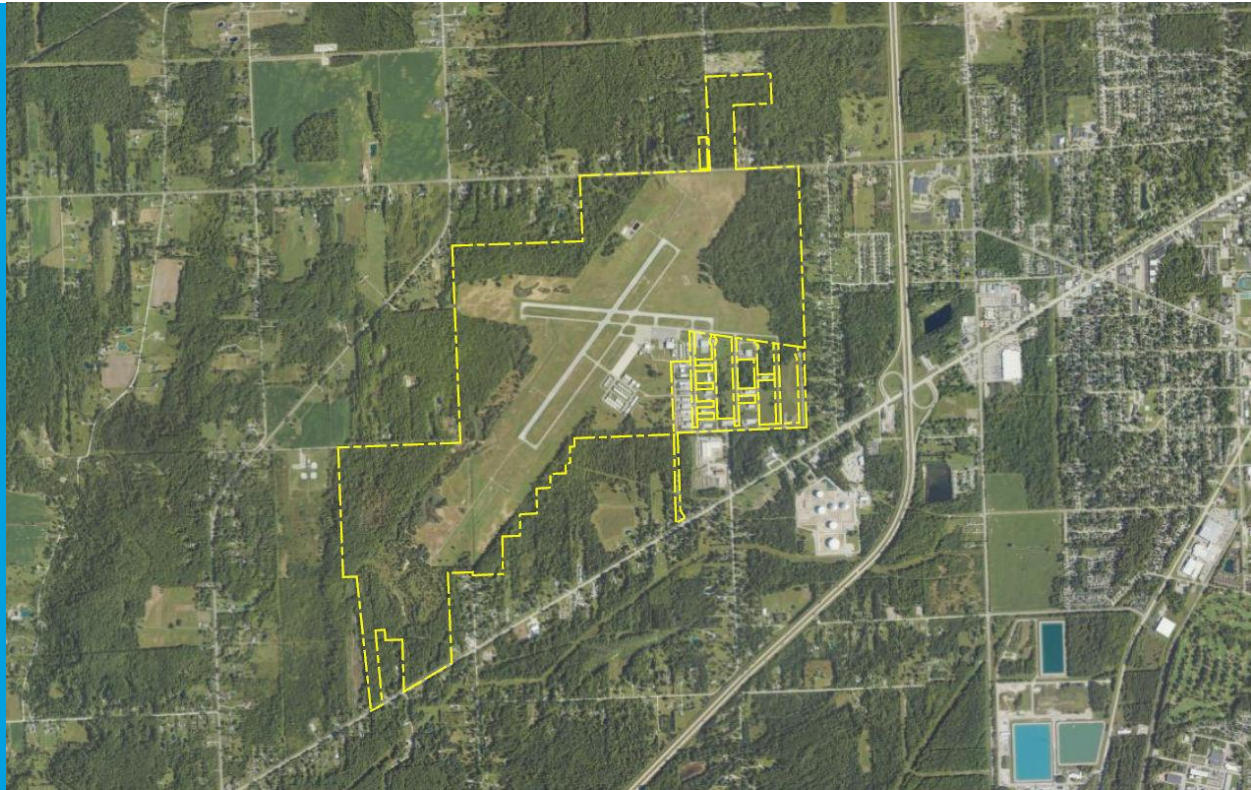

Appendix H – Wetland Delineation Report

WETLAND DELINEATION REPORT



ENVIRONMENTAL ASSESSMENT FOR RUNWAY 4/22
APPROACH CLEARING

ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN)
PORT HURON, MI

PROJECT NUMBER 1937800-210771.01

January 2025

Table of Contents

	Page
1. Executive Summary	1
2. Introduction	2
3. Methods	4
4. Results and Discussion	6
A. Site Description	6
(1) Airport History and Facilities	6
(2) Area of Interest Description	6
(3) Soils Mapping.....	7
(4) Aquatic Resources	8
(5) Antecedent Climatic Conditions	9
(6) Historic Aerial Photography Review.....	10
(7) Atypical Conditions Analysis	12
(8) Accessibility.....	12
B. Findings	12
(1) Wetlands	12
(2) Streams/Ditches.....	21
(3) Uplands	21
(4) Invasive species.....	23
(5) Wildlife observed.....	23
(6) Summary	24
5. Conclusions.....	26
6. Certifications and Limitations	27
7. References.....	28
8. List of Preparers/Contributors	30

TABLES

Table 1. Summary of Soils in the AOI	8
Table 2. Summary of Climatic Conditions for Site Visits	10
Table 3. Major Land Use Changes Within the AOI	11
Table 4. Summary of Delineated Wetlands Within the AOI	13
Table 5. Summary of Estimated Wetlands Within the AOI.....	19
Table 6. Summary of Streams/Ditches in the AOI.....	21
Table 7. Upland Species Observed Within the AOI	22

APPENDICES

Appendix A	Project Location and Parcel Accessibility Maps
Appendix B	Topography and NRCS Soils Mapping
Appendix C	Aquatic Resources and FEMA Floodplain Mapping
Appendix D	Antecedent Precipitation Analysis
Appendix E	Historic Aerial Photographs
Appendix F	Wetland Boundary Maps
Appendix G	Data Sheets
Appendix H	Field Photographs
Appendix I	Wetland Descriptions
Appendix J	Delineator Qualifications

1. Executive Summary

St. Clair International Airport (Airport or PHN) is a public-use general aviation airport located approximately three miles west of the City of Marysville and five miles southwest of Port Huron in St. Clair County, Michigan. The airport is located approximately 54 miles northeast of Detroit in the Thumb region of Michigan.

The Airport proposes to clear, grub, and grade land located off the ends of Runway 4/22. The proposed action is needed to remove existing and potential obstructions identified as penetrations to the Federal Aviation Regulation (FAR) Part 77 Imaginary Surfaces, Threshold Siting Surface (TSS), Precision Approach Path Indicator (PAPI) Light Signal Clearance Surface (LSCS) and Obstacle Clearance Surface (OCS), as well as the State of Michigan Licensing Surface. Unmaintained vegetation has the potential to become obstructions to runway approaches in the future.

In support of environmental documentation for this project, a wetland delineation was conducted by Mead & Hunt, Inc. (Mead & Hunt) within an Area of Interest (AOI) over four site visits on August 16 – 23, 2022, October 3 – 7, 2022, June 6 – 14, 2023, and September 25 – October 4, 2023. The AOI is in Sections 25, 26, 35, and 36, Township 6 North, Range 16 East and in Sections 2 and 3, Township 5N, Range 16 East in Kimball and St. Clair Townships, St. Clair County, Michigan. The AOI is split into two parts and totals approximately 442.75 acres.

Thirty-six (36) separate wetland boundaries were delineated within the AOI on airport property and are documented by sixty (60) sampling points. Five wetland classes are represented: Emergent (PEM), Scrub-shrub (PSS), Forested (PFO), Shallow Marsh (PUB), and Excavated Ditch (RUBx). Several large multi-class wetland complexes were delineated ranging in size from a little over an acre to more than 30 acres. Of these thirty-six wetlands, four (4) streams/excavated ditches were delineated on airport property as part of larger wetland complexes.

Due to the inaccessibility of private parcels within the project AOI, areas on private property could not be field assessed on foot. Therefore, nine (9) wetlands were estimated based on desktop data sources. Estimated wetlands consist of the same five classes as above (PEM, PSS, PFO, PUBHx, and RUBx) and generally are extensions to delineated wetlands. Two excavated ponds (PUBHx) were mapped based on NWI data. Within these nine estimated wetlands, three (3) streams were estimated using multiple desktop data sources.

2. Introduction

St. Clair International Airport is a public-use general aviation airport located approximately three miles west of the City of Marysville and five miles southwest of Port Huron in St. Clair County, Michigan. The Airport is owned and operated by the County and is included in the Federal Aviation Administration's (FAA) National Plan of Integrated Airport Systems (NPIAS). The State of Michigan designated the Airport as a Tier 1, C-II facility in the 2017 Michigan Airport System Plan (MASP).

The airport is located approximately 54 miles northeast of Detroit in Kimball and St. Clair Townships, in the Thumb region of Michigan. Interstate 94 (I-94) borders the airport on the east and south sides. Other surrounding local roads are Pickford Road on the east side of the Airport, Gratiot Ave on the south side, and Wadhams Road on the west side of the Airport. Smiths Creek Road borders the airfield on the north side with airport property extending to the north of this road. The Airport and Project Area of Interest (AOI) are shown on the Project Location Map provided in Appendix A.

Two paved runways support aircraft operations at PHN. Runway 4/22, the primary runway, is 5,104 feet long by 100 feet wide and oriented in a northeast-southwest direction. Runway 10/28 is the crosswind runway and is 4,000 feet long and 75 feet wide, oriented in an east-west direction. The Airport is approximately 1,135 acres in size and includes a general aviation terminal building, hangars, aprons, a fixed base operator (FBO), and a Snow Removal Equipment (SRE) building.

The Airport proposes to clear, grub, and grade land located off the ends of Runway 4/22. The proposed action is needed to remove existing and potential obstructions identified as penetrations to the Federal Aviation Regulation (FAR) Part 77 Imaginary Surfaces, Threshold Siting Surface (TSS), Precision Approach Path Indicator (PAPI) Light Signal Clearance Surface (LSCS) and Obstacle Clearance Surface (OCS), as well as the State of Michigan Licensing Surface.

Obstruction clearing is proposed on both airport property and private property in the approaches of Runway 4/22. Some private parcels with obstructions require new aviation easements to enable obstruction clearing. Initial field work efforts focusing on airport property were conducted over two site visits in 2022. Private parcel access was deemed unfeasible based on subsequent coordination with Airport personnel with knowledge of surrounding property owners. Two subsequent field visits conducted in June and September of 2023 completed field work efforts on airport property and assessed private parcels from accessible areas such as road rights-of-way (ROW) or from adjacent Airport-owned parcels. A parcel accessibility map is provided in Appendix A.

In support of environmental documentation for this project, a wetland delineation was conducted by Mead & Hunt, Inc. (Mead & Hunt) within an Area of Interest (AOI) over four site visits on August 16 – 23, 2022, October 3 – 7, 2022, June 6 – 14, 2023, and September 25 – October 4, 2023. The AOI is in Sections 25, 26, 35, and 36, Township 6 North, Range 16 East and in Sections 2 and 3, Township 5N, Range 16 East in Kimball and St. Clair Townships, St. Clair County, Michigan. The AOI is split into two parts and totals approximately 442.75 acres.

This report summarizes the results of the wetland delineation. Delineator qualifications are provided in Appendix I. Mead & Hunt staff who performed the wetland delineation are:

- Brauna Hartzell, BS Biological Science, Florida State University, 1982; MS Environmental Monitoring, University of Wisconsin-Madison, 1994; 22 years wetland delineation practice.
- Caroline Bruchman, BS Geographical Sciences, University of Maryland, 2017; MS Geographical Sciences, University of Maryland, 2018; 1 year wetland delineation practice.
- Kim Shannon, BS Biology, Oklahoma State University, 1994; MS Applied and Natural Science (Botany), Oklahoma State University, 1997; 11 years wetland delineation practice.

3. Methods

The wetland delineation made use of the following available resources to provide context and background information and assist in the field assessment:

- *Antecedent Precipitation Tool*, Version 2.0, 2022 (U.S. Army Corps of Engineers, Engineer Research and Development Center). Accessed December 2023.
- Climate Data and Summary Reports from AgACIS for Port Huron, MI. Accessed at <http://agacis.rcc-acis.org/>. Accessed December 2023.
- LiDAR Elevation Contour Data for St. Clair County (2017), one-foot contour interval from 2017 LiDAR collected as part of the Michigan Statewide Authoritative Imagery & LiDAR Program (MiSAIL). Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semco.org/>).
- Michigan Wetlands Map Viewer, accessed from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) at <https://www.mcgi.state.mi.us/wetlands/>.
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory mapping accessed at <https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>.
- *2022 National Wetland Plant List* (U.S. Army Corps of Engineers 2023, National Wetland Plant List, version 3.6).
- *Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils*, Version 8.2, 2018.
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey. Accessed at Web Soil Survey at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>.
- Aerial photography from USDA Farm Service Agency (USDA-FSA) National Agriculture Imagery Program (NAIP) from NAIP Imagery Map Service (WMS). Accessed at <https://gis.apfo.usda.gov/arcgis/rest/services/>.
- Aerial photography from Midland County, MI, 6-inch, 2020. Downloaded from GeoHub (<https://geohub-midlandcounty.hub.arcgis.com/>).

