	20
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☒	COBBLE (65-256 mm) [12 pts]	20	☐☐	CLAY or HARDPAN [0 pt]	
☒☐	GRAVEL (2-64 mm) [9 pts]	30	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]	20	☐☐	ARTIFICIAL [3 pts]	10

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 20 (A) 2 (B) 5

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

HHEI Metric Points

Substrate Max = 40 26

A + B

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

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

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 10

Pool Depth Max = 30 15

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

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

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters) 3

Bankfull Width Max=30 25

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

- ☒ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

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

October 24, 2002 Revision

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

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

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: Big Walnut Creek Distance from Evaluated Stream 0.67mi

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: New Albany NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Franklin Township / City: Gahanna

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 2/25/12 Quantity: 0.8"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 85%

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

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

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

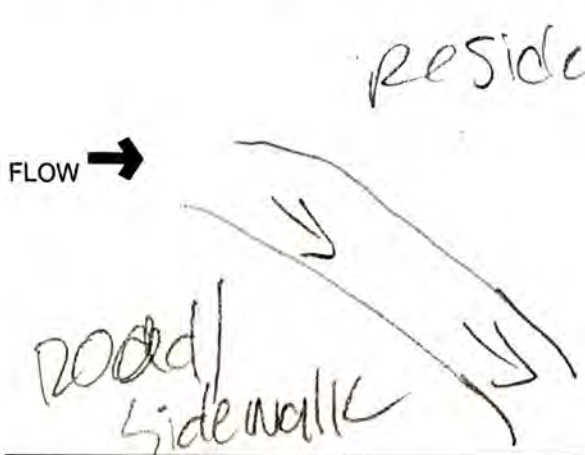
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



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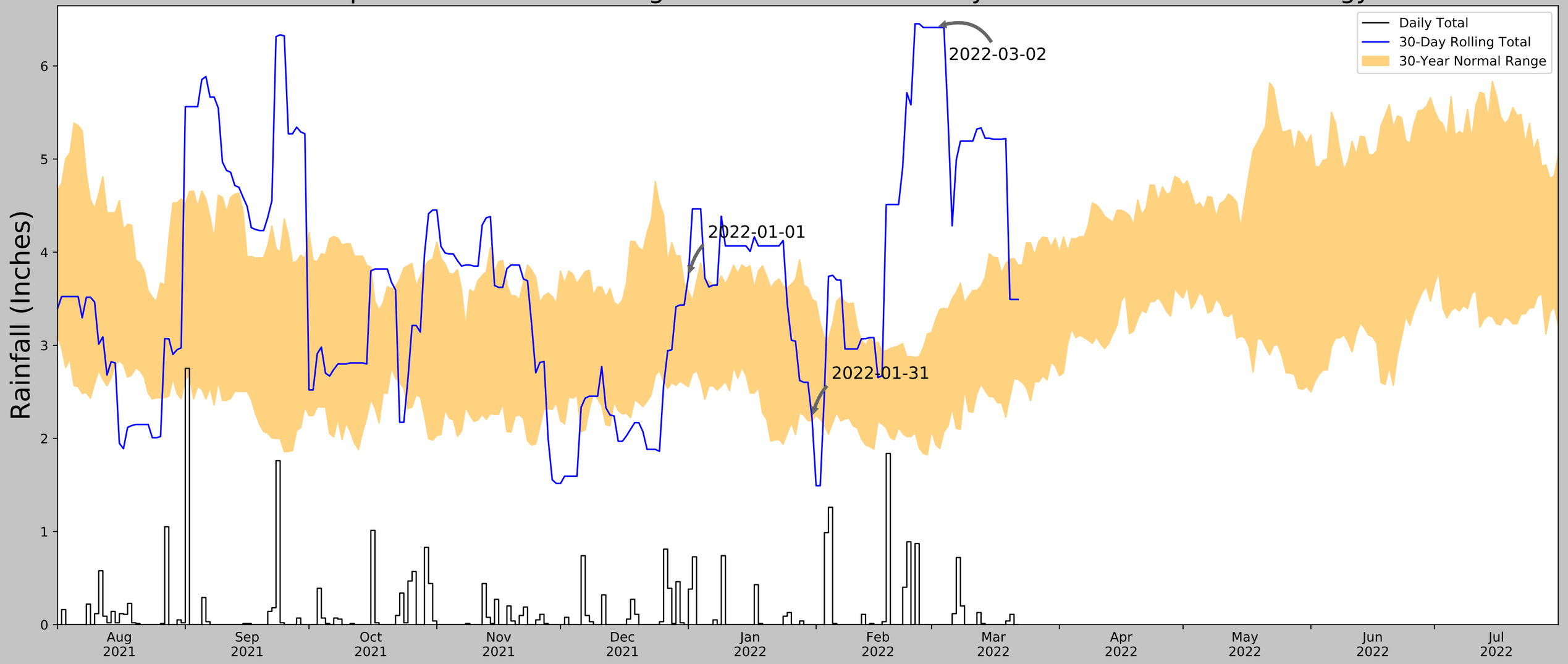
Appendix C | USACE Antecedent Precipitation Tool

