



# Natural Resources Report

Christ Community Chapel

Hudson, Ohio

Date Prepared: March 14, 2025

## On Behalf Of:

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## **1.0 INTRODUCTION**

### **1.1 PROJECT LOCATION AND DESCRIPTION**

CESO, Inc. (CESO) was retained by Christ Community Chapel (CCC), to perform a regulated waters delineation and prepare a report for a proposed development site located in Hudson, Summit County, Ohio. The Area of Investigation (AOI) is approximately 28.6 acres in size and consists mainly of developed land including buildings and parking lots, open lawn, and forested areas.

### **1.2 PURPOSE AND SCOPE**

The purpose of this investigation is to identify wetlands and streams to assist in the determination of developable areas for the project. Wetlands and streams are defined by the United States Army Corps of Engineers (USACE) and the Ohio Environmental Protection Agency (OEPA) as those areas that are inundated or saturated by 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. Wetlands generally include swamps, marshes, bogs, and similar areas. In addition, within the Ohio Water Quality Standards {OAC 3745-1-02 (B) (87)}, a stream is defined as “a water body having a channel with well-defined bed and banks, either natural or artificial, that confine and conduct continuous or periodical flowing water.”

## **2.0 METHODOLOGY**

### **2.1 PRELIMINARY DATA REVIEW**

Prior to the field investigation, published resource information pertaining to the AOI was gathered and reviewed. The information sources used to prepare this report include but were not limited to:

- U.S. Geological Survey (USGS) 7.5-minute quadrangle maps (Hudson Quadrangle);
- Soil Survey of Summit County, Ohio (USDA 2023);
- USFWS National Wetlands Inventory website (NWI);
- USGS National Hydrography Dataset (NHD);
- State of Ohio Water Quality Standards;
- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (2009).

### **2.2 PHYSICAL RESOURCE INVESTIGATIONS**

A field investigation was completed to identify and delineate potentially jurisdictional wetland boundaries in accordance with the 1987 Manual, the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Version 2.0 (Regional Supplement), and subsequent guidance. The 1987 Manual is the current Federal delineation manual used in the Clean Water Act Section 404 regulatory programs for the identification and delineation of wetlands. The approach requires positive evidence of hydrophytic vegetation, hydric soils, and wetland hydrology for the determination that an area is a wetland (Environmental Laboratory 1987). The wetland habitats identified were classified in accordance with the USFWS's “Classification of Wetlands and Deepwater Habitats of the United States” (Cowardin et al. 1979).

Streams were identified as a channel with well-defined bed and banks, either natural or artificial, that confine and conduct continuous or periodical flowing water. Streams were classified as perennial, intermittent, or ephemeral based on their permanence of flow and influence from groundwater.

Wetland boundaries and the centerline of streams were identified by consecutively numbered flags to facilitate surveying. Location data was collected using a handheld Trimble TDC150 GPS Unit. Vegetation, soil, and hydrology information for wetland and non-wetland areas were recorded on wetland field data sheets and are presented in Appendix A. Color photographs of each aquatic feature are included as Appendix B.

### **3.0 PRELIMINARY DATA REVIEW**

#### **3.1 TOPOGRAPHY**

According to the USGS 7.5-Minute Topographic Hudson Quadrangle Map for the site in Summit County, OH, the elevation of the site is approximately 1,020-1,030 feet above mean sea level.

#### **3.2 SOILS**

Hydric soils are typical indicators of wetland habitats. A soil is considered hydric if it is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (USDA-SCS 1991). Extended periods of inundation/saturation cause a chemical change in the soil, which is reflected in the soil color and physical characteristics of the soil. These properties can typically be observed during field investigations. In most cases, the soil colors are the diagnostic feature of a hydric soil. Hydric mineral soil will either be gleyed or have a low chroma matrix and/or bright mottles. A typical gleyed soil will have blue, green, or gray coloration directly below the A-horizon. A mottled soil with a low chroma matrix is usually indicative of a fluctuating water table (Wetland Training Institute Inc. 1989). See Appendix C for a comprehensive Custom soil report.

According to the Custom Soil Resource Report for Summit County, OH, soils within the AOI are summarized in the table below.

NRCS Soil Map Unit Name	Map Unit Symbol	Hydric Status	Hydric Rating
Canadice silty clay loam	Ca	Predominately hydric	95
Caneadea silt loam, 2 to 6 percent slopes	CcB	Predominately non-hydric	3
Chili gravelly loam, 6 to 12 percent slopes, moderately eroded	CoC2	Non-hydric	0
Ellsworth–Urban land complex, 6 to 18 percent slopes	EuC	Non-hydric	0
Geeburg silt loam, 6 to 12 percent slopes moderately eroded	GbC2	Non-hydric	0
Geeburg silt loam, 12 to 18 percent slopes, moderately eroded	GbD2	Non-hydric	0



Mahoning – Urban land complex, 0 to 2 percent slopes	Mn	Predominately non-hydric	5
Sebring silt loam, 0 to 2 percent slopes	Sb	Predominately hydric	92
Wheeling silt loam, 2 to 6 percent slopes	WrB	Non-hydric	0

### 3.3 WATER RESOURCES

#### 3.3.1 National Wetland Inventory

CESO reviewed the USFWS National Wetlands Inventory (NWI) database, which depicted one (1) palustrine emergent wetland (PEM) within the AOI. Due to the scale of NWI maps and inaccuracies inherent in their preparation, most small wetlands and streams are not mapped or fully delineated. The NWI layer is displayed on the Existing Environmental Conditions figure.

#### 3.3.2 National Hydrography Dataset

CESO reviewed the USGS National Hydrography Dataset (NHD), which depicted one (1) swamp/marsh and one (1) lake/pond within the AOI. Per a review of the information sources used to prepare this report, the project area is within the Mud Brook HUC-12 Subwatershed (041100020401) of the Cuyahoga HUC-8 Watershed (04110002). Due to the scale of NHD maps and inaccuracies inherent in their preparation, most small streams are not mapped or fully delineated. The NHD layer is displayed on the Existing Environmental Conditions figure.

#### 3.3.3 State of Ohio Water Quality Standards

No streams were identified within the AOI. The AOI is eligible for coverage under OEPA's 401 Water Quality Certification for the nationwide permits, provided all other general and regional special terms and conditions are met.

## 4.0 FIELD OBSERVATIONS

Three (3) wetlands, two (2) seeps, and no streams were identified within the AOI. Wetland data forms are provided in Appendix A of this report. Color photographs of each aquatic feature are included in Appendix B. The features are depicted on Figure 3 Delineated Aquatic Features. Two (2) functioning constructed stormwater retention basins were also located within the AOI.

#### Wetlands

One palustrine emergent (PEM) wetland and two (2) PEM/palustrine scrub-shrub (PSS) wetland complexes were identified within this AOI. These features are summarized in the table below.

Wetland ID	Cowardin Classification	Acreage within AOI (ac)
W-1	PEM/PSS	0.10
W-2	PEM	0.04
W-3	PEM/PSS	0.15

## **5.0 CONCLUSIONS**

CESO was retained by Christ Community Chapel (CCC) to perform a regulated waters delineation and prepare a report for a proposed development site located in Hudson, Summit County, Ohio. The AOI is approximately 28.6 acres in size and consists mainly of developed land including buildings and parking lots, open lawn, and forested areas. One (1) PEM and two (2) PEM/PSS wetlands, two (2) seeps, and no streams were identified within the AOI at the time of the site visit. Two (2) functioning constructed stormwater retention basins were also located within the AOI.

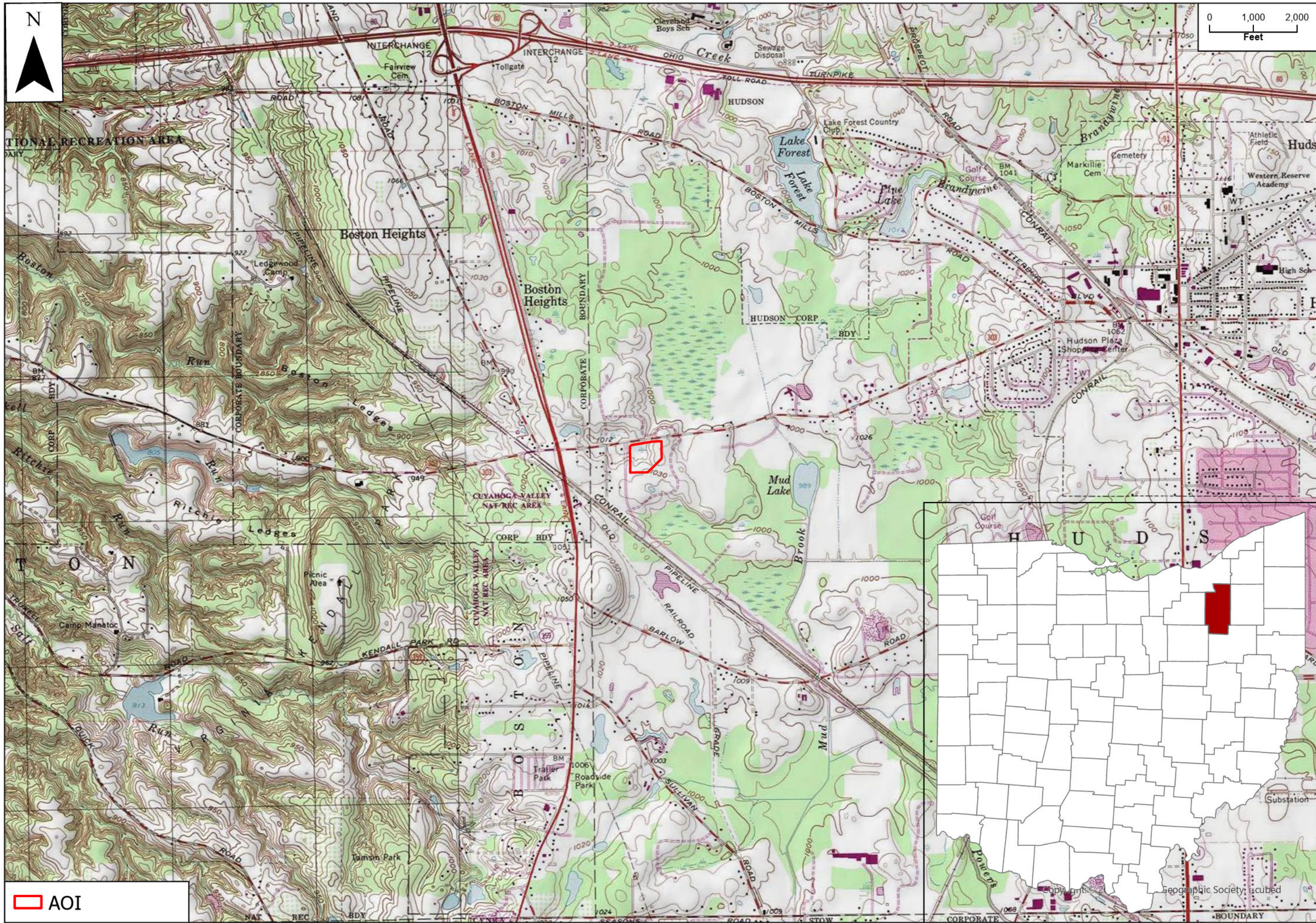
The results described in this report are the professional opinion of CESO based off of field observations at the time of the site visit on February 27, 2025. The USACE is the only agency with regulatory authority over the jurisdictional determination process.