The field methods used conform to the Routine Onsite Method of the *1987 U.S. Army Corps of Engineers' (USACE) Wetland Delineation Manual*, as enhanced by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0) (U.S. Army Corps of Engineers, 2012). Soil characteristics were examined by digging pits with a 16-inch tile spade, and in cases where thick A horizons were encountered, an Eijkelkamp Edelman soil auger for

X:\1937800\210771.01\TECH\reports\WetlandDelineation\Report\PHN_Wetland Delineation.docx

combination soils with a 3-inch diameter by 6-inch-long barrel was employed to sample at depth. This soil auger was used to periodically test soils on both the upland and wetland sides of the boundary line. Soil pits were left open for a minimum of 15 minutes to adequately assess the water table. Munsell Soil Color charts were used to determine the hue, value, and chroma for the matrix and any redoximorphic features in each soil layer. Hydrologic indicators were visually assessed.

Vegetation was documented on Northcentral/Northeast Regional automated data forms provided by the USACE. Percent cover of each species in each stratum was estimated. The herbaceous stratum was sampled within a 5-foot radius plot, a 15-foot radius plot for the shrub/sapling stratum, and a 30-foot radius plot for the tree and woody vine stratum. The *2020 National Wetland Plant List* (USACE, 2020) was used to determine the wetland indicator status for each species, and the 50/20 rule was applied to determine dominance.

Antecedent precipitation was assessed using the Antecedent Precipitation Tool (APT) developed by the USACE in 2022. The APT compares precipitation data from multiple National Oceanic and Atmospheric Administration (NOAA) weather stations for three months prior to fieldwork to the 30-year normal range to determine if hydrologic conditions at the time of the delineation are normal, wetter, or drier than normal for the area.

A total of 60 data points—thirty (30) in uplands and thirty (30) in wetlands—were established to characterize the range of soil, vegetation, and hydrologic conditions. Wetland boundary points were indicated by wire pin flags placed approximately 25-50 feet apart. These sampling points and wetland boundary flags were surveyed with a Trimble DA2 GPS receiver capable of sub-meter accuracy and mapped using Geographic Information System (GIS) software.

Due to the nature of this clearing project, areas within each segment of the AOI that are regularly maintained in a grassland state and that do not contain obstructive vegetation identified for removal were not delineated. No project impacts are anticipated for these areas. Given the size of the combined AOI segments, this was done to focus work efforts on areas that would potentially experience project impacts.

Due to lack of entry permission for some parcels, not all areas on private property could be examined in the field. Private parcels at the Runway 22 end north of Smiths Creek Road and at the Runway 4 end were not accessible within the AOI. On those parcels where access permission was not provided, background data sources including one-foot contours, soils and NWI mapping, historic aerial photos, field conditions observed from accessible adjacent parcels or ROWs, and delineator experience were used to identify and estimate wetland boundaries on inaccessible parcels. See Appendix A for a Parcel Accessibility Map.

4. Results and Discussion

A. Site Description

(1) Airport History and Facilities

The airport in its current location began operations in the early 1950s after funds were appropriated in 1944 for the purchase of an initial area covering 785 acres. In 1950, funds were appropriated for development of runways and in 1951 an administration building was constructed. St. Clair County Airport became an international airport in 1954. Twenty-three years later the 80-acre Air Industrial Park was constructed in 1977. In 1994, the Instrument Landing System (ILS) was installed. Subsequent construction projects starting in 2015 added taxiways and rehabilitated Runway 4/22 (St. Clair County, 2024).

The Airport currently has two runways, Runway 4/22 and Runway 10/28, each with full parallel taxiways. Private hangars, general aviation terminal building, a FBO building, and maintenance facilities are available for users of the airport.

(2) Area of Interest Description

The AOI covers approximately 442.74 acres, split into two sections covering the runway approach surfaces on airport property and private lands. The Rwy 22 End AOI is the smaller of the two sections, covering 157.5 acres; the Rwy 4 End AOI covers 285.2 acres.

St. Clair County is situated within the Huron/Erie Lake Plains Ecoregion (EPA Level III Ecoregion: 57) and is split over two Level IV Ecoregions: the Saginaw Lake Plain Ecoregion (EPA Level IV Ecoregion: 57e) to the north of the City of Port Huron and the Maumee Lake Plain (EPA Level IV Ecoregion: 57a) to the south (US EPA, 2007). The St. Clair River flows to the south from Lake Huron to Lake St. Clair and forms the boundary between the United States and Canada. The Maumee Lake Plain Ecoregion extends from Port Huron along the St. Clair River and the Lake St. Clair and Lake Erie coastlines. Part of the Pleistocene Maumee glacial lake plain which encompassed the Lake Erie basin, the Maumee Lake Plain contains “clayey lake deposits, poorly drained fertile soils, and water-worked glacial till” (US EPA, 2007). The warmer temperatures of this region and its position to the west of Lake Erie results in little lake effect snow.

Well drained areas supported closed-canopy forests composed primarily of beech, sugar maple, hickory, and basswood; a mix of American elm, red ash, silver maple, and other deciduous swamp species occupied less well drained sites. Oak-hickory forest, oak savanna, or dry prairies inhabited sandier beach ridges. The wet prairies of the lake plain were dominated by grasses including bluejoint grass, prairie cordgrass, and big bluestem (US EPA, 2007) and yielded to lowland hardwoods (pin oak, silver maple, swamp white oak, black tupelo, and burr oak) with early settlement drainage practices that effectively lowered the water table.

Pre-settlement vegetation in the vicinity of the Rwy 4 End shows beech-sugar maple forest and patches of mixed hardwood swamp. The Rwy 22 End falls within a large area covered by mixed hardwood swamp (MNF, 2024).

With European settlement of this area came clearing, ditching, and tiling of the coastal marshes, wet prairies, and depressional wetlands to grow a variety of crops in what became one of the most productive agricultural regions in the state.

Currently, surrounding land use varies from low-density residential along the Gratiot Ave and Pickford Road corridors to undeveloped lands adjacent to airport property. The 80-acre Michigan Certified Business Air Industrial Park sits just to the east of the airport and provides both aviation and non-aviation services. Airport property extends to the north of Smiths Creek Road and includes forested areas and several residences along the Allen Road corridor.

Three watersheds span airport property: Pine River (HUC12: 040900010306), Holland Drain-Pine River (HUC12: 040900010304), and Bunce Creek-Frontal Saint Clair River (HUC12: 040900010307). The nearly level topography within airport property has naturally undefined drainage. The gently rolling terrain occurs over an elevation range of less than 10 feet over most of the AOI. Drainage at the airport is accomplished by ditching. The Moak Drain, located between Gratiot Ave and airport property at the Runway 4 End, flows to the southwest. In this area, on-airport drainage generally flows south to this drain through a series of constructed ditches.

At the Rwy 22 End, drainage is more diffuse and less defined by constructed drainageways. Land within this AOI is marked by shallow pockets with poor internal drainage and slight rises, seasonally collecting runoff in the low areas. Vegetation within maintained areas remains in a grassland/wet prairie state while unmaintained land north of Smiths Creek Road shifts to a closed canopy forest. Drainage within the forested area is diffuse but generally flows to the east toward the St. Clair River.

The Runway 22 end is situated at somewhat higher elevations compared with lower areas to the south and west. Topography within the Rwy 22 End of the AOI is relatively flat with topographic highs around 650 feet (NAVD 1988), dipping to 641 ft in the northeast corner of the AOI. Topography within the Rwy 4 End varies between 640 feet at the end of the runway to 630 feet in lower areas. Topographic mapping from LiDAR Elevation Data for St. Clair County (2017) is provided in Appendix B.

(3) Soils Mapping

Soil unit boundaries within the AOI are highly complex units composed of two or more soil units mapped together as a single unit complex with many knolls and shallow depressions. Seasonal water tables range from one foot above the surface to two feet below in undrained conditions.

About 88.3% of the AOI is covered by soil units rated as partially hydric: Allendale-Hoytville complex, 0 to 6 percent slopes (AhB), Allendale-Latty complex, 0 to 3 percent slopes (AIA), Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA), Latty complex, 0 to 3 percent slopes (LhA), and Wainola-Deford fine sands, 0 to 2 percent slopes (WdA). Soils from the first three complexes reflect the varied topography found within the project area: the higher knolls are dominated by the deep, somewhat poorly drained sandy soils of the Allendale series and the lower landscape positions within drainageways and depressions contain very poorly

drained clay loams (Hoytville), silty clays (Latty), silty clay loams (Lenawee), and silty clays (Toledo). All three of these complexes formed in either clayey glaciolacustrine sediments, clayey till, or lacustrine sediments.

Soils of the Wainola-Deford map unit, rated as partially hydric, consist of very deep, somewhat poorly drained fine sands formed in sandy glaciofluvial deposits on relatively flat landforms including outwash plains, lake plains, stream terraces, and deltas. The Latty complex covers the smallest percentage of the area mapped as partially hydric and similarly was formed in clayey glaciolacustrine sediments found on lake plains.

No soils within the project AOI are rated as predominantly hydric or hydric. Soils present within the AOI are summarized in Table 1. Soils mapping is presented in Appendix B.

TABLE 1. SUMMARY OF SOILS IN THE AOI

Map Unit Symbol	Map Unit Name	Percent of AOI	Primary Landform	Hydric Rating (percent)
AhB	Allendale-Hoytville complex, 0 to 6 percent slopes	30.60%	Knolls on till plains; Depressions and drainageways on till plains	Partially Hydric (45)
AIA	Allendale-Latty complex, 0 to 3 percent slopes	21.00%	Knolls on lake plains; Drainageways and depressions on lake plains	Partially Hydric (45)
AtA	Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes	15.90%	Knolls on lake plains; Drainageways and depressions on lake plains	Partially Hydric (55)
Bp	Borrow pits	0.60%	---	Non-hydric
LhA	Latty complex, 0 to 3 percent slopes	3.10%	Flats on lake plains, drainageways on lake plains; Knolls on lake plains	Partially Hydric (46)
RuB	Rousseau fine sand, 0 to 6 percent slopes	10.00%	Beaches on lake plains; Swales on lake plains; Drainageways and depressions on lake plains	Predominantly Non-hydric (22)
RuC	Rousseau fine sand, 6 to 12 percent slopes	1.00%	Knolls on lake plains, drainageways, ridges on lake plains, beaches	Non-hydric
WdA	Wainola-Deford fine sands, 0 to 2 percent slopes	17.70%	Beaches, outwash plains, knolls on deltas; Depressions, drainageways on deltas; Ridges on deltas	Partially hydric (35)

(4) Aquatic Resources

Aquatic resources including mapped streams, drains, and water bodies, wetlands and Federal Emergency Management Agency (FEMA) floodplains are shown on the maps provided in Appendix C.

(a). Wetlands

Wetlands mapped on the National Wetland Inventory (NWI) relevant to the two sections of the AOI primarily consist of forested or emergent classes. The NWI in this area was updated in 2015; this mapping is assessed here due to its currentness. Seasonally flooded forested wetlands (PFO1C) predominate to the west of the airfield while several temporary flooded forested wetlands (PFO1A) are mapped at the northern extent of the Rwy 22 End AOI and on the south side of the Rwy 4 End AOI. A large seasonally flooded scrub-shrub/phragmites-dominated emergent wetland (PSS1/EM5C) is shown within the Rwy 4 End AOI on airport property outside of the perimeter fence.

Several ditches within the Rwy 4 End AOI are mapped as excavated low gradient semi-permanently flooded unconsolidated bottom channels (R2UBFx). These all appear to drain southerly to the Moak Drain, also mapped as R2UBFx.

Within regularly maintained airfield areas in the project AOI, multiple seasonally flooded emergent (PEM1C) and phragmites-dominated seasonally flooded emergent (PEM5C) wetlands are mapped in the undulating topography. One large PEM5C wetland in the Rwy 4 End AOI also contains a permanently flooded freshwater pond in its central core mapped as PUBH.

(b). Streams

The AOI spans three watersheds: Pine River (HUC12: 040900010306), Holland Drain-Pine River (HUC12: 040900010304), and Bunce Creek-Frontal Saint Clair River (HUC12: 040900010307). The Airport is located between the Pine River on the west and the Saint Clair River on the east. The Airport is situated about 1.5 miles east of the Pine River. The Pine River flows southerly eventually reaching the Saint Clair River about 6.5 miles south of the Airport in the City of St. Clair. No named streams are within the project AOI.

Locally, two drains empty to the Pine River just outside of the AOI: the Moak Drain which flows southerly just south of airport property and the London Drain which flows just outside of the west side of the Airport.

Several ditches drain the southern half of the airfield to the Moak Drain in the Rwy 4 End AOI. Diffuse drainage through the Rwy 22 End AOI generally flows to the east through several ditches to Bunce Creek which empties to the Saint Clair River.

(c). Floodplains

An area of regulatory floodplain and 1% Annual Chance Flood Hazard (Zone AE) is mapped along the Pine River to the west and south of the Airport. No mapped floodplains are shown within the project AOI. A FEMA floodplain map is provided in Appendix C.