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.011997, -82.572119
Observation Date	2022-03-02
Elevation (ft)	1094.88
Drought Index (PDSI)	Severe wetness (2022-02)
WebWIMP H_2O Balance	Wet Season

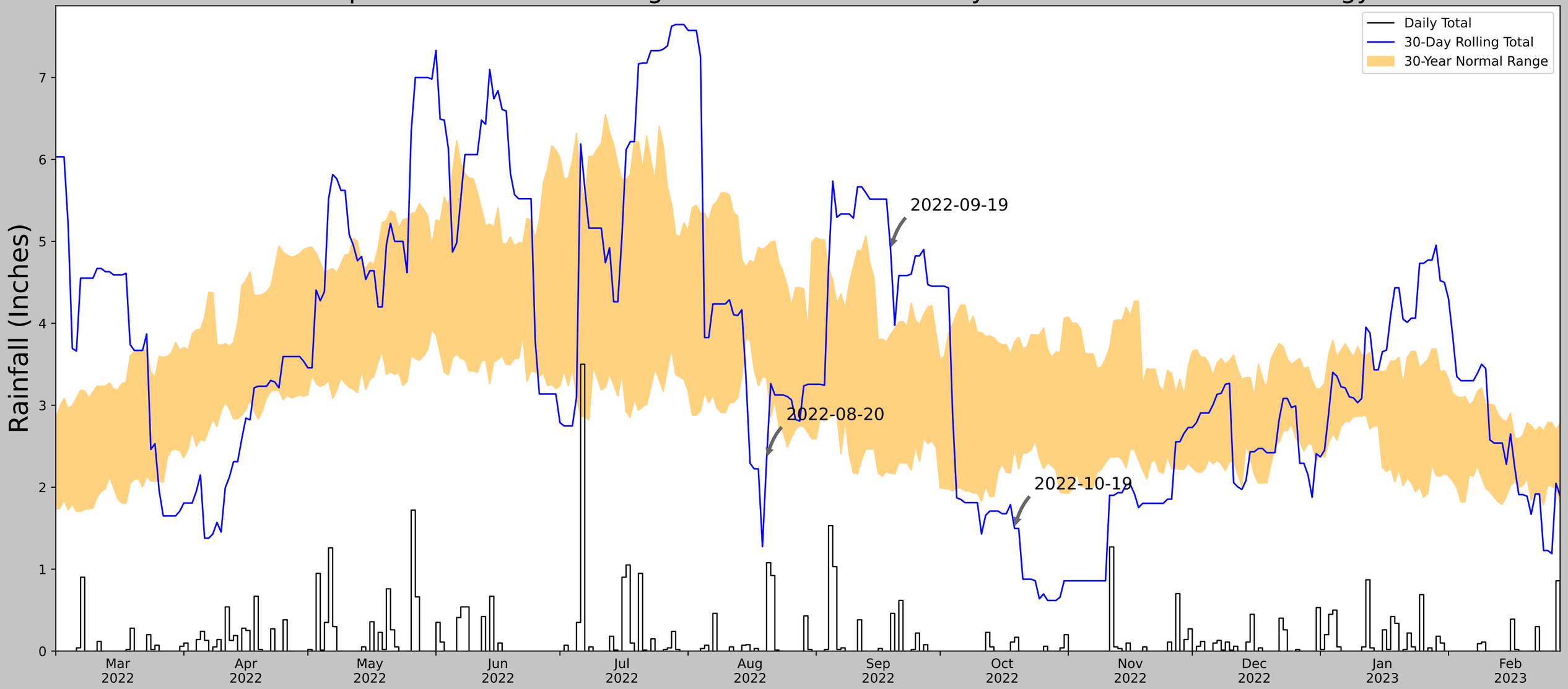
30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-03-02	1.933071	3.275197	6.413386	Wet	3	3	9
2022-01-31	2.189764	3.494882	2.220473	Normal	2	2	4
2022-01-01	2.555906	3.585433	3.736221	Wet	3	1	3
Result							Wetter than Normal - 16