## **6.0 REFERENCES**

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- USDA, NRCS. 2018. Field Indicators of Hydric Soils in the United States, Version 6.0. G.W. Hurt and L.M. Vasilas (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
- U.S. Fish and Wildlife Service. 2018. National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. <http://www.fws.gov/wetlands/>

**FIGURE 1 – TOPOGRAPHICAL LOCATION MAP**





Christ Community Chapel - Hudson, OH  
Topographical Location (Hudson Quad)  
Hudson, Summit County, Ohio

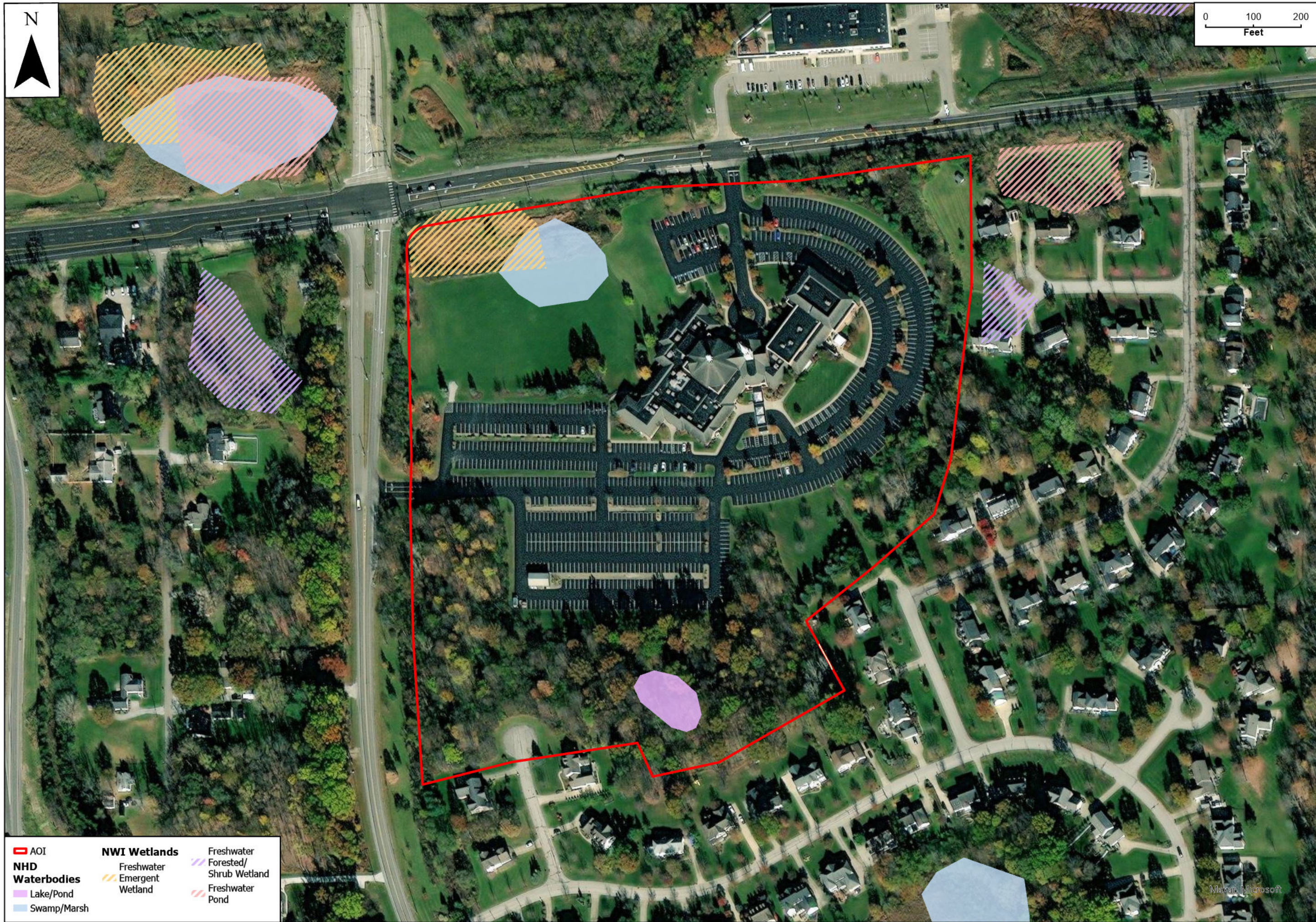


Date: 3/13/2025  
By: K. Hamlin



**FIGURE 2 – EXISTING ENVIRONMENTAL CONDITIONS MAP**





# Christ Community Chapel - Hudson, OH

## Existing Environmental Conditions

### Hudson, Summit County, Ohio

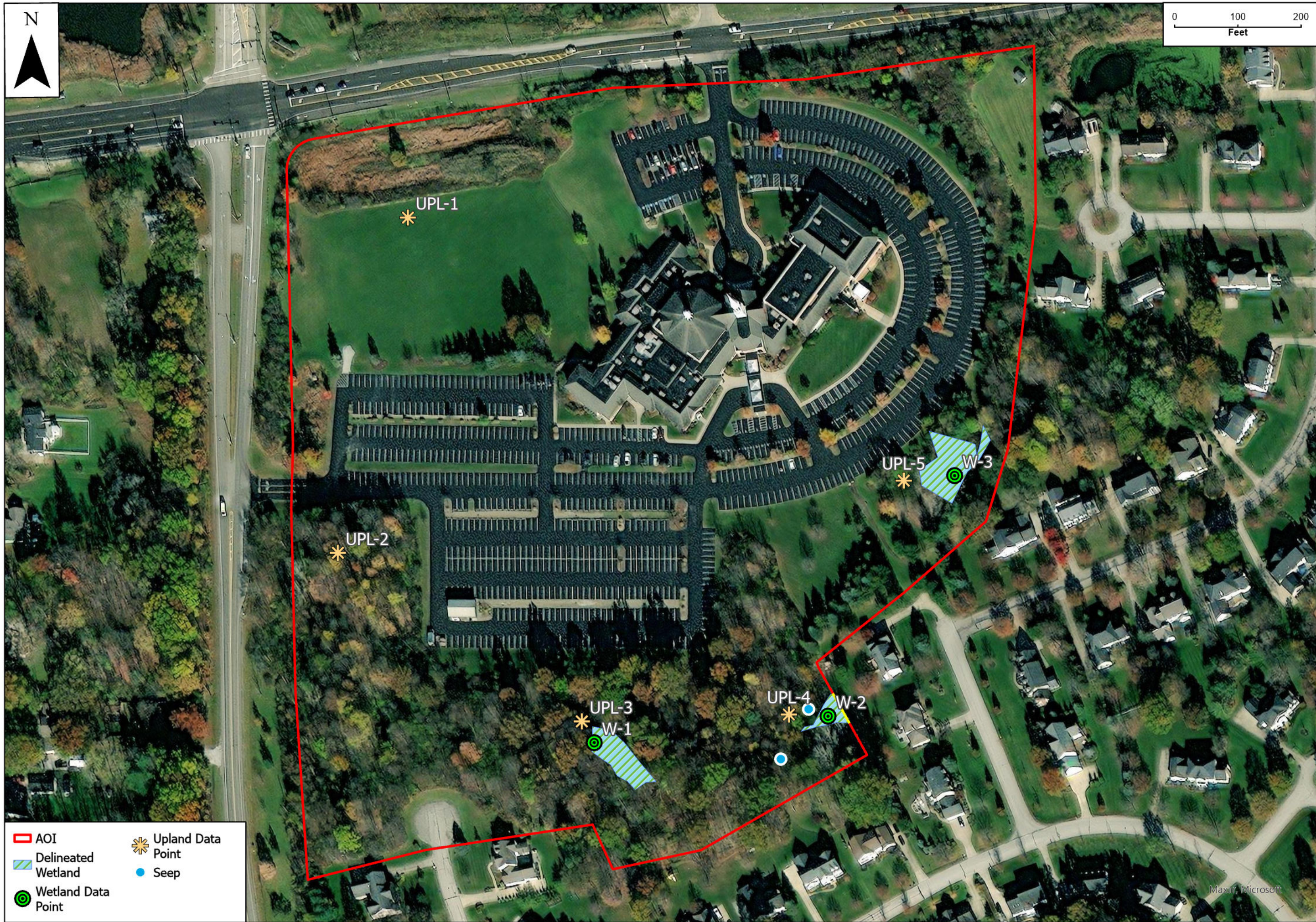


Date: 3/13/2025  
By: K. Hamlin



**FIGURE 3 – DELINEATED AQUATIC FEATURES**





# Christ Community Chapel - Hudson, OH

## Delineated Aquatic Features

### Hudson, Summit County, Ohio



Date: 3/13/2025  
By: K. Hamlin



**APPENDIX A – WETLAND DETERMINATION DATA FORMS**



**VEGETATION** – Use scientific names of plants.

 Sampling Point: W-1

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Alnus incana</i></u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>10</u>	<u>=Total Cover</u>		<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>12</u></td> <td>x 1 = <u>12</u></td> </tr> <tr> <td>FACW species <u>63</u></td> <td>x 2 = <u>126</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>183</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.03</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>12</u>	x 1 = <u>12</u>	FACW species <u>63</u>	x 2 = <u>126</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>90</u> (A)	<u>183</u> (B)	Prevalence Index = B/A = <u>2.03</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>12</u>	x 1 = <u>12</u>																			
FACW species <u>63</u>	x 2 = <u>126</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>90</u> (A)	<u>183</u> (B)																			
Prevalence Index = B/A = <u>2.03</u>																				
Sapling/Shrub Stratum (Plot size: <u>15'</u> )																				
1. <u><i>Ulmus rubra</i></u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u><i>Ulmus americana</i></u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u><i>Salix discolor</i></u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>40</u>	<u>=Total Cover</u>																		
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u><i>Onoclea sensibilis</i></u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b>  <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u><i>Boehmeria cylindrica</i></u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u><i>Cornus sericea</i></u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u><i>Dryopteris carthusiana</i></u>	<u>8</u>	<u>Yes</u>	<u>FACW</u>																	
5. <u><i>Geum canadense</i></u>	<u>2</u>	<u>No</u>	<u>OBL</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u>40</u>	<u>=Total Cover</u>																		
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. _____	_____	_____	_____	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____	_____	_____	_____																	
	<u>=Total Cover</u>																			
Remarks: (Include photo numbers here or on a separate sheet.)																				

## SOIL

Sampling Point: W-1

[illegible]



**VEGETATION** – Use scientific names of plants.

 Sampling Point: W-2

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>100</u></td> <td>x 2 = <u>200</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>200</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>100</u>	x 2 = <u>200</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>200</u> (B)	Prevalence Index = B/A = <u>2.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>100</u>	x 2 = <u>200</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>200</u> (B)																			
Prevalence Index = B/A = <u>2.00</u>																				
=Total Cover																				
=Total Cover				<b>Hydrophytic Vegetation Indicators:</b>  <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
100 =Total Cover				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
=Total Cover				<b>Hydrophytic Vegetation</b> Present?      Yes <u>X</u> No <u>  </u>																
Remarks: (Include photo numbers here or on a separate sheet.)																				

## SOIL

Sampling Point: W-2

[illegible]





**VEGETATION** – Use scientific names of plants.

 Sampling Point: W-3

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus deltoides</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>4</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>10</u>	<u>=Total Cover</u>		<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>35</u></td> <td>x 3 = <u>105</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>290</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.23</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>35</u>	x 3 = <u>105</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>290</u> (B)	Prevalence Index = B/A = <u>2.23</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</u>																			
FACW species <u>90</u>	x 2 = <u>180</u>																			
FAC species <u>35</u>	x 3 = <u>105</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>130</u> (A)	<u>290</u> (B)																			
Prevalence Index = B/A = <u>2.23</u>																				
Sapling/Shrub Stratum (Plot size: <u>15'</u> )																				
1. <u>Cornus amomum</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Cornus sericea</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Rosa palustris</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>40</u>	<u>=Total Cover</u>																		
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u>Phalaris arundinacea</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>	<b>Hydrophytic Vegetation Indicators:</b>  <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Microstegium vimineum</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
3. <u>Apocynum cannabinum</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Onoclea sensibilis</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Geum canadense</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u>80</u>	<u>=Total Cover</u>																		