(5) Antecedent Climatic Conditions

The delineation was conducted over four site visits on August 16 – 23, 2022, October 3 – 7, 2022, June 6 –14, 2023, and September 25 – October 4, 2023. The Antecedent Precipitation Tool (USACE, 2022) with a single point location was used to assess hydrologic conditions for the three

months prior to each field visit. Table 2 summarizes APT results and recorded precipitation for each of the site visits.

TABLE 2. SUMMARY OF CLIMATIC CONDITIONS FOR SITE VISITS

Site Visit Dates	Environmental Conditions	Recorded Precipitation During Site Visit
August 16 – 23, 2022	Normal Conditions (Dry Season)	~ 1 inch
October 3 – 7, 2022	Drier than Normal (Wet Season)	< 0.5 inch
June 6 – 14, 2023	Normal Conditions (Dry Season)	~1.7 inches
September 25 – October 4, 2023	Wetter than Normal (Dry Season)	~ 0.5 inches

Appendix D contains the results of the APT analysis and precipitation records for the Port Huron, Michigan station.

(6) Historic Aerial Photography Review

This photo review concentrates on documenting changes in vegetative cover within the two segments of the project AOI though the early history of Airport's development is also documented.

Historic aerial photographs for the AOI covering the years 1951, 1967, 1973, 1978, 1985, 1998, 2006, 2010, 2012, 2016, 2018, 2020, and 2022 are provided in Appendix E. Four early photographs dated 1951, 1967, 1973, and 1978 were obtained from the USGS EarthExplorer web site (USGS, 2024). One image (1985) was obtained from the Wayne State University Library Systems Digital Collections (Wayne State, 2024). Images from 1998 to 2020 were accessed from the State of Michigan Imagery service (2024) and the most recent image from 2022 is from the ESRI Imagery (ESRI, Inc., 2024) imagery service.

As seen in the 1951 photograph, the initial stages of construction at the airport are visible: the basic configuration of the two runways is in place and the terminal apron is constructed. Lands within both sections of the AOI appear largely undeveloped and consist of forested areas to the west and south of the airfield (Rwy 4 End AOI). Residential development is limited along Gratiot Ave and Smiths Creek Road. The Rwy 22 End AOI north of Smiths Creek Road shows some residences along the road but much of the area is cleared or sparsely wooded except for a forest patch along Allen Road.

By 1967, the initial length of Runway 4/22 was about 3,900 feet and Runway 10/28 was about 2,500 feet in length. This photo shows that areas within the airfield have been cleared of vegetation; the shallow hill and swale topography present over most of the airport is evident in this photo. Significant ditching is also visible in this photo, particularly within the Rwy 4 End AOI; the northern part of this AOI has been cleared of vegetation. Little change at the Rwy 22 End is seen as compared to the 1951 photograph.

Several land use changes can be seen in the 1973 photograph. Runway 4/22 has been extended to its current length of 5,104 feet and a parallel taxiway accompanies the extended runway. A new unpaved road provides access to instrument landing lights for Runway 4. Along with the

runway extension and new access road, land at the end of Runway 4 has been cleared west of a north-south drainage ditch up to presumably a new perimeter fence. Lands outside of this clearing are primarily forested. A pipeline corridor is visible in this photo, running from east-to-west through the southern portion of the AOI. At the Rwy 22 End, forest canopy closure is progressing north of Smiths Creek Road.

Starting in 1978, woody encroachment appears to proceed in previously cleared areas at the runways ends, followed by evidence of clearing activities visible in 1985. Further canopy closure outside of cleared areas is seen in the 1985 photograph. Again, in the 1998 photograph, the runway end areas have been cleared within the perimeter fence and are now mostly devoid of woody cover. In the Runway 4 End AOI, lands beyond the perimeter fence have been cleared, nearly up to the pipeline corridor. At the Rwy 22 End, forest canopy closure is continuing north of Smiths Creek Road.

As seen in the 2006 through the 2022 photographs, lands within the perimeter fence have largely been maintained in a grassland state at the Runway 22 End AOI and to a lesser degree at the Runway 4 end. The Runway 4 end has seen cycles of woody growth followed by clearing throughout these years. Generally, lands outside of the perimeter fence at the Runway 4 end have reverted to a mixed grassland/shrubby habitat directly adjacent to the fence and further to the southwest mature forest has developed over most of the Airport's property.

During these years, area north of Smiths Creek Road has seen canopy closure outside of residential properties along the road. As seen in the 2022 photo, a private parcel at the northern extent of the Runway 22 End AOI was cleared.

Table 3 summarizes major land use changes, especially as it relates to tree clearing activities, within the project AOI documented by historic aerial photographs.

TABLE 3. MAJOR LAND USE CHANGES WITHIN THE AOI

Photo Year	Land use change
1951	Initial construction of the airport consisting of two runways and associated facilities
1967	Original Runways 4/22 and 10/28 were completed, vegetation clearing at the runways ends
1973	Runway 4/22 extended to current length, parallel taxiway constructed, runway light access road, and clearing to the perimeter fence; east-west pipeline corridor present
1978 - 1998	Cycles of growth and vegetation clearing established within the perimeter fence; first clearing of area outside of perimeter fence at the Runway 4 end in 1998
2006 - 2022	Continued vegetation maintenance at both runway ends within the perimeter fence; canopy closure north of Smiths Creek Road; clearing of private parcel at northern extent of the Runway 22 End AOI

(7) Atypical Conditions Analysis

The runways and taxiways were first constructed in the early 1950s. Significant ditching has altered hydrology at the Airport, especially at the Runway 4 end. Ongoing vegetation maintenance activities have occurred since that time. Area within the Airport's perimeter fence is regularly mowed and has experienced some or all of the following disturbances:

- Grading, leveling, filling, mixing, transportation, and compaction of native soils.
- Changes to topography and drainage patterns.
- Regular mowing and periodic clearing of woody cover.
- Alteration of drainage patterns and hydrological function with drainage ditch construction.

Area within the perimeter fence of both sections of the AOI is regularly mowed and has likely seen some of the landscape alterations identified above. The area to the southwest of the perimeter fence in the Runway 4 End AOI has seen less regular vegetative alteration and has reverted to a relatively natural state. Alteration of drainage patterns and hydrological function is evidenced by numerous drainage ditches extending throughout this part of the AOI.

At the Runway 22 end, regular vegetative maintenance occurs within the perimeter fence; this area is permanently maintained in a grassland state. Lands north of Smith Creek Road have experienced little vegetation maintenance since initial European settlement. Subsequent regrowth and canopy closure has occurred. Some altered drainage patterns were observed as evidenced by one drainage swale in the northern section of the AOI.

Despite the regular vegetative maintenance, vegetation at the time of field visits did have enough regrowth to make identification reliable or nearby unmown areas were used as reference. Normal circumstances were considered to be present due to the relatively long period of time since initial construction of the runways and taxiways and absence of current landscape alterations.

(8) Accessibility

Access to all areas within both sections of the AOI was not possible. A parcel access map is provided in Appendix A and shows inaccessible parcels. Where possible, areas were visually examined from ROWs or from adjacent Airport-owned property.

B. Findings

(1) Wetlands

A total of thirty-six (36) wetlands were delineated within the project AOI. Wetlands consist of five types: Emergent (PEM), Scrub-shrub (PSS), Forested (PFO), Shallow Marsh (PUB), and Excavated Ditch (RUBx) which are discussed below. The wetland boundary was highly reticulated and interconnected, with several large wetland complexes, the largest of which covers over 30 acres. In contrast, a number of wetlands occurred in small isolated depressions. Delineated wetlands are summarized in Table 4.

Due to the inaccessibility of some parcels within the project AOI, area on private property could not be field assessed. Therefore, nine (9) wetlands were estimated based on desktop data sources. Data sources included one-foot contours, soils, NWI mapping, and historic aerial photos. Additionally, field conditions observed from accessible adjacent parcels or ROWs and delineator experience supplemented the mapping of these wetlands. Estimated wetlands consist of the same five types as above (PEM, PSS, PFO, PUBHx, and RUBx) and generally are extensions to delineated wetlands. Two excavated ponds (PUBHx) were mapped based on NWI data. Estimated wetlands are summarized in Table 5.

Wetland boundary maps with sampling point locations and field photograph locations are presented in Appendix F followed by data sheets and field photographs in Appendices G and H, respectively. On wetland maps, estimated extensions to delineated wetlands and other estimated wetlands are labeled with an "X" and labels are shown in yellow. Delineated wetland labels are shown in white. Wetlands, including both delineated and estimated, are described in more detail in Appendix I.

TABLE 4. SUMMARY OF DELINEATED WETLANDS WITHIN THE AOI

Wetland ID	Cowardin Class	Dominant Vegetation	Total Area within AOI (sq. ft.)	Total Area within AOI (acres)
1	PEM	<i>Cornus amomum</i> (FACW), <i>Carex pellita</i> (OBL), <i>Carex flava</i> (OBL), <i>Salix petiolaris</i> (FACW), <i>Carex pellita</i> (OBL)	42,401.74	0.973
2	PEM	<i>Onoclea sensibilis</i> (FACW), <i>Carex pellita</i> (OBL)	982.62	0.023
3	PEM	<i>Phragmites australis</i> (FACW), <i>Onoclea sensibilis</i> (FACW), <i>Athyrium angustum</i> (FAC)	34,956.71	0.802
4	PEM	<i>Phragmites australis</i> (FACW)	13,955.26	0.320
5	PEM	<i>Fraxinus pennsylvanica</i> (FACW), <i>Cornus racemosa</i> (FAC), <i>Carex lupulina</i> (OBL), <i>Carex pellita</i> (OBL)	9,529.60	0.219
6	PEM	<i>Phragmites australis</i> (FACW)	19,502.24	0.448
7	RUBx/ PEM/PFO	<i>Alnus incana</i> (FACW), <i>Frangula alnus</i> (FAC), <i>Cladium mariscoides</i> (OBL), <i>Juncus dudleyi</i> (FACW), <i>Solidago rugosa</i> (FAC), <i>Vitis riparia</i> (FAC), <i>Acer rubrum</i> (FAC), <i>Betula papyrifera</i> (FACU), <i>Cephalanthus occidentalis</i> (OBL), <i>Phragmites australis</i> (FACW), <i>Phalaris arundinacea</i> (FACW)	110,073.26	2.527
8	RUBx/ PEM/PSS/ PUB	<i>Acer rubrum</i> (FAC), <i>Cephalanthus occidentalis</i> (OBL), <i>Frangula alnus</i> (FAC), <i>Phragmites australis</i> (FACW)	51,214.33	1.176
9	PFO	<i>Acer rubrum</i> (FAC), <i>Ulmus americana</i> (FACW), <i>Frangula alnus</i> (FAC), <i>Carex cristatella</i> (FACW)	78,377.92	1.799

Wetland ID	Cowardin Class	Dominant Vegetation	Total Area within AOI (sq. ft.)	Total Area within AOI (acres)
10	PFO	<i>Acer rubrum</i> (FAC), <i>Ulmus americana</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Quercus bicolor</i> (FACW), <i>Carex cristatella</i> (FACW), <i>Glyceria striata</i> (OBL), <i>Acer rubrum</i> (FAC), <i>Tilia americana</i> (FACU), <i>Fraxinus pennsylvanica</i> (FACW), <i>Carpinus caroliniana</i> (FAC), <i>Ribes cynosbati</i> (FACU), <i>Doellingeria umbellata</i> (FACW), <i>Fragaria virginiana</i> (FACU), <i>Acer rubrum</i> (FAC), <i>Populus deltoides</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Glyceria striata</i> (OBL), <i>Carex vulpinoidea</i> (OBL)	501,248.17	11.507
11	PFO	<i>Fraxinus pennsylvanica</i> (FACW), <i>Ulmus americana</i> (FACW), <i>Quercus bicolor</i> (FACW)	6,286.92	0.144
12	PFO	<i>Ulmus americana</i> (FACW), <i>Glyceria striata</i> (OBL)	8,181.24	0.188
13	PFO	<i>Fraxinus pennsylvanica</i> (FACW), <i>Glyceria striata</i> (OBL)	15,375.50	0.353
14	PSS	<i>Cornus racemosa</i> (FAC), <i>C. alba</i> (FACW), <i>C. amonum</i> (FAC)	10,159.61	0.233
15	PEM	<i>Phalaris arundinacea</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Phragmites australis</i> (FACW), <i>Symphytotrichum lanceolatum</i> (FACW), <i>Symphytotrichum novae-angliae</i> (FACW)	7,328.17	0.168
16	PEM	<i>Phalaris arundinacea</i> (FACW), <i>Phragmites australis</i> (FACW), <i>Symphytotrichum lanceolatum</i> (FACW)	3,688.89	0.085
17	PEM	<i>Phragmites australis</i> (FACW)	8,612.47	0.198
18	PUB, PEM, PFO, PSS	<i>Phalaris arundinacea</i> (FACW), <i>Athyrium angustum</i> (FAC), <i>Dichanthelium clandestinum</i> (FACW), <i>Phragmites australis</i> (FACW), <i>Phalaris arundinacea</i> (FACW), <i>Phragmites australis</i> (FACW), <i>Cladium mariscoides</i> (OBL), <i>Phalaris arundinacea</i> (FACW), <i>Populus tremuloides</i> (FAC), <i>Alnus incana</i> (FACW), <i>Onoclea sensibilis</i> (FACW), <i>Solidago rugosa</i> (FAC), <i>Pteridium aquilinum</i> (FACU), <i>Cornus alba</i> (FACW), <i>Carex pellita</i> (OBL), <i>Populus deltoides</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Cornus racemosa</i> (FAC), <i>Cephalanthus occidentalis</i> (OBL), <i>Salix interior</i> (FACW), <i>Poa pratensis</i> (FACU), <i>Solidago gigantea</i> (FACW), <i>S. canadensis</i> (FACU), <i>Populus deltoides</i> (FAC), <i>Salix discolor</i> (FACW), <i>Phragmites australis</i> (FACW), <i>Poa palustris</i> (FACW), <i>Equisetum hyemale</i> (FAC), <i>Populus deltoides</i> (FAC), <i>Acer rubrum</i> (FAC), <i>Carpinus caroliniana</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Calamagrostis canadensis</i> (OBL), <i>Symphytotrichum lanceolatum</i> (FACW), <i>Ranunculus hispidus</i> (FAC)	1,322,135.38	30.352
19	PFO	<i>Quercus bicolor</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Populus deltoides</i> (FAC), <i>Acer saccharinum</i> (FACW)	31,787.12	0.730
20	PFO	<i>Acer saccharinum</i> (FACW), <i>Populus deltoides</i> (FAC), <i>Quercus bicolor</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Onoclea sensibilis</i> (FACW)	7,938.28	0.182