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days (Normal)	Days (Antecedent)
BUCKEYE LAKE 1 N	39.9522, -82.4819	888.123	6.315	206.757	4.148	11082	90
KIRKERSVILLE 3.3 N	39.998, -82.5986	1075.131	1.703	19.749	0.8	8	0
PATASKALA 3.2 E	39.998, -82.6136	1074.147	2.399	20.733	1.129	7	0
GRANVILLE 2.6 WSW	40.0527, -82.5445	1064.961	3.169	29.919	1.521	10	0
PATASKALA 2.1 ENE	40.013, -82.6381	1171.916	3.492	77.036	1.841	1	0
PATASKALA 2.0 NE	40.024, -82.6511	1216.864	4.261	121.984	2.437	36	0
ALEXANDRIA 2.1 NNW	40.1182, -82.6265	1080.053	7.881	14.827	3.663	32	0
NEWARK HEATH AP	40.0228, -82.4625	883.858	5.848	211.022	3.866	3	0
UTICA 4 WSW	40.2061, -82.52	1134.843	13.691	39.963	6.708	1	0
NEWARK WTR WKS	40.0875, -82.4128	834.974	9.911	259.906	7.036	173	0

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.021777, -82.950994
Observation Date	2022-10-19
Elevation (ft)	834.369
Drought Index (PDSI)	Moderate wetness
WebWIMP H_2O Balance	Wet Season

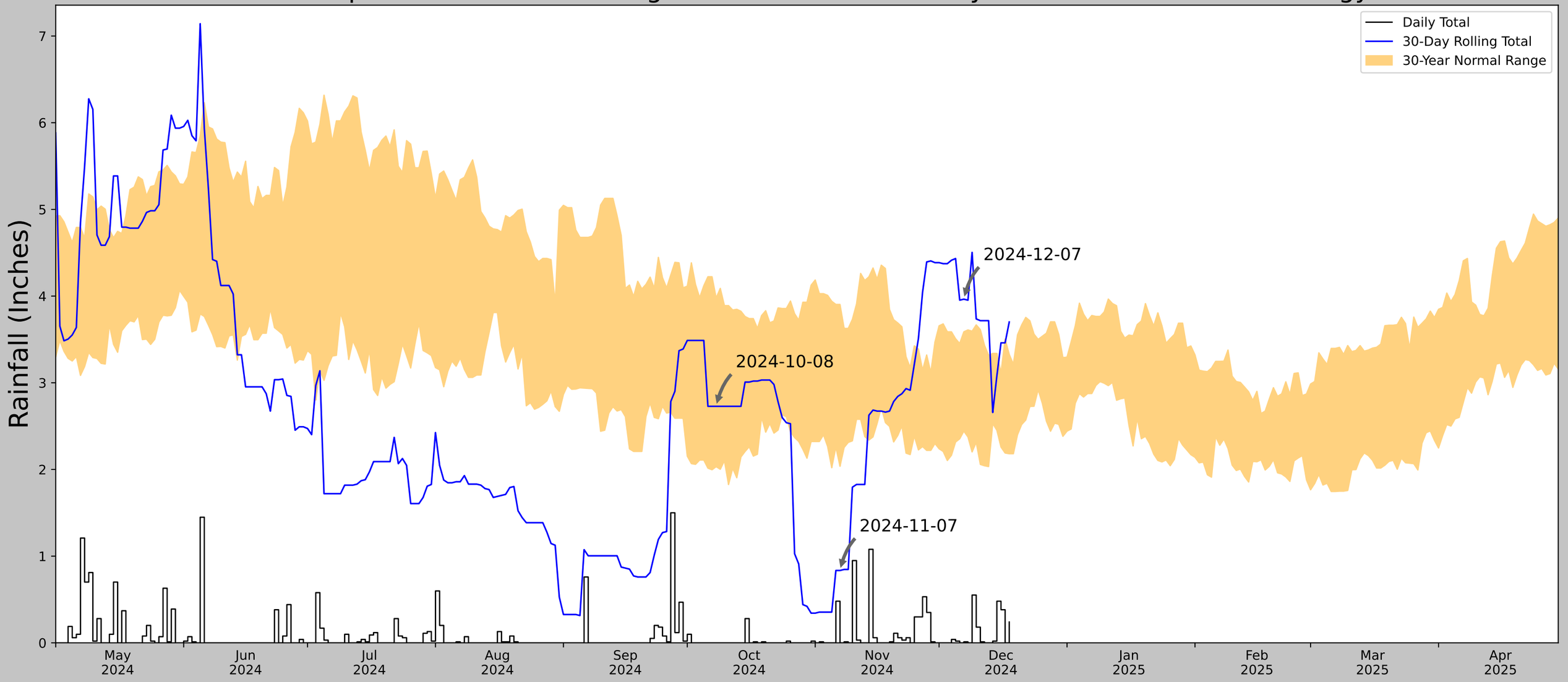
30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-10-19	2.468504	3.775197	1.496063	Dry	1	3	3
2022-09-19	2.169685	3.864567	4.897638	Wet	3	2	6
2022-08-20	3.333858	4.935827	2.34252	Dry	1	1	1
Result							Normal Conditions - 10