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____	<u>=Total Cover</u>																		
<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																				
				<b>Hydrophytic Vegetation Present?</b> Yes <u>X</u> No _____																
Remarks: (Include photo numbers here or on a separate sheet.)																				

## SOIL

Sampling Point: W-3

[illegible]



**VEGETATION** – Use scientific names of plants.

 Sampling Point: UPL-1

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
			=Total Cover	<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>106</u></td> <td>x 4 = <u>424</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>106</u> (A)</td> <td><u>424</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>106</u>	x 4 = <u>424</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>106</u> (A)	<u>424</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>106</u>	x 4 = <u>424</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>106</u> (A)	<u>424</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
			=Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15'</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
			=Total Cover	<b>Hydrophytic Vegetation Indicators:</b>  <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
			=Total Cover																	
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u>Poa pratensis</u>	<u>98</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Glechoma hederacea</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Trifolium repens</u>	<u>3</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
			<u>106</u> =Total Cover																	
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
			=Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.)          				<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
				<b>Hydrophytic Vegetation</b> Present?      Yes <u>  </u> No <u>  X  </u>																

## SOIL

Sampling Point: UPL-1

[illegible]



**VEGETATION** – Use scientific names of plants.

 Sampling Point: UPL-2

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Fraxinus americana</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>10</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>30.0%</u> (A/B)																
2. <u>Quercus imbricaria</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Gleditsia triacanthos</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Quercus rubra</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
5. <u>Acer saccharinum</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>90</u>	=Total Cover	<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>109</u></td> <td>x 4 = <u>436</u></td> </tr> <tr> <td>UPL species <u>3</u></td> <td>x 5 = <u>15</u></td> </tr> <tr> <td>Column Totals: <u>147</u> (A)</td> <td><u>551</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.75</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>109</u>	x 4 = <u>436</u>	UPL species <u>3</u>	x 5 = <u>15</u>	Column Totals: <u>147</u> (A)	<u>551</u> (B)	Prevalence Index = B/A = <u>3.75</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>109</u>	x 4 = <u>436</u>																			
UPL species <u>3</u>	x 5 = <u>15</u>																			
Column Totals: <u>147</u> (A)	<u>551</u> (B)																			
Prevalence Index = B/A = <u>3.75</u>																				
<b>Sapling/Shrub Stratum (Plot size: <u>15'</u>)</b>																				
1. <u>Fraxinus americana</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Ligustrum vulgare</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>40</u>	=Total Cover	<b>Hydrophytic Vegetation Indicators:</b>  <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>      </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
<b>Herb Stratum (Plot size: <u>5'</u>)</b>																				
1. <u>Toxicodendron radicans</u>	<u>7</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Potentilla canadensis</u>	<u>3</u>	<u>Yes</u>	<u>UPL</u>																	
3. <u>Aster sp.</u>	<u>3</u>	<u>Yes</u>	_____																	
4. <u>Geum canadense</u>	<u>3</u>	<u>Yes</u>	<u>FAC</u>																	
5. <u>Trifolium repens</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Glechoma hederacea</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>20</u>	=Total Cover	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
<b>Woody Vine Stratum (Plot size: <u>30'</u>)</b>																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover	<b>Hydrophytic Vegetation Present?</b> Yes <u>      </u> No <u>  X  </u>																
Remarks: (Include photo numbers here or on a separate sheet.)																				



## SOIL

Sampling Point: UPL-2

[illegible]



**VEGETATION** – Use scientific names of plants.

 Sampling Point: UPL-3

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Prunus serotina</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>50</u>	=Total Cover	<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>3</u></td> <td>x 3 = <u>9</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>103</u> (A)</td> <td><u>409</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.97</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>3</u>	x 3 = <u>9</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>103</u> (A)	<u>409</u> (B)	Prevalence Index = B/A = <u>3.97</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>3</u>	x 3 = <u>9</u>																			
FACU species <u>100</u>	x 4 = <u>400</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>103</u> (A)	<u>409</u> (B)																			
Prevalence Index = B/A = <u>3.97</u>																				
Sapling/Shrub Stratum (Plot size: <u>15'</u> )																				
1. <u>Ligustrum vulgare</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Rosa multiflora</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>50</u>	=Total Cover																	
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u>Geum canadense</u>	<u>3</u>	<u>No</u>	<u>FAC</u>	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>3</u>	=Total Cover																	
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	
<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																				
				<b>Hydrophytic Vegetation Present?</b> Yes <u>  </u> No <u>  X  </u>																
Remarks: (Include photo numbers here or on a separate sheet.)																				