Wetland ID	Cowardin Class	Dominant Vegetation	Total Area within AOI (sq. ft.)	Total Area within AOI (acres)
21	PFO	<i>Populus deltoides</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Carex intumescens</i> (FACW), <i>Symphytotrichum lateriflorum</i> (FAC), <i>Phragmites australis</i> (FACW)	21,085.17	0.484
22	PFO	<i>Acer saccharinum</i> (FACW), <i>A. rubrum</i> (FAC), <i>Ulmus americana</i> (FAC), <i>Quercus bicolor</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW)	16,719.29	0.384
23	PEM/PFO	<i>Acer rubrum</i> (FAC), <i>Quercus rubra</i> (FACU), <i>Fraxinus pennsylvanica</i> (FACW)	97,971.19	2.249
25	PEM/PFO/RUBx	<i>Carpinus caroliniana</i> (FAC), <i>Acer rubrum</i> (FAC), <i>Quercus rubra</i> (FACU), <i>Hamamelis virginiana</i> (FACU), <i>Osmundastrum cinnamomeum</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Thelypteris palustris</i> (FACW)	129,626.41	2.976
26	PFO	<i>Acer rubrum</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Ulmus americana</i> (FACW)	2,199.36	0.050
27	PFO	<i>Fraxinus pennsylvanica</i> (FACW), <i>Acer rubrum</i> (FAC), <i>Osmunda spectabilis</i> (OBL), <i>Carex crinita</i> (OBL)	22,577.58	0.518
28	PFO	<i>Acer rubrum</i> (FAC), <i>Ulmus americana</i> (FACW), <i>Osmunda spectabilis</i> (OBL)	2,085.02	0.048
29	PFO	<i>Acer rubrum</i> (FAC), <i>Quercus bicolor</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW)	8,832.76	0.203
30	PFO/PSS/PEM	<i>Acer rubrum</i> (FAC), <i>Populus deltoides</i> , <i>Iris virginica</i> (OBL), <i>Acer rubrum</i> (FAC), <i>Carpinus caroliniana</i> (FAC), <i>Hamamelis virginiana</i> (FACU), <i>Osmundastrum cinnamomeum</i> (FACW), <i>Populus tremuloides</i> (FAC), <i>Salix nigra</i> (OBL), <i>Poa pratensis</i> (FACU), <i>Doellingeria umbellata</i> (FACW), <i>Vitis riparia</i> (FAC)	405,401.58	9.307
31	PFO	<i>Acer rubrum</i> (FAC), <i>Prunus serotina</i> (FACU), <i>Fraxinus pennsylvanica</i> (FACW), <i>Solidago rugosa</i> (FAC), <i>Doellingeria umbellata</i> (FACW)	43,582.57	1.001
32	PFO/PSS	<i>Populus deltoides</i> (FAC), <i>Salix nigra</i> (OBL), <i>S. discolor</i> (FACW), <i>Equisetum pratense</i> (FACW), <i>Onoclea sensibilis</i> (FACW), <i>Phragmites australis</i> (FACW), <i>Doellingeria umbellata</i> (FACW), <i>Pteridium aquilinum</i> (FACU)	93,859.57	2.155
33	PFO	<i>Acer rubrum</i> (FAC), <i>Carex crinita</i> (OBL), <i>C. lupulina</i> (OBL), <i>Fraxinus pennsylvanica</i> (FACW)	49,360.00	1.133
35	PFO/PEM	<i>Acer rubrum</i> (FAC), <i>Prunus serotina</i> (FACU), <i>Hamamelis virginiana</i> (FACU), <i>Glyceria striata</i> (OBL), <i>Onoclea sensibilis</i> (FACW), <i>Carex intumescens</i> (FACW)	97,394.04	2.236
36	PFO	<i>Acer rubrum</i> (FAC), <i>Carpinus caroliniana</i> (FAC), <i>Osmunda spectabilis</i> (OBL)	20,438.94	0.469
37	RUBX	<i>Acer rubrum</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Solidago rugosa</i> (FAC), <i>Doellingeria umbellata</i> (FACW)	4,084.98	0.094
38	PFO	<i>Acer rubrum</i> (FAC), <i>Glyceria striata</i> (OBL), <i>Carex radiata</i> (FAC)	6,598.98	0.151
		Total Delineated	3,305,550.60	75.885

(a). Delineated Wetlands

As noted above, wetlands consist of five classes: Emergent (PEM), Scrub-shrub (PSS), Forested (PFO), Shallow Marsh (PUB), and Excavated Ditch (RUBx). These classes are discussed further below.

Emergent (PEM)

Emergent wetlands are concentrated in the regularly maintained portions of the project AOI. Wetlands 1 – 6, 15, 16 and 10B are located in the Rwy 22 End AOI. Wetlands 1 – 6 were within the regularly maintained area on the airfield, while Wetlands 15, 16, and 10B are ditch wetlands along Allen Road.

Emergent wetlands within the maintained area of Rwy 4 End AOI (Wetlands 7B, 8C, 17, 18A – C, 18J, 18M – O, and 23A), are emergent components of larger wetland complexes, including areas maintained along the pipeline corridor (Wetlands 25C, 18R, 35C, and 35D). Regular vegetation maintenance keeps these areas in a grassland/wet meadow plant community. In addition, Wetland 18 contains one large phragmites stand (Wetland 18P).

Vegetation within these emergent wetlands is dominated by graminoids with shrubs present in an arrested state due to regular mowing. Wetland sampling points DP1, 3, 5, and 7, taken in Wetlands 1, 5, and 6 within the Rwy 22 End AOI, contain a mix of graminoids including *Carex pellita* (woolly sedge: OBL), *Carex flava* (yellow-green sedge: OBL), *Phragmites australis* (common reed: FACW), *Carex lupulina* (hop sedge: OBL), and *Cladium mariscoides* (smooth saw-grass: OBL) along with a mix of shrubs including *Salix petiolaris* (meadow willow: FACW), *Cornus amomum* (silky dogwood: FACW), and *C. racemosa* (gray dogwood: FAC). *Onoclea sensibilis* (sensitive fern: FACW), *Athyrium angustum* (northern lady fern: FAC), and *Equisetum hyemale* (tall scouring-rush: FAC) comprised an abundant fern component and dominant forbs present included *Iris virginica* (Virginia blue-flag: OBL) and *Prunella vulgaris* (selfheal: FAC).

Within the Rwy 4 End AOI at Wetland sampling points DP21, 25, 27, and 33 (taken in Wetlands 7B, 18C, 18J, and 18O), the plant community was at times represented by elements of the tree and shrub strata as part of larger wetland complexes. Mowing operations limited to the edges of these larger complexes maintains portions of the complexes in emergent vegetation while woody growth over time in hard-to-maintain areas has advanced. Mowing operations are primarily limited by the amount of standing water present during the growing season in this part of the project AOI.

Dominant emergent vegetation at these wetland sampling points included common reed, *Phalaris arundinacea* (reed canary grass: FACW), smooth saw-grass, and woolly sedge. Other non-dominant species included *Typha angustifolia* (cattail: OBL), Virginia blue-flag, and northern lady fern.

Two larger wetland complexes extended into regularly maintained areas inside the fence and transitioned to emergent vegetation: Wetland 18N and Wetland 23A. No sampling points were taken in these wetlands. Wetland 18N is dominated by woolly sedge and common reed. Wetland 23A contains a wet meadow plant community consisting of common reed, woolly sedge, Virginia blue-flag, *Persicaria sp.* (smartweeds), and *Symphotrichum novae-angliae* (New England aster: FACW).

Scrub-shrub (PSS)

Present within both sections of the project AOI, scrub-shrub wetlands were dominated by willows and dogwoods, or saplings of various tree species. Wetlands 8B, 18D, 18I, 30C, 30D, and 32B are scrub-shrub dominated wetlands within the Rwy 4 End AOI and Wetland 14 is located in the Rwy 22 End AOI.

Wetland sampling points DP29, DP47, and DP49 document the scrub-shrub component of a large complex covering area both inside and outside of the perimeter fence. Wetland sampling point DP29 documents Wetland 18D. Wetland 18D, located inside of the perimeter fence as a fringe plant community in a somewhat higher landscape position in association with a large shallow marsh, is dominated by *Populus tremuloides* (quaking aspen: FAC) in the tree stratum and *Alnus incana* (speckled alder: FACW) in the shrub stratum. Other species in the shrub stratum included *Frangula alnus* (glossy buckthorn: FAC) and shoots of *Fraxinus pennsylvanica* (green ash: FACW). Dominant understory species included sensitive fern, *Solidago rugosa* (wrinkle-leaf goldenrod: FAC), and *Pteridium aquilinum* (bracken fern: FACU).

Wetland sampling points DP47 and DP49 document Wetland 18I, a large scrub-shrub complex stretching over 9.6 acres in size within the Rwy 4 End AOI. Wetland 18I is emblematic of the glacial lakeplain topography underlying the project AOI marked by shallow depressional pockets and slight rises, seasonally collecting runoff in the low areas. Some parts of this wetland have been hydrologically altered by ditching that drains on-airfield areas and are connected by culverts under two-track access roads located on sandier rises.

Dominant shrub species in Wetland 18I include young *Populus deltoides* (cottonwood: FAC) and green ash in the tree stratum and gray dogwood, *Cephalanthus occidentalis* (buttonbush: OBL), *Salix interior* (sandbar willow: FACW), and *Salix discolor* (pussy willow: FACW) in the shrub stratum. Speckled alder was also present in large stands in other areas of Wetland 18I.

Wetland 30C, located at a somewhat lower landscape position within Wetland 30A, and Wetland 30D both are covered by a mix of quaking aspen, *Salix nigra* (black willow: OBL), gray dogwood, and speckled alder. Similarly, Wetland 32B is covered by a shrubby mix of young cottonwood, black willow, and pussy willow.

Wetland 14, located just south of Smiths Creek Road within the Rwy 22 End AOI, is a small depressional area dominated by gray dogwood, red osier, and silky dogwood.

Forested (PFO)

Forested wetlands are delineated throughout the project AOI and in total cover approximately 35.5 acres of the AOI. Wetlands 9, 10A, 11, 12, and 13 are situated within the Rwy 22 End AOI north of Smiths Creek Road. These wetlands are documented by wetland sampling points DP9, DP11, DP13, and DP15. A mature mix of *Acer rubrum* (red maple: FAC), *Ulmus americana* (American elm: FACW), green ash, *Quercus bicolor* (swamp white oak: FACW), *Tilia americana* (basswood: FACU), *Carpinus caroliniana* (American hornbeam: FAC), and cottonwood (FAC) was present within these wetlands on topography marked by shallow depressional areas and slight rises.

Dominant understory species included *Carex cristatella* (crested sedge: FACW), *Carex vulpinoidea*

(fox sedge: OBL), *Glyceria striata* (fowl manna grass: OBL), *Ribes cynosbati* (Eastern Prickly Gooseberry: FACU), *Doellingeria umbellata* (flat-topped white aster: FACW), and *Fragaria virginiana* (wild strawberry: FACU).