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
COLUMBUS-HAP CREMEAN WP	40.0603, -82.8942	831.037	4.014	3.332	1.82	10742	90
COLUMBUS 8.2 NE	40.0639, -82.8673	955.053	1.444	124.016	0.829	7	0
COLUMBUS 3.5 NE	40.0287, -82.9477	833.005	3.574	1.968	1.615	2	0
WESTERVILLE 0.2 WNW	40.1226, -82.9213	886.155	4.537	55.118	2.292	43	0
JOHN GLENN INTL AP	39.9906, -82.8769	810.039	4.902	20.998	2.309	559	0

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	40.020811, -82.922588
Observation Date	2024-12-07
Elevation (ft)	828.822
Drought Index (PDSI)	Severe drought (2024-11)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-12-07	2.442126	3.587795	3.964567	Wet	3	3	9
2024-11-07	2.036221	3.903937	0.834646	Dry	1	2	2
2024-10-08	2.032284	3.978347	2.728347	Normal	2	1	2
Result							Normal Conditions - 13

Figure and tables made by the
Antecedent Precipitation Tool
Version 1.0

Written by Jason Deters
U.S. Army Corps of Engineers

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
COLUMBUS-HAP CREMEAN WP	40.0603, -82.8942	831.037	3.114	2.215	1.408	10771	78
COLUMBUS 8.2 NE	40.0639, -82.8673	955.053	1.444	124.016	0.829	8	11
GAHANNA 1.2 NNE	40.0408, -82.868	874.016	1.933	42.979	0.953	0	1
COLUMBUS 3.5 NE	40.0287, -82.9477	833.005	3.574	1.968	1.615	2	0
WESTERVILLE 3.0 ESE	40.1107, -82.8622	875.0	3.871	43.963	1.912	1	0
WESTERVILLE 0.2 WNW	40.1226, -82.9213	886.155	4.537	55.118	2.292	43	0
JOHN GLENN INTL AP	39.9906, -82.8769	810.039	4.902	20.998	2.309	528	0

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Appendix D | Photographs

Site Photographs

December 17, 2024
CED Project No. 21004202A

Photo #1 –Looking east at Wetland 8; near wetland flag W8.4

Site Photographs

December 17, 2024
CED Project No. 21004202A

Photo #2: Looking at west at upland woodlands near wetland flag W8.4.

Site Photographs

December 17, 2024
CED Project No. 21004202A

Photo #3: Looking north at Wetland 9; near wetland flag W9.5

Site Photographs

December 17, 2024
CED Project No. 21004202A

Photo #4: Looking at west at upland maintained lawn/early successional vegetation near wetland flag W9.5.

Site Photographs

December 17, 2024
CED Project No. 21004202A

Photo #5: Looking north at typical conditions at Stelzer inlet.

Site Photographs

December 17, 2024
CED Project No. 21004202A

Photo #6: Looking north at typical conditions at Stygler inlet.

Colliers Engineering & Design

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