## SOIL

Sampling Point: UPL-3

[illegible]



**VEGETATION** – Use scientific names of plants.

 Sampling Point: UPL-4

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Prunus serotina</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)  Total Number of Dominant Species Across All Strata: <u>8</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>37.5%</u> (A/B)																
2. <u>Gleditsia triacanthos</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Quercus palustris</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>90</u>	=Total Cover	<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>46</u></td> <td>x 3 = <u>138</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>4</u></td> <td>x 5 = <u>20</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>378</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.44</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>46</u>	x 3 = <u>138</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>4</u>	x 5 = <u>20</u>	Column Totals: <u>110</u> (A)	<u>378</u> (B)	Prevalence Index = B/A = <u>3.44</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>10</u>	x 2 = <u>20</u>																			
FAC species <u>46</u>	x 3 = <u>138</u>																			
FACU species <u>50</u>	x 4 = <u>200</u>																			
UPL species <u>4</u>	x 5 = <u>20</u>																			
Column Totals: <u>110</u> (A)	<u>378</u> (B)																			
Prevalence Index = B/A = <u>3.44</u>																				
Sapling/Shrub Stratum (Plot size: <u>15'</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		_____	=Total Cover																	
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u>Fragaria vesca</u>	<u>4</u>	<u>Yes</u>	<u>UPL</u>	<b>Hydrophytic Vegetation Indicators:</b> <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <u>_____</u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Ligustrum vulgare</u>	<u>4</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Geum canadense</u>	<u>3</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Oxalis stricta</u>	<u>3</u>	<u>Yes</u>	<u>FACU</u>																	
5. <u>Microstegium vimineum</u>	<u>3</u>	<u>Yes</u>	<u>FAC</u>																	
6. <u>Solidago canadensis</u>	<u>3</u>	<u>Yes</u>	<u>FACU</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>20</u>	=Total Cover																	
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. _____	_____	_____	_____	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover	<b>Hydrophytic Vegetation Present?</b> Yes <u>_____</u> No <u>X</u>																

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

## SOIL

Sampling Point: UPL-4

[illegible]

<b>U.S. Army Corps of Engineers</b> <b>WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region</b> See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	<b>OMB Control #: 0710-0024, Exp: 9/30/2027</b> <b>Requirement Control Symbol EXEMPT:</b> <b>(Authority: AR 335-15, paragraph 5-2a)</b>
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Project/Site: Christ Community Chapel City/County: Summit County Sampling Date: 2/27/2025

Applicant/Owner: CESO, Inc. State: OH Sampling Point: UPL-5

Investigator(s): Kerry Hamlin, Chris Winkler Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): None Slope %: 0

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.2310164 Long: -81.4827469 Datum: NAD 83

Soil Map Unit Name: Wheeling silt loam, 2 to 6 percent slopes (WrB) NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes ☒ No ☐

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) Significant recent rainfall and snowmelt resulting in saturation, high water table, and surface water throughout AOI. These factors were excluded as indicators for wetland hydrology.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (minimum of one is required; check all that apply)</u> <div style="display: flex; flex-wrap: wrap;"> <div style="width: 50%;"> <input type="checkbox"/> Surface Water (A1)  <input type="checkbox"/> High Water Table (A2)  <input type="checkbox"/> Saturation (A3)  <input type="checkbox"/> Water Marks (B1)  <input type="checkbox"/> Sediment Deposits (B2)  <input type="checkbox"/> Drift Deposits (B3)  <input type="checkbox"/> Algal Mat or Crust (B4)  <input type="checkbox"/> Iron Deposits (B5)  <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)  <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)         </div> <div style="width: 50%;"> <input type="checkbox"/> Water-Stained Leaves (B9)  <input type="checkbox"/> Aquatic Fauna (B13)  <input type="checkbox"/> Marl Deposits (B15)  <input type="checkbox"/> Hydrogen Sulfide Odor (C1)  <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)  <input type="checkbox"/> Presence of Reduced Iron (C4)  <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)  <input type="checkbox"/> Thin Muck Surface (C7)  <input type="checkbox"/> Other (Explain in Remarks)         </div> </div>	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<b>Field Observations:</b> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0</u> (includes capillary fringe)	<b>Wetland Hydrology Present?</b> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	



**VEGETATION** – Use scientific names of plants.

 Sampling Point: UPL-5

Tree Stratum (Plot size: <u>30'</u> )	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	<b>Dominance Test worksheet:</b>  Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
			=Total Cover	<b>Prevalence Index worksheet:</b>  <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>95</u></td> <td>x 4 = <u>380</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>95</u> (A)</td> <td><u>380</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>95</u>	x 4 = <u>380</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>95</u> (A)	<u>380</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>95</u>	x 4 = <u>380</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>95</u> (A)	<u>380</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
			=Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15'</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
			=Total Cover	<b>Hydrophytic Vegetation Indicators:</b>  <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 <sup>1</sup> <u>4</u> - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)  <u>  </u> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
			=Total Cover																	
Herb Stratum (Plot size: <u>5'</u> )																				
1. <u>Poa pratensis</u>	<u>90</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Solidago canadensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
			<u>95</u> =Total Cover	<b>Definitions of Vegetation Strata:</b>  <b>Tree</b> – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/shrub</b> – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vines</b> – All woody vines greater than 3.28 ft in height.																
			=Total Cover																	
Woody Vine Stratum (Plot size: <u>30'</u> )																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
			=Total Cover																	
Remarks: (Include photo numbers here or on a separate sheet.)																				

## SOIL

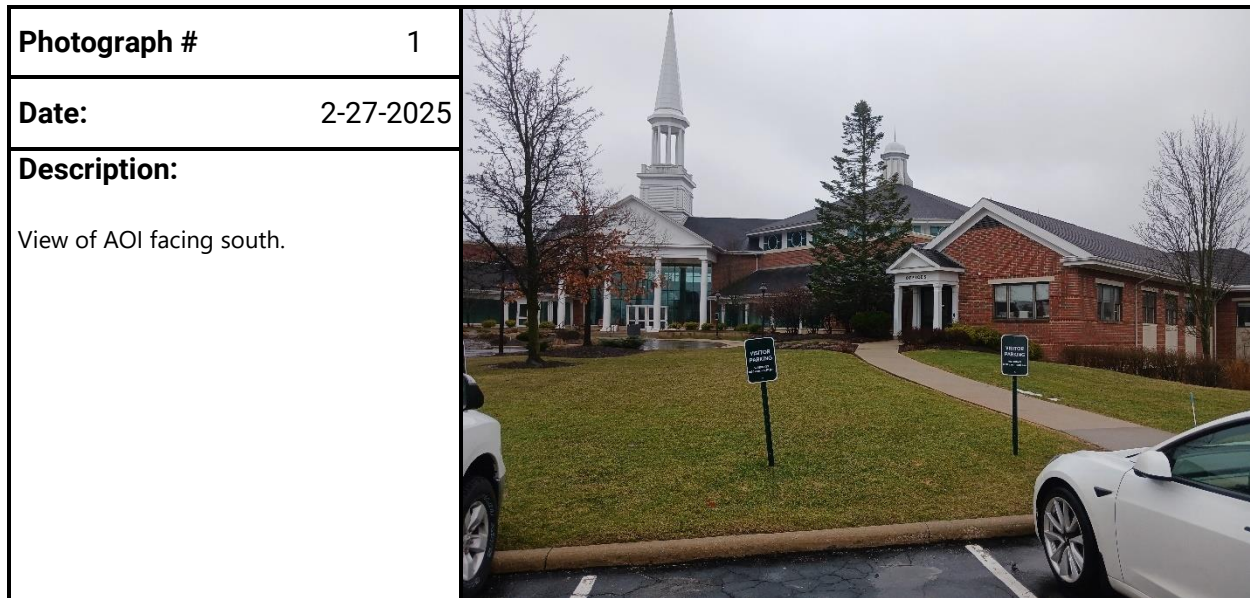
Sampling Point: UPL-5

[illegible]

## APPENDIX B – SITE PHOTOGRAPHS

## Proposed Development – Hudson, Ohio

### Site Photographs



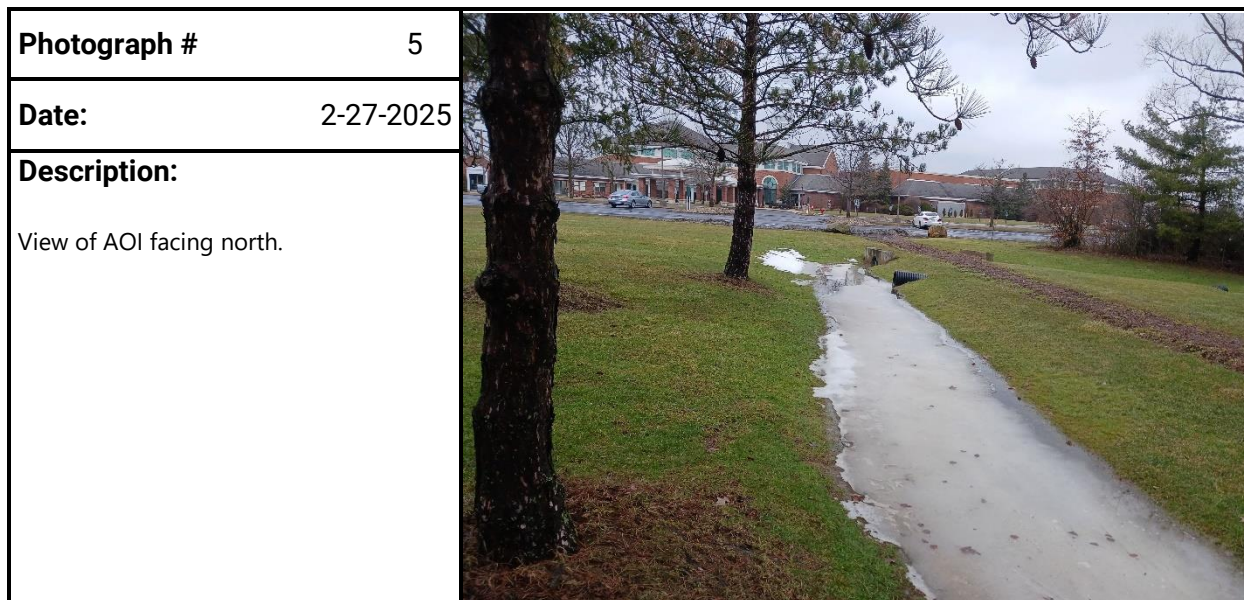
**Proposed Development – Hudson, Ohio**  
**Site Photographs**

<b>Photograph #</b>	3	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of AOI facing south.	


<b>Photograph #</b>	4	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of AOI facing south.	



**Proposed Development – Hudson, Ohio**  
**Site Photographs**



**Proposed Development – Hudson, Ohio**  
**Site Photographs**


<b>Photograph #</b>	7	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of AOI with existing stormwater basin facing south.	

<b>Photograph #</b>	8	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of AOI with existing stormwater basin facing west.	