Extensive hardwood forest areas are also present in the Rwy 4 End AOI. Wetlands 7, 18Q, 18S, 19 through 36 and 38 are either forested or have a forested component. Ten wetland sampling points document these wetlands: DPs 31, 35, 37, 39, 41, 43, 51, 53, 55, and 59. Red maple is a prominent component of all of these wetlands along with *Acer saccharinum* (silver maple: FACW), green ash, cottonwood, swamp white oak, American hornbeam, quaking aspen, black willow, and *Quercus rubra* (red oak: FACU). American elm is a minor component of the tree stratum in many of these wetlands.

The shrub layer is often limited to saplings of the dominant trees at most wetland sampling points or absent altogether. The herbaceous layer is dominated by *Carex intumescens* (bladder sedge: FACW), *Symphyotrichum lateriflorum* (Farewell-summer: FAC), common reed, sensitive fern, *Carex crinita* (fringed sedge: OBL), hop sedge, *Osmundastrum cinnamomeum* (cinnamon fern: FACW), flat-topped white aster, fowl manna grass, wrinkle-leaf goldenrod, *Calamagrostis canadensis* (bluejoint: OBL), *Symphyotrichum lanceolatum* (white panicked American-Aster: FACW), *Ranunculus hispidus* (bristly buttercup: FAC), and *Thelypteris palustris* (eastern marsh fern: FACW).

Shallow Marsh (PUB)

Two wetlands contain areas of shallow marsh: Wetlands 8A and 18E. Wetland sampling point DP17 taken in Wetland 8A shows an herb stratum completely dominated by common reed, a shrub layer dominated by buttonbush and glossy buckthorn, and a fringe of red maple on the depression's side slopes with the AOI boundary. At the time of the field visit in October 2022 under drier than normal climatic conditions, a water table was not found.

The far larger shallow marsh in Wetland 18E is dominated by common reed and at multiple field visits under varying climatic conditions consistently contained standing water.

Excavated Ditch (RUBx)

Several constructed ditches were delineated as components of larger wetland complexes: Wetlands 7C, 8D, and 25F. Wetland 37 is the southern end of a constructed ditch that drains along the western edge of airport property in the Rwy 4 End AOI.

Wetland sampling point DP19 taken within Wetland 7C is indicative of the ditches within the airfield. At the time of the field visit, climatic conditions were drier than normal and standing water was observed throughout this portion of a larger ditch that drains the western side of the airport and carries flows southward to the Moak Drain. The ditch was fully vegetated with a diverse herbaceous stratum dominated by smooth saw-grass, wrinkle-leaf goldenrod, and *Juncus dudleyi* (Dudley's Rush: FACW) and shrub stratum dominated by speckled alder and glossy buckthorn.

Wetland 25F is a portion of the Moak Drain within the Rwy 4 End AOI. This portion of the steep-sided drain is 8 – 10 feet deep and 10 – 15 feet wide. Near its passage under Gratiot Ave, the ditch

also receives drainage flows from the north via Wetland 25D and from the west through Wetland 25E. Wetland 27 is connected to Wetland 25E via a culvert under a two-track access road.

(b). Estimated Wetlands

On private parcels within the project AOI segments that were inaccessible at the time of field work, wetland areas were estimated. Nine (9) wetlands were estimated based on desktop data sources and/or on field conditions observed from accessible adjacent parcels or ROWs. Data sources included one-foot contours, soils and NWI mapping, and historic aerial photos. Additionally, delineator experience supplemented the mapping of these wetlands.

Estimated wetlands consist of the same five classes as above (PEM, PSS, PFO, PUBHx, and RUBx) and generally are extensions to delineated wetlands. It is assumed that similar plant communities will be present in estimated wetlands that have been extended from delineated wetlands. Examination of aerial photos provides evidence of assigned wetland classes. Two excavated ponds (PUBHx) were mapped based on NWI data: Wetlands 13(X)C and 34(X). Estimated wetlands are summarized in Table 5.

TABLE 5. SUMMARY OF ESTIMATED WETLANDS WITHIN THE AOI

Wetland ID	Cowardin Class	Total Area within AOI (sq. ft.)	Total Area within AOI (acres)
9(X)	PFO	108,420.84	2.489
13(X)	PFO/PUBHx	301,086.72	6.912
24(X)	RUBx	18,948.60	0.435
25F(X)	RUBx	2,178.00	0.050
30(X)	PEM/PSS/PFO	779,114.16	17.886
34(X)	PUBHx	6,577.56	0.151
35(X)	PEM/PFO	48,177.36	1.106
36(X)	PFO	17,162.64	0.394
37(X)	RUBx	10,454.40	0.240
	Total Estimated	1,292,120.28	29.664

(c). Wetland Hydrology

During the first field visit (August 16 – 23, 2022), climatic conditions were within normal range and about an inch of rain was recorded while on site. Wetland sampling points taken during this field visit all satisfied the wetland hydrology criterion with observation of Geomorphic Position (D2) and positive FAC-Neutral Test (D5). A combination of primary hydrology indicators including Water Marks (B1), Sparsely Vegetated Concave Surface (B8), and/or Water-Stained Leaves (B9) were observed in forested areas north of Smiths Creek Road along with Moss Trim Lines (B16), a secondary hydrology indicator. Crayfish Burrows (C8), a secondary hydrology indicator, was observed at all of the sampling points taken in the mowed area within the Rwy 22 End AOI (Wetlands 1, 5 and 6).

Sampling points taken during the second site visit (October 3 – 7, 2022) under drier than normal climatic conditions and little rain during the field visit primarily satisfied the wetland hydrology criterion with observation of Geomorphic Position (D2) and positive FAC-Neutral Test (D5). Flowing water was found in the ditch portion of Wetland 7 and satisfied primary indicators Surface Water (A1), High Water Table (A2), and Saturation (A3).

Crayfish Burrows (C8) were also observed in low areas in mowed infield areas in the Rwy 4 End AOI (Wetlands 18J and 18O). In woody areas (Wetlands 18D and 23B) primary hydrology indicators Water Marks (B1), Sparsely Vegetated Concave Surface (B8), and Water-Stained Leaves (B9) were also observed.

Approximately 1.7 inches of precipitation was recorded during the June 6 –14, 2023 visit under normal climatic conditions. Under these conditions, the presence of wetland hydrology was directly observed as Saturation (A3) supported by a Dry-Season Water Table (C2). Again, secondary indicators Geomorphic Position (D2) and positive FAC-Neutral Test (D5) were satisfied at all sampling points taken during this field visit.

Finally, on the last field visit (September 25 – October 4, 2023) under wetter than normal climatic conditions and little recorded precipitation (~ 0.5 inches) during the site visit, the wetland hydrology criterion was satisfied by direct observation of High Water Table (A2) and Saturation (A3) at all sampling points taken. Additionally, secondary hydrology indicators Geomorphic Position (D2) and positive FAC-Neutral Test (D5) were satisfied at all sampling points taken during this field visit. In wooded areas, primary indicator Water-Stained Leaves (B9) was satisfied in Wetlands 35B and 18Q.

In summary, over multiple field visits to this site, wetland hydrology was either directly observed or indicated. Wetland hydrology is supported by a generally high water table on poorly drained soils in low areas within an undulating lakeplain landscape. Significant ditching on airport property has not consistently lowered the water table; vegetation maintenance operations requiring dry soil conditions can sometimes only be done during late fall and winter in some areas at the airport and results in less frequent mowing than desired.

(d). Hydric Soils

Hydric soil indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3) were satisfied quite often together or sometimes individually throughout the project AOI. The Sandy Redox (S5) and High Chroma Sands (S11) indicators were often met in combination on soils from the Wainola-Deford fine sands map unit.

In sampled forested areas (Wetlands 18Q, 25A, 30A, 30B, 31, 33, and 35B) the hydric soil criterion often was satisfied by the Sandy Mucky Mineral (S1) and Dark Surface (S7) indicators on soils mapped from the partially hydric Allendale-Latty complex (0 to 3 percent slopes). Texture was determined in the field using guidance provided in the regional supplement (USACE, 2012).

(2) Streams/Ditches

Table 6 presents a summary of both delineated and estimated streams within the project AOI. Wetland ditches 15 and 16 north of Smiths Creek Road are roadside ditches along Allen Road and are not included in this summary.

The streams below are steep-sided excavated ditches that convey drainage from airport property ultimately to the Moak Drain or are parts of the Moak Drain itself. Slow flowing water was found in these ditches at multiple site visits. Wetland 37(X) was observable from airport property and was approximately 10 - 15 feet wide with water to an unknown depth, likely more than two feet deep.

TABLE 6. SUMMARY OF STREAMS/DITCHES IN THE AOI

Wetland ID	Comment	Cowardin Class	Total Length within AOI (linear ft)
7C	Delineated	RUBx	1,747.78
8D	Delineated	RUBx	535.58
24(X)	Estimated	RUBx	1,374.13
25F(X)	Estimated; Moak Drain	RUBx	133.39
25F	Delineated; Moak Drain	RUBx	1,062.03
37	Delineated	RUBx	273.73
37(X)	Estimated	RUBx	1,036.00
	Total		6,162.64

(3) Uplands

Uplands within the AOI consist of a mixture of managed areas and undeveloped lands. Managed areas are covered by a mixture of native graminoids and common forbs. Undeveloped lands consist of several large areas of moist woods and unmaintained grasslands.

Dominant herbaceous vegetation found at upland sampling points within the AOI included fescues, Kentucky and flat-stem blue grasses, little blue stem, goldenrods, wild strawberry, bracken fern, Eastern teaberry, and Queen Anne's-Lace. Honeysuckle, glossy buckthorn, and autumn olive were found in the shrub layer while the tree stratum was dominated by black cherry, red maple, paper birch, white pine, witch-hazel, American hornbeam, both quaking and big tooth aspens, and red oak. Woody vines were absent at most upland sampling points except north of Smiths Creek Road where Oriental bittersweet was found in abundance.

Transition to uplands was marked by topographic changes of as little as one to two feet along shallow depressional basins or more abrupt topographic changes along steep ditch profiles. A lack of wetland hydrology indicators and/or an absence of hydric soil indicators also contributed to the wetland-upland boundary determination as hydrophytic vegetation often crossed the boundary in moist forested areas. Table 7 lists the dominant species found at upland sampling points and others observed in uplands while on site.

TABLE 7. UPLAND SPECIES OBSERVED WITHIN THE AOI

Scientific Name and Indicator	Common Name	Habit
Dominant Species at Sampling points		
<i>Pteridium aquilinum</i> (FACU)	Bracken fern	fern
<i>Aralia nudicaulis</i> (FACU)	Wild sarsaparilla	forb
<i>Circaea canadensis</i> (FACU)	Enchanter's nightshade	forb
<i>Daucus carota</i> (UPL)	Queen Anne's-Lace	forb
<i>Euthamia graminifolia</i> (FAC)	Flat-Top goldenrod	forb
<i>Fragaria virginiana</i> (FACU)	Wild strawberry	forb
<i>Gaultheria procumbens</i> (FACU)	Eastern teaberry	forb
<i>Hydrophyllum virginianum</i> (FAC)	Shawnee-Salad (Virginia waterleaf)	forb
<i>Maianthemum canadense</i> (FACU)	False Lily-of-the-Valley	forb
<i>Medeola virginiana</i> (FACU)	Indian cucumber-root	forb
<i>Solidago rugosa</i> (FAC)	Wrinkle-Leaf goldenrod	forb
<i>Solidago speciosa</i> (UPL)	Showy goldenrod	forb
<i>Symphotrichum ericoides</i> (FACU)	White Heath American-Aster	forb
<i>Festuca rubra</i> (FACU)	Red fescue	graminoid
<i>Poa compressa</i> (FACU)	Flat-Stem blue grass	graminoid
<i>Poa pratensis</i> (FACU)	Kentucky blue grass	graminoid
<i>Cornus racemosa</i> (FAC)	Gray dogwood	shrub
<i>Elaeagnus umbellata</i> (UPL)	Autumn olive	shrub
<i>Frangula alnus</i> (FAC)	Glossy buckthorn	shrub
<i>Lonicera x bella</i> (FACU)	Japanese honeysuckle	shrub
<i>Ribes cynosbati</i> (FACU)	Eastern Prickly Gooseberry	shrub
<i>Rosa multiflora</i> (FACU)	Multiflora rose	shrub
<i>Viburnum lentago</i> (FAC)	Nanny-Berry	shrub
<i>Acer rubrum</i> (FAC)	Red maple	tree
<i>Betula papyrifera</i> (FACU)	Paper birch	tree
<i>Carpinus caroliniana</i> (FAC)	American Hornbeam	tree
<i>Hamamelis virginiana</i> (FACU)	American Witch-Hazel	tree
<i>Pinus strobus</i> (FACU)	White pine	tree
<i>Pinus sylvestris</i> (UPL)	Scotch pine	tree
<i>Populus grandidentata</i> (FACU)	Big tooth aspen	tree
<i>Populus tremuloides</i> (FAC)	Quaking aspen	tree
<i>Prunus pensylvanica</i> (FACU)	Fire Cherry	tree
<i>Prunus serotina</i> (FACU)	Black cherry	tree
<i>Quercus rubra</i> (FACU)	Red Oak	tree
<i>Sassafras albidum</i> (FACU)	Sassafras	tree
<i>Tilia americana</i> (FACU)	Basswood/Linden	tree
<i>Celastrus orbiculatus</i> (FACU)	Oriental bittersweet	vine
<i>Parthenocissus quinquefolia</i> (FACU)	Virginia-Creeper	vine
Non-dominant Species at Sampling Points and field observed		
<i>Equisetum hyemale</i> (FAC)	Tall Scouring-Rush	fern
<i>Achillea millefolium</i> (FACU)	Common yarrow	forb
<i>Aletris farinosa</i> (FAC)	White Colicroot	forb
<i>Asclepias syriaca</i> (UPL)	Common milkweed	forb

Scientific Name and Indicator	Common Name	Habit
<i>Centaurea stoebe</i> (UPL)	Spotted knapweed	forb
<i>Cirsium arvense</i> (FACU)	Canadian thistle	forb
<i>Crepis tectorum</i> (UPL)	Hawk's beard	forb
<i>Eurybia macrophylla</i> (FAC)	Large-Leaf Wood-Aster	forb
<i>Leucanthemum vulgare</i> (FACU)	Ox-Eye Daisy	forb
<i>Lotus corniculatus</i> (FACU)	Bird's foot trefoil	forb
<i>Nabalus albus</i> (FACU)	White Rattlesnake-Root	forb
<i>Oxalis stricta</i> (FACU)	Yellow Wood-Sorrel	forb
<i>Pedicularis canadensis</i> (FACU)	Common lousewort	forb
<i>Persicaria virginiana</i> (FAC)	Jumpseed	forb
<i>Plantago lanceolata</i> (FACU)	English Plantain	forb
<i>Potentilla simplex</i> (FACU)	Oldfield Cinquefoil	forb
<i>Rudbeckia hirta</i> (FACU)	Black-Eyed-Susan	forb
<i>Solidago canadensis</i> (FACU)	Canada goldenrod	forb
<i>Taraxacum officinale</i> (FACU)	Dandelion	forb
<i>Trifolium pratense</i> (FACU)	Red clover	forb
<i>Dichanthelium latifolium</i> (FACU)	Broad-Leaf rosette grass	graminoid
<i>Elymus hystrix</i> (FACU)	Eastern Bottle-brush grass	graminoid
<i>Festuca trachyphylla</i> (UPL)	Sheep fescue	graminoid
<i>Schizachyrium scoparium</i> (FACU)	Little bluestem	graminoid
<i>Actaea rubra</i> (FACU)	Red baneberry	shrub
<i>Berberis thunbergii</i> (FACU)	Japanese Barberry	shrub
<i>Hypericum prolificum</i> (FACU)	Shrubby St. John's-Wort	shrub
<i>Rubus occidentalis</i> (UPL)	Black raspberry	shrub
<i>Pinus resinosa</i> (FACU)	Red pine	tree

(4) Invasive species

A number of invasive plants were observed in both wetlands and uplands. Two restricted species found in wetlands were *Lythrum salicaria* (purple loosestrife) and common reed. Large patches of common reed were seen throughout the project AOI in non-forested locales. Reed canary grass was also present.

Glossy buckthorn was abundant in the Rwy 22 End AOI along with *Celastrus orbiculatus* (Oriental bittersweet) and *Rosa multiflora* (Multiflora rose). Multiflora rose was found sporadically in this AOI. None of these species are regulated.

Upland invasive species included *Elaeagnus umbellata* (Autumn olive), *Berberis thunbergii* (Japanese barberry), Oriental bittersweet, and *Centaurea stoebe* (spotted knapweed). Autumn olive is restricted in Michigan while the other species are not currently regulated in Michigan.

(5) Wildlife observed

During site visits, the following wildlife were directly observed or noted by other indications such as scat or calls.

- Great blue heron (*Ardea herodias*)
- Killdeer (*Charadrius vociferus*)
- Purple martin (*Progne subis*)
- Hawks (*Buteo* sp.)
- Red-winged blackbird (*Agelaius phoeniceus*)
- Turkey vulture (*Cathartes aura*)
- American woodcock (*Scolopax minor*)
- Northern flicker (*Colaptes auratus*)
- Crow (*Corvus brachyrhynchos*)
- House sparrow (*Passer domesticus*)
- Canada goose (*Branta canadensis*)
- Turkey (*Meleagris gallopavo*)
- White-tailed deer (*Odocoileus virginianus*)
- Painted turtle (*Chrysemys picta*)
- Garter snake (*Thamnophis sirtalis sirtali*)
- Pickerel frog (*Lithobates palustris*)
- Spring peeper (*Pseudacris crucifer*)
- Monarch butterfly (*Danaus plexippus*)
- Bumblebee (*Bombus* sp.)

(6) Summary

In summary, thirty-six (36) separate wetland boundaries were delineated within the AOI on airport property and are documented by sixty (60) sampling points. Five wetland classes are represented: Emergent (PEM), Scrub-shrub (PSS), Forested (PFO), Shallow Marsh (PUB), and Excavated Ditch (RUBx). Several large multi-class wetland complexes were delineated ranging in size from a little over an acre to more than 30 acres. Of these thirty-six wetlands, four (4) streams/excavated ditches were delineated on airport property as part of larger wetland complexes.

Due to the inaccessibility of private parcels within the project AOI, areas on private property could not be field assessed on foot. Therefore, nine (9) wetlands were estimated based on desktop data sources. Estimated wetlands consist of the same five classes as above (PEM, PSS, PFO, PUBHx, and RUBx) and generally are extensions to delineated wetlands. Two excavated ponds (PUBHx) were mapped based on NWI data. Within these nine estimated wetlands, three (3) streams were estimated using multiple desktop data sources.

About 88.3% of the AOI is covered by soil units rated as partially hydric. Most of the project AOI is covered by level to slightly sloped soils on slopes ranging from 0 to 6 percent that reflects the varied topography found within the project area: the higher knolls are dominated by the deep, somewhat poorly drained sandy soils of the Allendale series and the lower landscape positions within drainageways and depressions contain very poorly drained clay loams, silty clay loams, or silty clays. Wetland hydrology is supported by a generally high water table on poorly drained soils in low areas within an undulating lakeplain landscape.

The wetland boundaries were determined by the observation of multiple indicators of wetland hydrology associated with wetland vegetation on soils satisfying the Depleted Below Dark Surface (A11), Sandy Mucky Mineral (S1), Sandy Redox (S5), Dark Surface (S7), High Chroma Sands (S11), Depleted Matrix (F3), Redox Depressions (F8), and Redox Dark Surface (F6) hydric soil indicators in wetlands.

Wetland hydrology was directly observed as Surface Water (A1), High Water Table (A2), and Saturation (A3). Other primary hydrology indicators observed in wetlands included Water Marks (B1), Sparsely Vegetated Concave Surface (B8), and Water-Stained Leaves (B9). Secondary hydrology indicators of Geomorphic Position (D2) and a positive FAC-Neutral Test (D5) were satisfied at all sampling points. Other secondary hydrology indicators observed included Moss Trim Lines (B16), Dry-Season Water Table (C2), and Crayfish Burrows (C8).

The boundary determinations primarily relied on the lack of wetland hydrology indicators and on an absence of hydric soil indicators; often hydrophytic vegetation crossed the boundary in moist wooded plant communities. Topographic changes related to ditch slopes, sometimes on steep gradients, or shallow depressional basins also aided the boundary determination.

5. Conclusions

A total of thirty-six (36) separate wetland boundaries and one stream enclosing 75.885 acres were delineated within both sections of the project AOI. Nine (9) wetland boundaries enclosing an additional 29.664 acres were estimated on inaccessible private parcels. These estimated wetlands will need to be field verified prior to any permit applications. A total of seven (7) streams/excavated ditches totaling 6,162.64 feet in length were delineated and estimated within the project AOI. A jurisdictional determination for these wetlands may be needed from the EGLE. A Part 303, PA451 wetland fill permit from the EGLE may be needed for any impacts from activities within jurisdictional wetland boundaries. Independent review by local land use authorities and adoption of the wetland boundaries under shoreland/wetland zoning ordinances may also be required. Final authority over the project rests with the above federal, state, and local agencies.

The wetland and water boundaries established by this work are valid only for the subject project and any use or interpretation of its findings for areas outside the project area of interest is not supported. The user of this wetland boundary report is advised that changing environmental conditions may affect the future validity of the wetland boundaries so established.

6. Certifications and Limitations

The undersigned does hereby certify and state that she is an employee of Mead & Hunt, Inc., that she has been designated as being in responsible charge of the delineation of wetlands described herein; and that this delineation was performed in accordance with the USACE *1987 Wetland Delineation Manual* as enhanced by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (USACE, 2012).

This wetland delineation report documents vegetation, soils, and hydrology conditions on the above-referenced parcel according to these standard accepted practices, and the wetland boundary so established is valid only for the designated area. No uses or interpretations of wetland conditions or boundaries outside of the work area are supported by this work.

The mapped wetland boundaries are valid under the environmental conditions existing at the time of delineation. The user of this information is hereby notified that changing environmental conditions may affect the future validity of the wetland boundary.

MEAD & HUNT, Inc.



Brauna Hartzell
Wetland Ecologist & GIS Analyst

Date: January 2025

7. References

- Climate Data and Summary Reports from AgACIS, Monthly Summary of Climatological Data. Port Huron, MI. Data accessed at <http://agacis.rcc-acis.org/>. Accessed October 2023.
- Michigan Department of the Environment, Great Lakes, and Energy (EGLE), 2024. Michigan EGLE Wetlands Map Viewer available online at <https://www.mcgi.state.mi.us/wetlands/mcgiMap.html>. Accessed December 2024.
- Michigan Natural Features Inventory (MNFI), 2024. Michigan Circa 1800 Viewer available at <https://mnfi.maps.arcgis.com/apps/webappviewer/index.html?id=bbdca9029f184571bd0369cb4aa90cd2>. Accessed January 2024.
- State of Michigan Imagery service, 2024. Compiled aerial images accessed as a GIS map service at <https://imagery.michigan.gov/server/rest/services/>. Accessed January 2024.
- Soils Survey of St. Clair County, MI. U.S. Department of Agriculture (USDA), Natural Resources Conservation Service, *Web Soil Survey* available online at <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed September 2022.
- St. Clair County, 2024. *Airport History Past and Future*. Web page accessed at <https://legacy.stclaircounty.org/offices/airport/PastFuture.aspx>. Accessed December 2024.
- U.S. Army Corps of Engineers (USACE), 2012. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0), ed. J.S. Wakely, R.W. Lichvar, C.V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- U.S. Army Corps of Engineers, 2023. *National Wetland Plant List*, version 3.6. Accessed at <http://wetland-plants.usace.army.mil/>. U.S. Army Engineer Research and Development Center, Vicksburg, MS.
- U.S. Department of Agriculture, Farm Service Administration (FSA), National Agriculture Imagery Program (NAIP), 2024. Accessed as a GIS map service at <https://gis.apfo.usda.gov/arcgis/rest/services>.
- U.S. Department of Agriculture, Natural Resource Conservation Service (USDA, NRCS), 2018. *Field Indicators of Hydric Soils in the United States*, Version 8.2, ed. L.M. Vasilas and J.F. Berkowitz. USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.
- U.S. Fish and Wildlife Service, 2023. *Wetlands Mapper*. National Wetlands Inventory mapping available online at <https://fwprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>. Accessed December 2023.

U.S. Environmental Protection Agency, 2007. *Michigan Level III and IV Ecoregion Descriptions*.
Downloaded from https://gaftp.epa.gov/epadatacommons/ORD/Ecoregions/mi/MI_DRAFT_Desc-Issues12-27-07.pdf. Accessed January 2024.

U.S. Geological Survey (USGS), EarthExplorer, 2024. Accessed at [EarthExplorer \(usgs.gov\)](https://earthexplorer.usgs.gov). January 2024.

Wayne State University Library, 2024. *DTE Aerial Photograph, St. Clair County, 1985, Section 1488-15-71*.
Data obtained from <https://wayne.contentdm.oclc.org/digital/collection/dte-aerial>. Accessed December 2024.