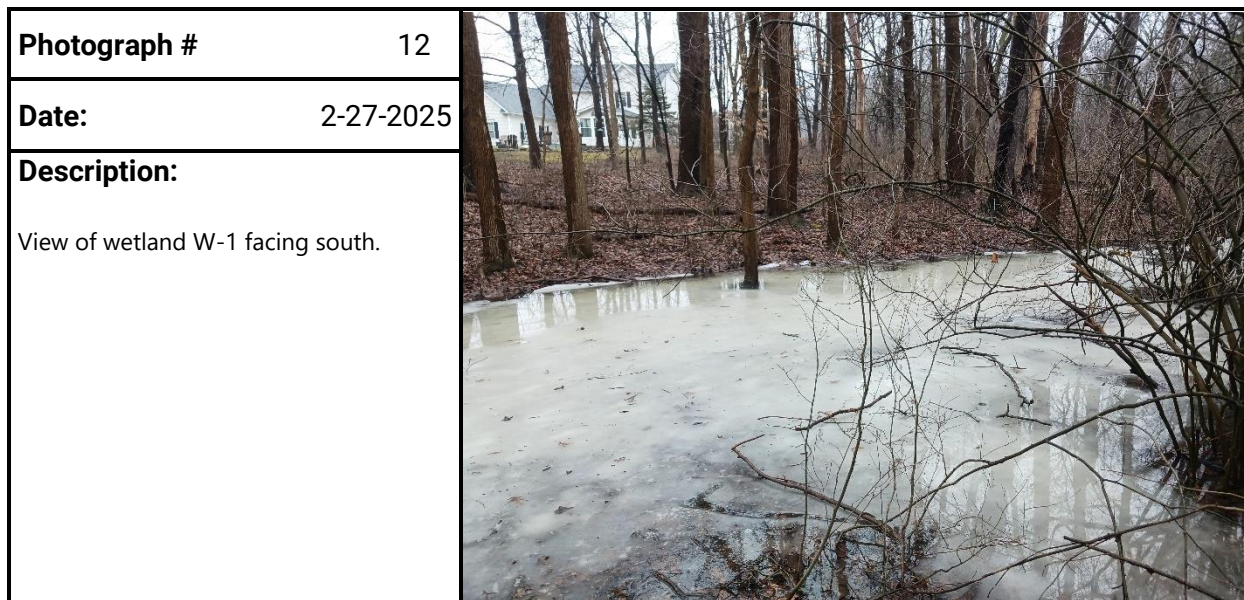
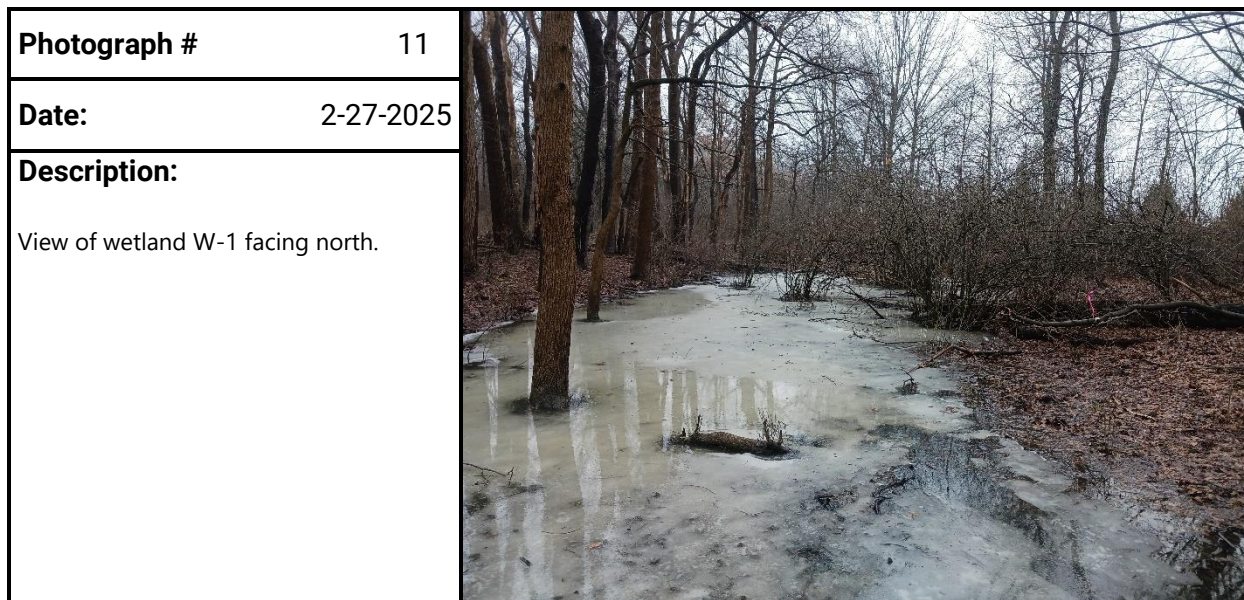
**Proposed Development – Hudson, Ohio**  
**Site Photographs**

<b>Photograph #</b>	9	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of AOI with existing stormwater basin facing south.	

<b>Photograph #</b>	10	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of AOI with existing stormwater basin facing west.	

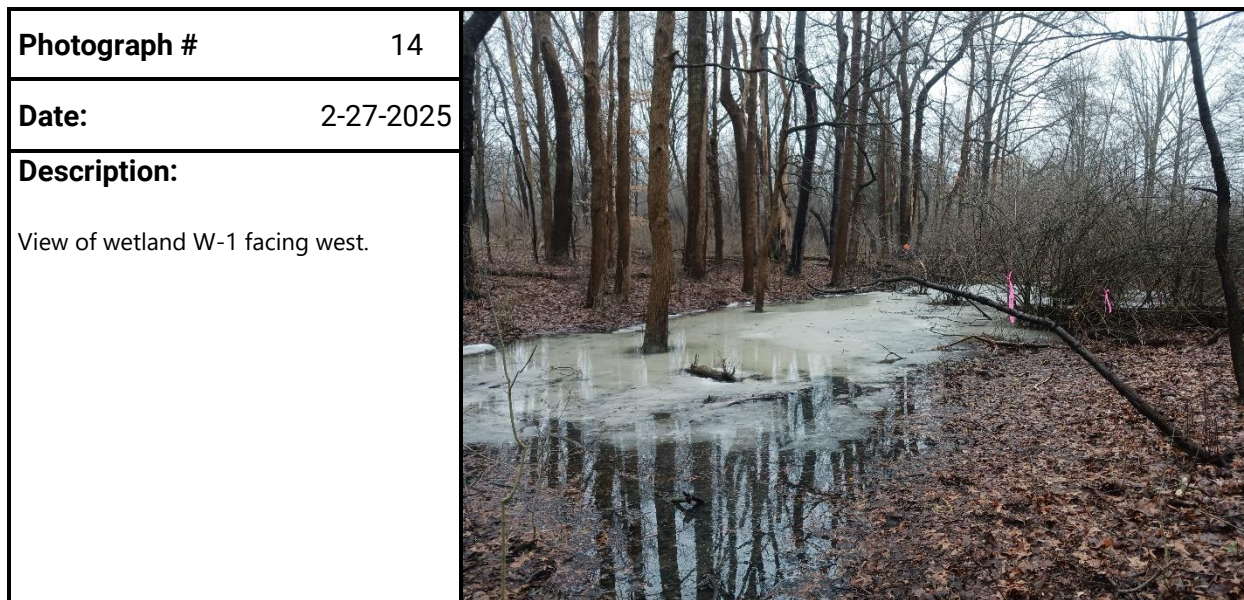
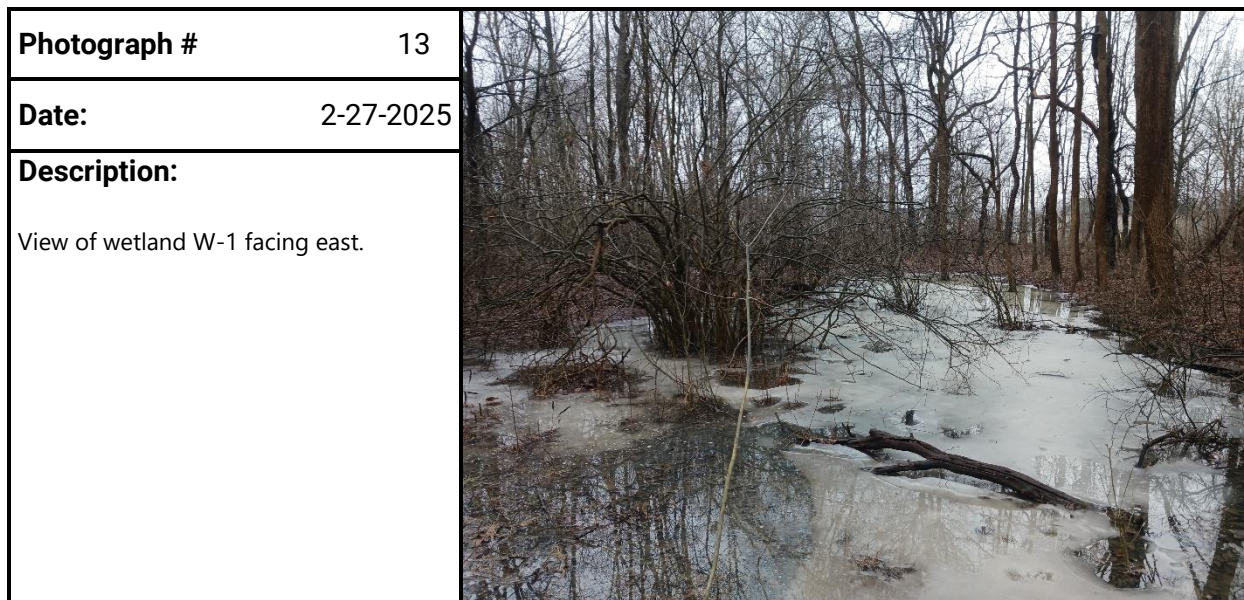


**Proposed Development – Hudson, Ohio**  
**Site Photographs**






**Proposed Development – Hudson, Ohio**  
**Site Photographs**






**Proposed Development – Hudson, Ohio**  
**Site Photographs**


<b>Photograph #</b>	15	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of wetland W-2 facing north.	

<b>Photograph #</b>	16	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of wetland W-2 facing south.	




**Proposed Development – Hudson, Ohio**  
**Site Photographs**

<b>Photograph #</b>	17	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of wetland W-2 facing east.	

<b>Photograph #</b>	18	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of wetland W-2 facing west.	



**Proposed Development – Hudson, Ohio**  
**Site Photographs**

<b>Photograph #</b>	19	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of wetland W-3 facing north.	

<b>Photograph #</b>	20	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of wetland W-3 facing south.	




**Proposed Development – Hudson, Ohio**  
**Site Photographs**


<b>Photograph #</b>	21	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of wetland W-3 facing east.	

<b>Photograph #</b>	22	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of wetland W-3 facing west.	




**Proposed Development – Hudson, Ohio**  
**Site Photographs**


<b>Photograph #</b>	23	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of upland point UPL-1.	

<b>Photograph #</b>	24	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of upland point UPL-2.	




**Proposed Development – Hudson, Ohio**  
**Site Photographs**

<b>Photograph #</b>	25	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of upland point UPL-3.	

<b>Photograph #</b>	26	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of upland point UPL-4.	




**Proposed Development – Hudson, Ohio**  
**Site Photographs**

<b>Photograph #</b>	27	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of upland point UPL-5.	

<b>Photograph #</b>	28	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of seep 1.	

**Proposed Development – Hudson, Ohio**  
**Site Photographs**

<b>Photograph #</b>	29	
<b>Date:</b>	2-27-2025	
<b>Description:</b>	View of seep 2.	

## APPENDIX C – SOIL MAP AND DESCRIPTIONS





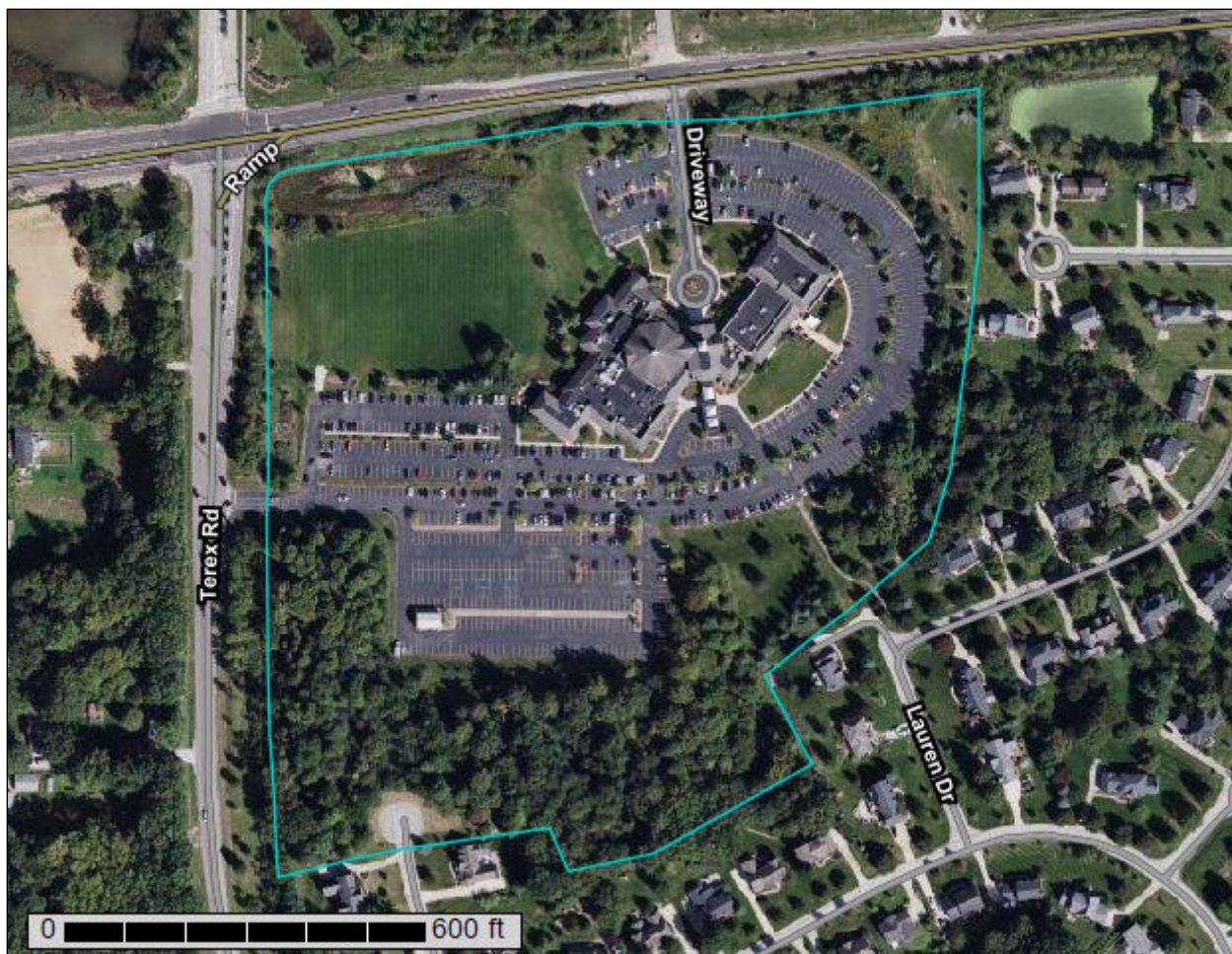
United States  
Department of  
Agriculture

NRCS

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for Summit County, Ohio



# Preface

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Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.



# Soil Map

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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features

 Blowout

 Borrow Pit

 Clay Spot

 Closed Depression

 Gravel Pit

 Gravelly Spot

 Landfill

 Lava Flow

 Marsh or swamp

 Mine or Quarry

 Miscellaneous Water

 Perennial Water

 Rock Outcrop

 Saline Spot

 Sandy Spot

 Severely Eroded Spot

 Sinkhole

 Slide or Slip

 Sodic Spot

 Spoil Area

 Stony Spot

 Very Stony Spot

 Wet Spot

 Other

 Special Line Features

### Water Features

 Streams and Canals

### Transportation

 Rails

 Interstate Highways

 US Routes

 Major Roads

 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
Web Soil Survey URL:  
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Summit County, Ohio  
Survey Area Data: Version 21, Aug 29, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 12, 2020—Sep 21, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Canadice silty clay loam	0.1	0.2%
CcB	Caneadea silt loam, 2 to 6 percent slopes	14.0	49.2%
CoC2	Chili gravelly loam, 6 to 12 percent slopes, moderately eroded	2.1	7.5%
EuC	Ellsworth-Urban land complex, 6 to 18 percent slopes	2.3	8.1%
GbC2	Geeburg silt loam, 6 to 12 percent slopes, moderately eroded	4.4	15.3%
GbD2	Geeburg silt loam, 12 to 18 percent slopes, moderately eroded	0.1	0.3%
Mn	Mahoning-Urban land complex, 0 to 2 percent slopes	3.0	10.5%
Sb	Sebring silt loam, 0 to 2 percent slopes	0.4	1.4%
WrB	Wheeling silt loam, 2 to 6 percent slopes	2.1	7.4%
<b>Totals for Area of Interest</b>		<b>28.6</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different

management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## Summit County, Ohio

### Ca—Canadice silty clay loam

#### Map Unit Setting

*National map unit symbol:* wpsl  
*Elevation:* 590 to 1,970 feet  
*Mean annual precipitation:* 32 to 42 inches  
*Mean annual air temperature:* 48 to 54 degrees F  
*Frost-free period:* 140 to 195 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Canadice and similar soils:* 95 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Canadice

##### Setting

*Landform:* Depressions on terraces  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Clayey lacustrine deposits

##### Typical profile

*H1 - 0 to 9 inches:* silty clay loam  
*H2 - 9 to 38 inches:* silty clay  
*H3 - 38 to 60 inches:* silty clay

##### Properties and qualities

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 0 to 6 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Available water supply, 0 to 60 inches:* Moderate (about 8.8 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4w  
*Hydrologic Soil Group:* D  
*Ecological site:* F139XY012OH - Wet Acidic Depression  
*Forage suitability group:* Unnamed (G139XYC-2OH)  
*Other vegetative classification:* Unnamed (G139XYC-2OH)  
*Hydric soil rating:* Yes

#### Minor Components

##### Caneadea

*Percent of map unit:* 5 percent  
*Landform:* Rises  
*Hydric soil rating:* No



## **CcB—Caneadea silt loam, 2 to 6 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* wpsn  
*Elevation:* 590 to 1,970 feet  
*Mean annual precipitation:* 32 to 42 inches  
*Mean annual air temperature:* 48 to 54 degrees F  
*Frost-free period:* 140 to 195 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Caneadea and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Caneadea**

#### **Setting**

*Landform:* Terraces  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Clayey lacustrine deposits

#### **Typical profile**

*H1 - 0 to 7 inches:* silt loam  
*H2 - 7 to 43 inches:* silty clay  
*H3 - 43 to 60 inches:* silty clay loam

#### **Properties and qualities**

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.06 in/hr)  
*Depth to water table:* About 6 to 18 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* D  
*Ecological site:* F139XY002OH - Moist Calcareous Drift Flats  
*Forage suitability group:* Unnamed (G139XYC-2OH)  
*Other vegetative classification:* Unnamed (G139XYC-2OH)  
*Hydric soil rating:* No