8. List of Preparers/Contributors

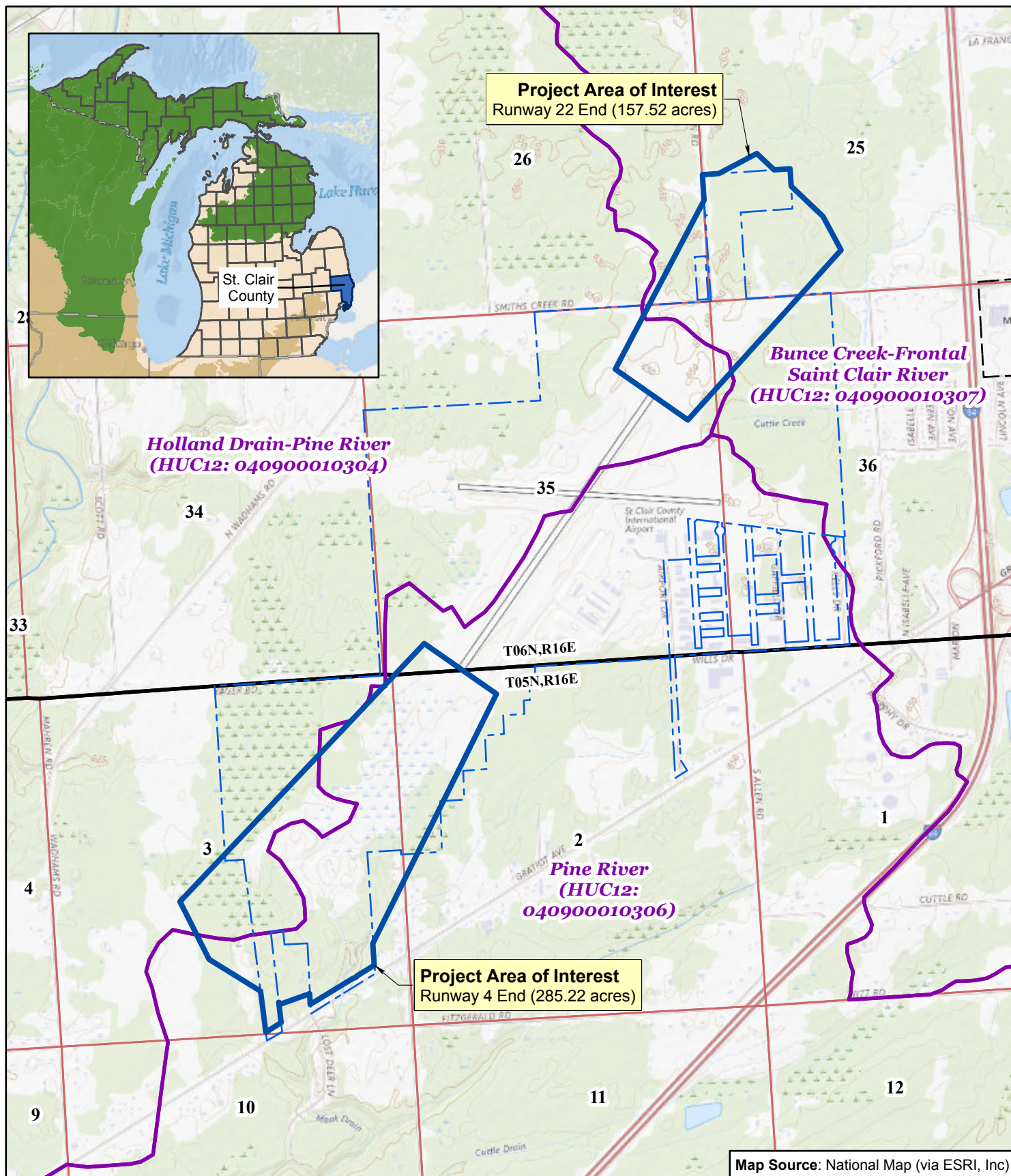
The preparer of this document is:

Brauna Hartzell, GISP, PWS
2440 Deming Way, Middleton, WI 53562
Mead & Hunt, Inc.

Contributors to this document include:

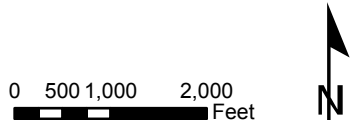
Caroline Bruchman and Kim Shannon
Mead & Hunt, Inc.

Appendix A Project Location and Parcel Accessibility Maps



PROJECT LOCATION MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

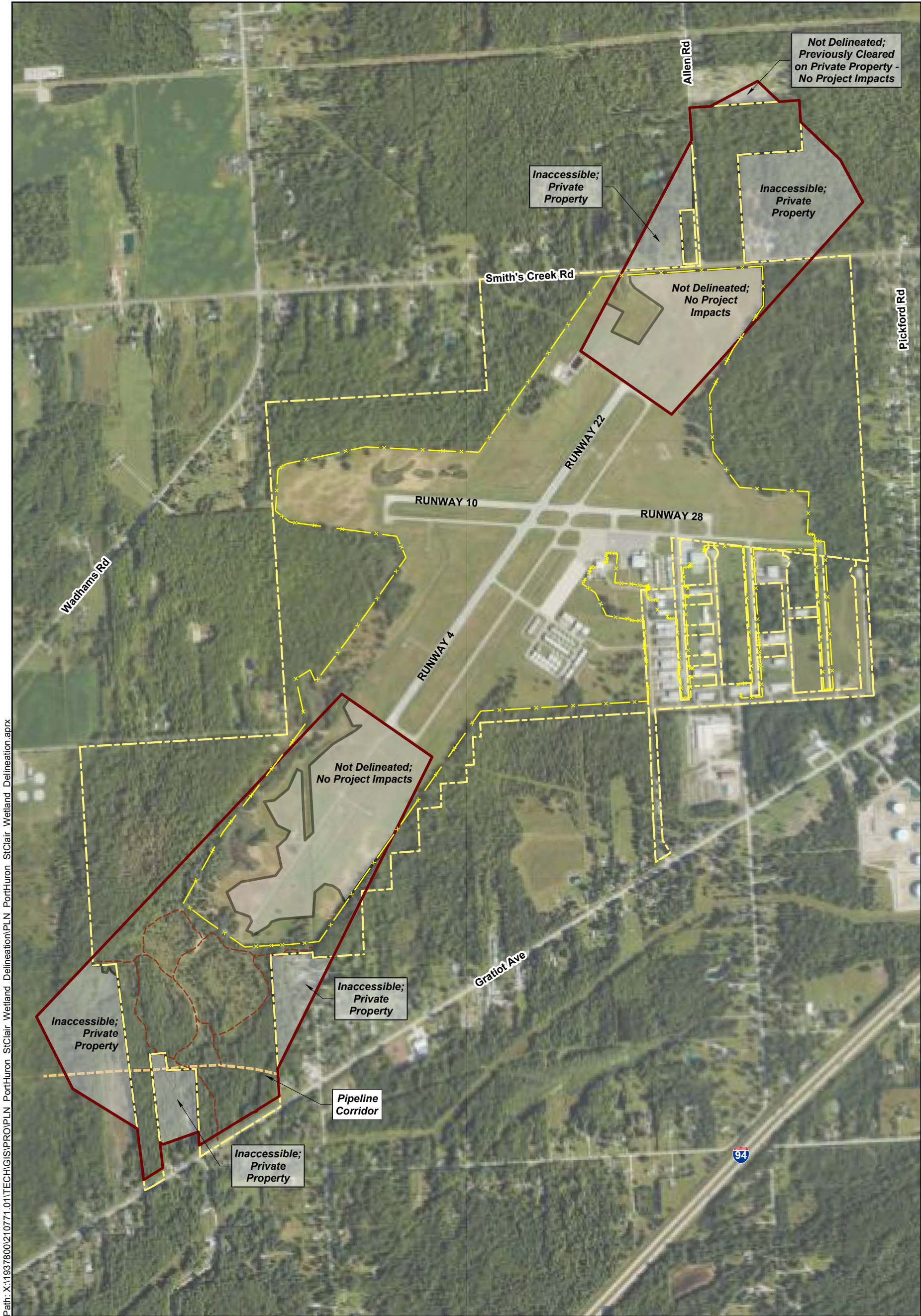


Legend

- Project Area of Interest (AOI)
 - Airport Property Boundary
 - Major Watershed
 - County Line
 - Municipal Boundary
 - PLSS Section Line
 - PLSS Township Line
- LAND RESOURCE REGION**
- K
 - L
 - M

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



Parcel Accessibility Map
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



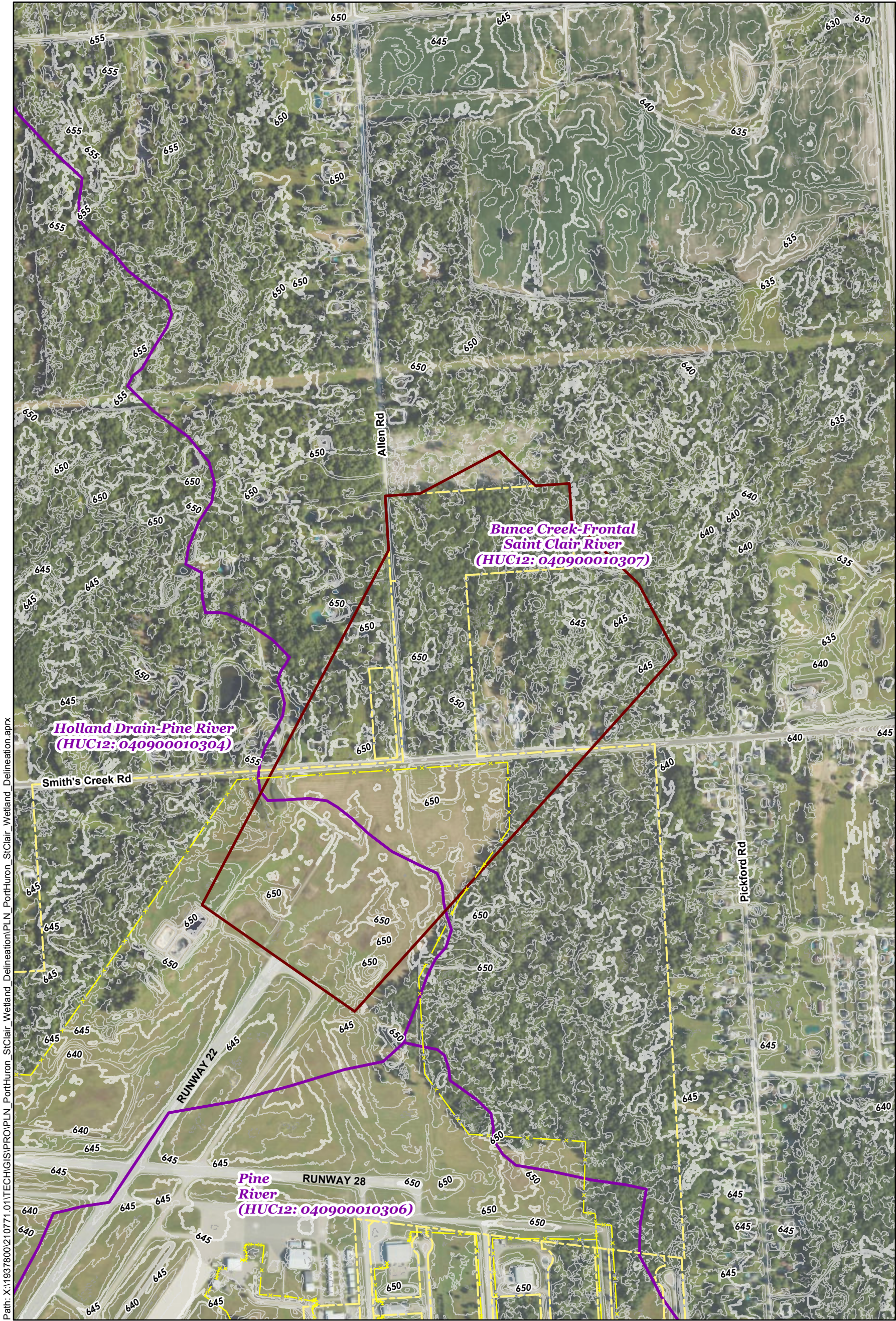
LEGEND

- | | |
|--------------------------------|---------------------------|
| Project Area of Interest (AOI) | Airport Property Boundary |
| Area not Delineated | Pipeline Corridor |
| Existing Fence | Two-track |

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

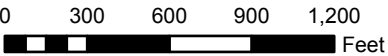
Appendix B Topography and NRCS Soils Mapping