**Minor Components**

**Soils with a silt mantle**

*Percent of map unit:* 4 percent

**Geeburg**

*Percent of map unit:* 4 percent

*Landform:* Moraines, till plains

**Glenford**

*Percent of map unit:* 4 percent

*Landform:* Terraces, lake plains

**Canadice**

*Percent of map unit:* 3 percent

*Landform:* Drainageways on terraces, depressions on terraces

*Hydric soil rating:* Yes

**CoC2—Chili gravelly loam, 6 to 12 percent slopes, moderately eroded**

**Map Unit Setting**

*National map unit symbol:* wpt4

*Elevation:* 700 to 1,160 feet

*Mean annual precipitation:* 32 to 42 inches

*Mean annual air temperature:* 48 to 54 degrees F

*Frost-free period:* 133 to 195 days

*Farmland classification:* Not prime farmland

**Map Unit Composition**

*Chili and similar soils:* 90 percent

*Minor components:* 10 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Chili**

**Setting**

*Landform:* Terraces, kames

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Loamy outwash

**Typical profile**

*H1 - 0 to 9 inches:* gravelly loam

*H2 - 9 to 42 inches:* gravelly sandy loam

*H4 - 42 to 60 inches:* gravelly sand

**Properties and qualities**

*Slope:* 6 to 12 percent

*Depth to restrictive feature:* More than 80 inches

*Drainage class:* Well drained

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*Capacity of the most limiting layer to transmit water (Ksat):* High (2.00 to 6.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Calcium carbonate, maximum content:* 5 percent

*Available water supply, 0 to 60 inches:* Low (about 5.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* A

*Ecological site:* F139XY003OH - Dry Calcareous Drift Plains

*Forage suitability group:* Unnamed (G139XYB-1OH)

*Other vegetative classification:* Unnamed (G139XYB-1OH)

*Hydric soil rating:* No

### Minor Components

#### Wooster

*Percent of map unit:* 4 percent

*Landform:* Moraines, till plains

#### Areas with less gravel in the surface layer

*Percent of map unit:* 3 percent

#### Areas with more gravel in the surface layer

*Percent of map unit:* 3 percent

## EuC—Ellsworth-Urban land complex, 6 to 18 percent slopes

### Map Unit Setting

*National map unit symbol:* 2v02f

*Elevation:* 590 to 1,970 feet

*Mean annual precipitation:* 33 to 52 inches

*Mean annual air temperature:* 43 to 52 degrees F

*Frost-free period:* 135 to 215 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Ellsworth and similar soils:* 55 percent

*Urban land:* 30 percent

*Minor components:* 15 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Ellsworth

#### Setting

*Landform:* Till plains

*Landform position (two-dimensional):* Shoulder, backslope

*Landform position (three-dimensional):* Interfluve, side slope



## Custom Soil Resource Report

*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Till

### Typical profile

*Ap - 0 to 8 inches:* silt loam  
*BE - 8 to 11 inches:* silty clay loam  
*Bt1 - 11 to 16 inches:* silty clay loam  
*Bt2 - 16 to 25 inches:* silty clay loam  
*Bt3 - 25 to 37 inches:* silty clay loam  
*C - 37 to 60 inches:* silty clay loam

### Properties and qualities

*Slope:* 6 to 18 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 11 to 24 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Available water supply, 0 to 60 inches:* Moderate (about 6.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* D  
*Ecological site:* F139XY002OH - Moist Calcareous Drift Flats  
*Hydric soil rating:* No

## Description of Urban Land

### Setting

*Down-slope shape:* Linear  
*Across-slope shape:* Linear

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8  
*Hydric soil rating:* Unranked

## Minor Components

### Udorthents

*Percent of map unit:* 10 percent  
*Hydric soil rating:* Unranked

### Mahoning

*Percent of map unit:* 5 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Summit, footslope  
*Landform position (three-dimensional):* Interfluve, base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

## **GbC2—Geeburg silt loam, 6 to 12 percent slopes, moderately eroded**

### **Map Unit Setting**

*National map unit symbol:* wpv6  
*Elevation:* 590 to 1,970 feet  
*Mean annual precipitation:* 32 to 42 inches  
*Mean annual air temperature:* 48 to 54 degrees F  
*Frost-free period:* 140 to 195 days  
*Farmland classification:* Not prime farmland

### **Map Unit Composition**

*Geeburg and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Geeburg**

#### **Setting**

*Landform:* Hillsides  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Clayey lacustrine deposits

#### **Typical profile**

*H1 - 0 to 7 inches:* silt loam  
*H2 - 7 to 33 inches:* silty clay  
*H3 - 33 to 60 inches:* silty clay

#### **Properties and qualities**

*Slope:* 6 to 12 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Moderately well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 18 to 30 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 10 percent  
*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* D  
*Ecological site:* F139XY002OH - Moist Calcareous Drift Flats  
*Hydric soil rating:* No

**Minor Components**

**Areas that are not eroded**

*Percent of map unit: 5 percent*

**Glenford**

*Percent of map unit: 5 percent*

*Landform: Terraces, lake plains*

**Ellsworth**

*Percent of map unit: 5 percent*

*Landform: Till plains*

**GbD2—Geeburg silt loam, 12 to 18 percent slopes, moderately eroded**

**Map Unit Setting**

*National map unit symbol: wpv7*

*Elevation: 590 to 1,970 feet*

*Mean annual precipitation: 32 to 42 inches*

*Mean annual air temperature: 48 to 54 degrees F*

*Frost-free period: 140 to 195 days*

*Farmland classification: Not prime farmland*

**Map Unit Composition**

*Geeburg and similar soils: 90 percent*

*Minor components: 10 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

**Description of Geeburg**

**Setting**

*Landform: Hillsides*

*Down-slope shape: Linear*

*Across-slope shape: Linear*

*Parent material: Clayey lacustrine deposits*

**Typical profile**

*H1 - 0 to 7 inches: silt loam*

*H2 - 7 to 33 inches: silty clay*

*H3 - 33 to 60 inches: silty clay*

**Properties and qualities**

*Slope: 12 to 18 percent*

*Depth to restrictive feature: More than 80 inches*

*Drainage class: Moderately well drained*

*Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)*

*Depth to water table: About 18 to 30 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Calcium carbonate, maximum content: 10 percent*



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*Available water supply, 0 to 60 inches:* Moderate (about 8.7 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 6e

*Hydrologic Soil Group:* D

*Ecological site:* F139XY002OH - Moist Calcareous Drift Flats

*Hydric soil rating:* No

### Minor Components

#### Uneroded soils

*Percent of map unit:* 10 percent

## Mn—Mahoning-Urban land complex, 0 to 2 percent slopes

### Map Unit Setting

*National map unit symbol:* 2v031

*Elevation:* 590 to 1,970 feet

*Mean annual precipitation:* 33 to 52 inches

*Mean annual air temperature:* 43 to 52 degrees F

*Frost-free period:* 135 to 215 days

*Farmland classification:* Not prime farmland

### Map Unit Composition

*Mahoning and similar soils:* 45 percent

*Urban land:* 35 percent

*Minor components:* 20 percent

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Mahoning

#### Setting

*Landform:* Till plains

*Landform position (two-dimensional):* Summit, footslope

*Landform position (three-dimensional):* Interfluve, base slope

*Down-slope shape:* Concave

*Across-slope shape:* Linear

*Parent material:* Till

#### Typical profile

*Ap - 0 to 7 inches:* silt loam

*Eg - 7 to 9 inches:* silt loam

*Btg - 9 to 12 inches:* silty clay loam

*Bt1 - 12 to 20 inches:* silty clay

*Bt2 - 20 to 30 inches:* silty clay

*BCt - 30 to 36 inches:* clay loam

*C - 36 to 60 inches:* clay loam

#### Properties and qualities

*Slope:* 0 to 2 percent

## Custom Soil Resource Report

*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Somewhat poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Very low to moderately low (0.00 to 0.14 in/hr)  
*Depth to water table:* About 6 to 12 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 15 percent  
*Available water supply, 0 to 60 inches:* Moderate (about 6.6 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* D  
*Ecological site:* F139XY002OH - Moist Calcareous Drift Flats  
*Hydric soil rating:* No

### Description of Urban Land

#### Setting

*Down-slope shape:* Linear  
*Across-slope shape:* Linear

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 8  
*Hydric soil rating:* Unranked

### Minor Components

#### Udorthents

*Percent of map unit:* 10 percent  
*Hydric soil rating:* Unranked

#### Ellsworth

*Percent of map unit:* 5 percent  
*Landform:* Till plains  
*Landform position (two-dimensional):* Shoulder, summit  
*Landform position (three-dimensional):* Interfluve, side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Hydric soil rating:* No

#### Trumbull

*Percent of map unit:* 5 percent  
*Landform:* Depressions  
*Landform position (two-dimensional):* Toeslope  
*Landform position (three-dimensional):* Base slope  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## **Sb—Sebring silt loam, 0 to 2 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 2v057  
*Elevation:* 590 to 1,970 feet  
*Mean annual precipitation:* 33 to 52 inches  
*Mean annual air temperature:* 43 to 52 degrees F  
*Frost-free period:* 135 to 215 days  
*Farmland classification:* Prime farmland if drained

### **Map Unit Composition**

*Sebring and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Sebring**

#### **Setting**

*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Parent material:* Glaciolacustrine deposits

#### **Typical profile**

*Ap - 0 to 9 inches:* silt loam  
*BEg - 9 to 14 inches:* silt loam  
*Btg - 14 to 38 inches:* silty clay loam  
*BCg - 38 to 44 inches:* silty clay loam  
*Cg - 44 to 72 inches:* silt loam

#### **Properties and qualities**

*Slope:* 0 to 2 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Poorly drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.14 to 1.42 in/hr)  
*Depth to water table:* About 0 to 9 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* Frequent  
*Calcium carbonate, maximum content:* 9 percent  
*Available water supply, 0 to 60 inches:* Very high (about 12.1 inches)

#### **Interpretive groups**

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3w  
*Hydrologic Soil Group:* C/D  
*Ecological site:* F139XY011OH - Wet Calcareous Depression  
*Hydric soil rating:* Yes

## Minor Components

### Fitchville

*Percent of map unit:* 8 percent  
*Landform:* Lakebeds (relict), terraces  
*Landform position (three-dimensional):* Tread, talf  
*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Hydric soil rating:* No

### Luray

*Percent of map unit:* 7 percent  
*Landform:* Terraces  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Concave  
*Across-slope shape:* Concave  
*Hydric soil rating:* Yes

## WrB—Wheeling silt loam, 2 to 6 percent slopes

### Map Unit Setting

*National map unit symbol:* wpx8  
*Elevation:* 590 to 1,970 feet  
*Mean annual precipitation:* 32 to 55 inches  
*Mean annual air temperature:* 46 to 57 degrees F  
*Frost-free period:* 140 to 195 days  
*Farmland classification:* All areas are prime farmland

### Map Unit Composition

*Wheeling and similar soils:* 95 percent  
*Minor components:* 5 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Wheeling

#### Setting

*Landform:* Outwash terraces  
*Down-slope shape:* Convex  
*Across-slope shape:* Linear  
*Parent material:* Outwash

#### Typical profile

*H1 - 0 to 10 inches:* silt loam  
*H2 - 10 to 35 inches:* silt loam  
*H3 - 35 to 60 inches:* sandy loam

#### Properties and qualities

*Slope:* 2 to 6 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained



## Custom Soil Resource Report

*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water supply, 0 to 60 inches:* Moderate (about 8.4 inches)

### **Interpretive groups**

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 2e

*Hydrologic Soil Group:* B

*Ecological site:* F139XY005OH - Dry Acidic Drift Plains

*Hydric soil rating:* No

### **Minor Components**

#### **Chili**

*Percent of map unit:* 5 percent

*Landform:* Terraces

# Soil Information for All Uses

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## Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

## Land Classifications

Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

## Hydric Rating by Map Unit

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

## Custom Soil Resource Report

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) 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 (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.


# Custom Soil Resource Report Map—Hydric Rating by Map Unit











## MAP LEGEND

### Area of Interest (AOI)







 Area of Interest (AOI)

### Soils







#### Soil Rating Polygons

 Hydric (100%)  
 Hydric (66 to 99%)  
 Hydric (33 to 65%)  
 Hydric (1 to 32%)  
 Not Hydric (0%)  
 Not rated or not available


#### Soil Rating Lines

 Hydric (100%)  
 Hydric (66 to 99%)  
 Hydric (33 to 65%)  
 Hydric (1 to 32%)  
 Not Hydric (0%)  
 Not rated or not available






#### Soil Rating Points

 Hydric (100%)  
 Hydric (66 to 99%)  
 Hydric (33 to 65%)  
 Hydric (1 to 32%)  
 Not Hydric (0%)  
 Not rated or not available


### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Summit County, Ohio  
 Survey Area Data: Version 21, Aug 29, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 12, 2020—Sep 21, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

**Table—Hydric Rating by Map Unit**

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ca	Canadice silty clay loam	95	0.1	0.2%
CcB	Caneadea silt loam, 2 to 6 percent slopes	3	14.0	49.2%
CoC2	Chili gravelly loam, 6 to 12 percent slopes, moderately eroded	0	2.1	7.5%
EuC	Ellsworth-Urban land complex, 6 to 18 percent slopes	0	2.3	8.1%
GbC2	Geeburg silt loam, 6 to 12 percent slopes, moderately eroded	0	4.4	15.3%
GbD2	Geeburg silt loam, 12 to 18 percent slopes, moderately eroded	0	0.1	0.3%
Mn	Mahoning-Urban land complex, 0 to 2 percent slopes	5	3.0	10.5%
Sb	Sebring silt loam, 0 to 2 percent slopes	92	0.4	1.4%
WrB	Wheeling silt loam, 2 to 6 percent slopes	0	2.1	7.4%
<b>Totals for Area of Interest</b>			<b>28.6</b>	<b>100.0%</b>

**Rating Options—Hydric Rating by Map Unit***Aggregation Method:* Percent Present

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

## Custom Soil Resource Report

The aggregation method "Percent Present" returns the cumulative percent composition of all components of a map unit for which a certain condition is true. For example, attribute "Hydric Rating by Map Unit" returns the cumulative percent composition of all components of a map unit where the corresponding hydric rating is "Yes". Conditions may be simple or complex. At runtime, the user may be able to specify all, some or none of the conditions in question.

### *Component Percent Cutoff: None Specified*

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

### *Tie-break Rule: Lower*

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

# References

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- American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.
- American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.
- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. September 18, 2002. Hydric soils of the United States.
- Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.
- National Research Council. 1995. Wetlands: Characteristics and boundaries.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_054262](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262)
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053577](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577)
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053580](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580)
- Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.
- United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.
- United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2\\_053374](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374)
- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>



## Custom Soil Resource Report

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2\\_054242](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242)

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

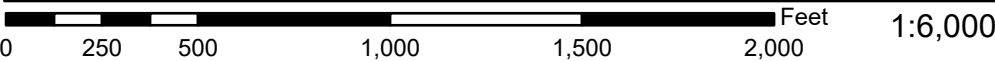
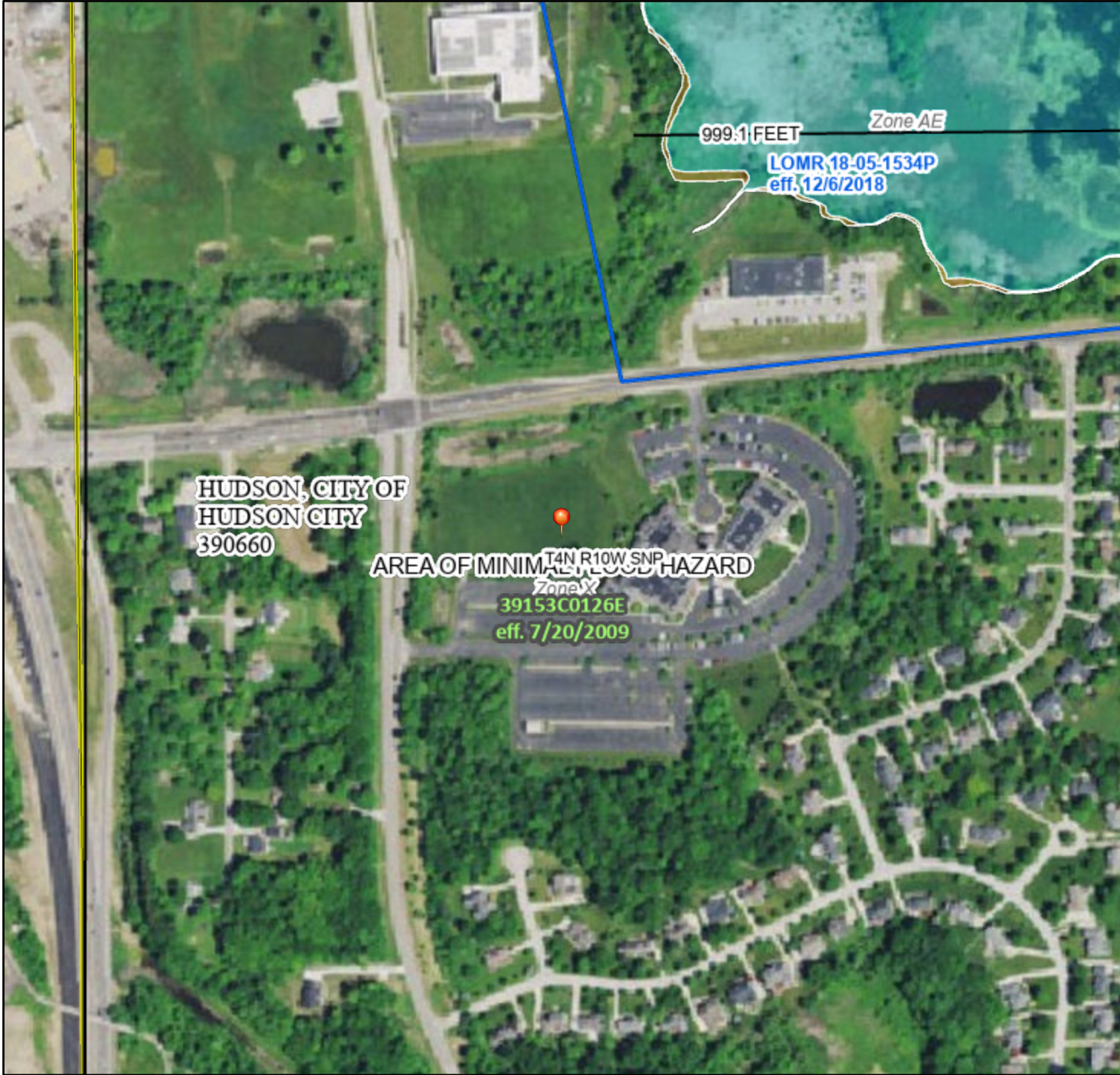
United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)

**APPENDIX D – FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP**

# National Flood Hazard Layer FIRMette



81°29'25"W 41°14'8"N



Basemap Imagery Source: USGS National Map 2023

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

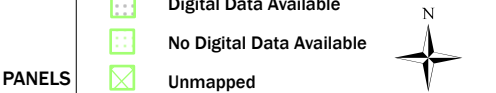
SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 2/12/2025 at 6:19 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.