TOPOGRAPHY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Runway 22 End



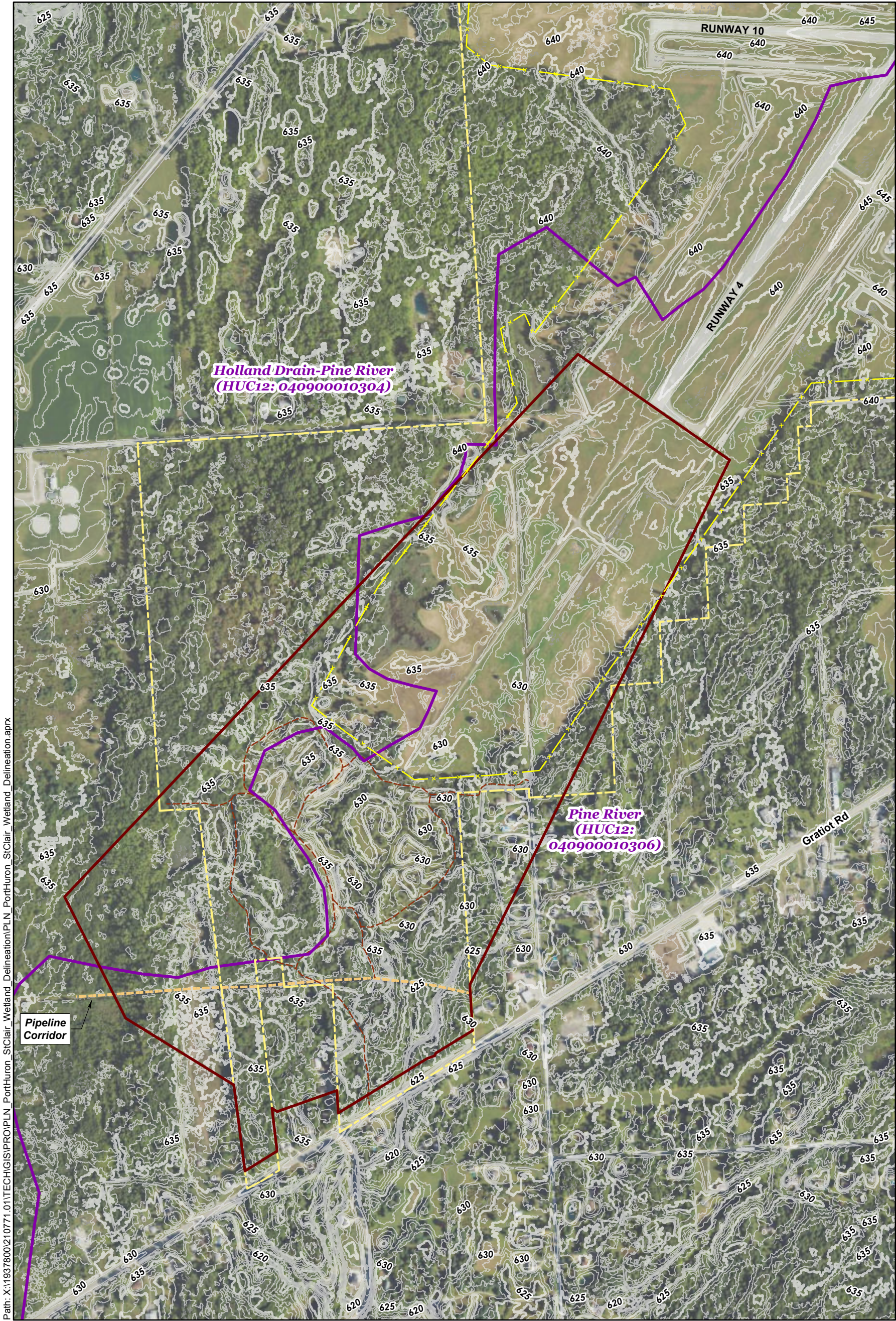
Legend

- | | | | |
|--|--------------------------------|--|-------------------------|
| | Project Area of Interest (AOI) | | Index |
| | Existing Fence | | Index Depression |
| | Airport Property Boundary | | Intermediate |
| | Major Watershed | | Intermediate Depression |
| | Pipeline Corridor | | |
| | Two-track | | |

Data Sources
1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semcog.org/>)
2. Image Source: FSA NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_PortHuron_StClair_Wetland_Delineation\PLN_PortHuron_StClair_Wetland_Delineation.aprx

TOPOGRAPHY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Runway 4 End

0 300 600 900 1,200
Feet



Legend

- Project Area of Interest (AOI)
- Existing Fence
- Airport Property Boundary
- Major Watershed
- Pipeline Corridor
- Two-track

Contour Type

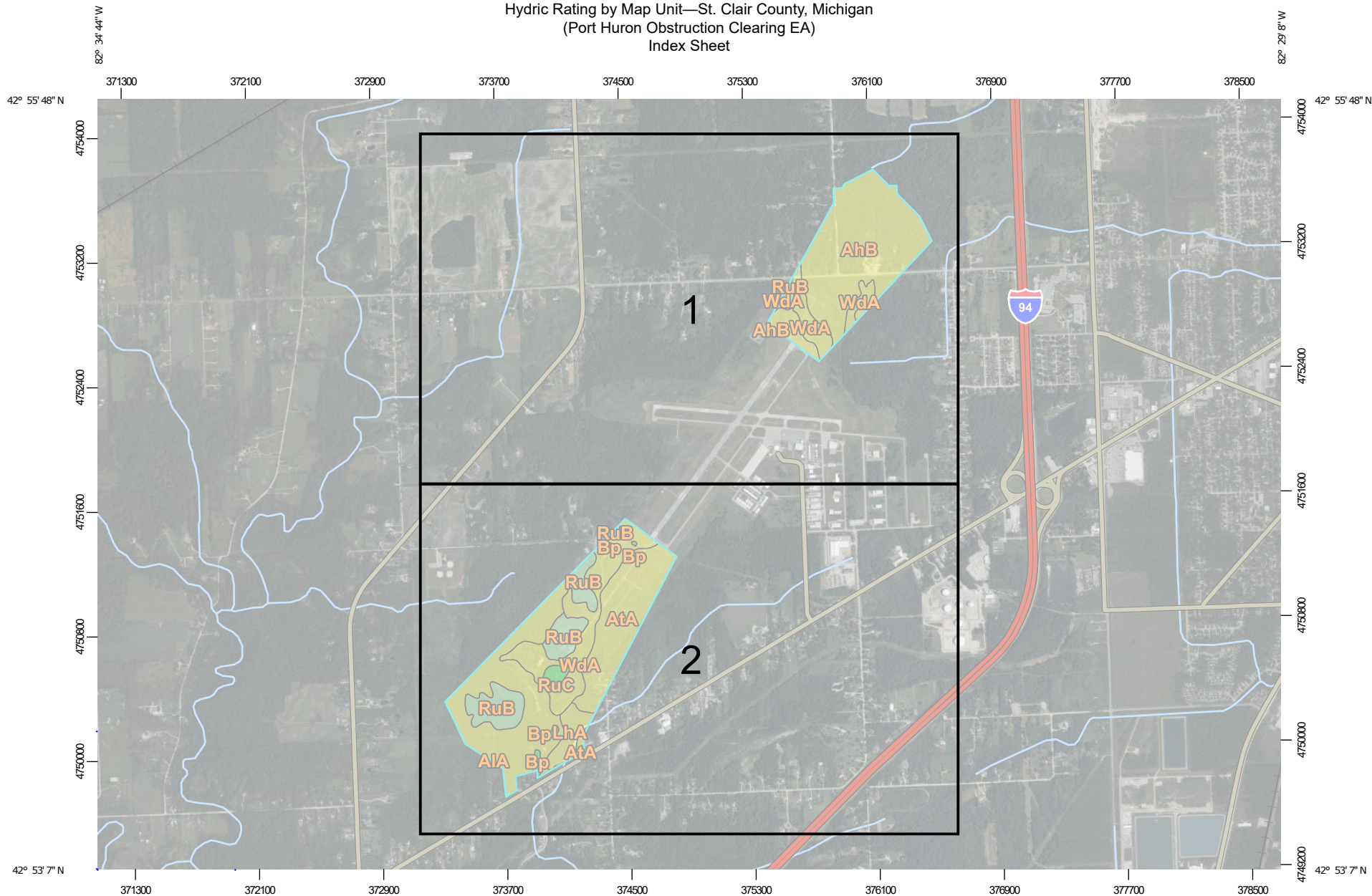
- Index
- Index Depression
- Intermediate
- Intermediate Depression

Data Sources
1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semcog.org/>)
2. Image Source: FSA NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

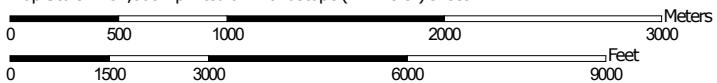
PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Hydric Rating by Map Unit—St. Clair County, Michigan (Port Huron Obstruction Clearing EA) Index Sheet



Map Scale: 1:34,800 if printed on A landscape (11" x 8.5") sheet.



Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 17N WGS84

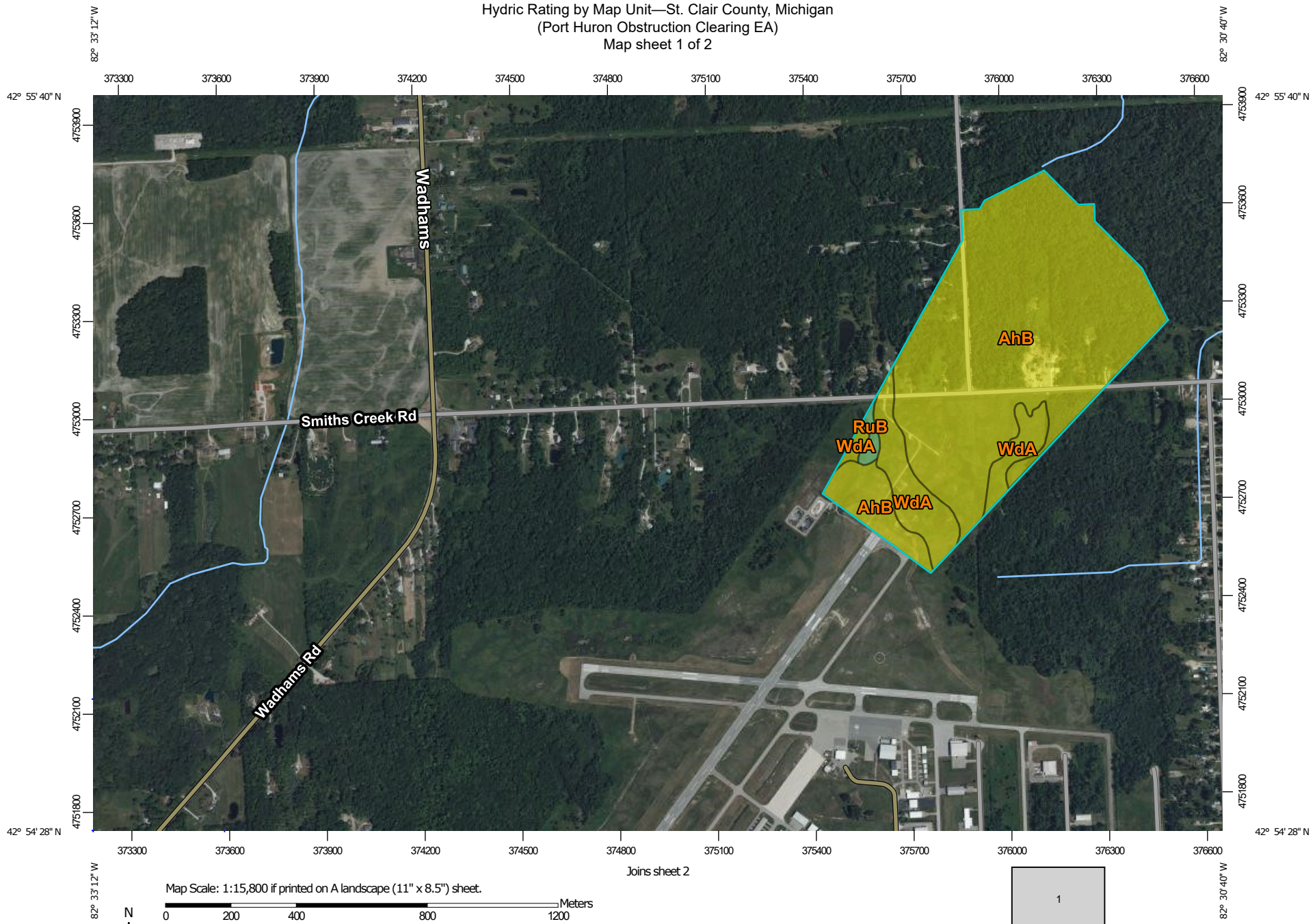


**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

12/5/2024
Page 1 of 7

Hydric Rating by Map Unit—St. Clair County, Michigan (Port Huron Obstruction Clearing EA) Map sheet 1 of 2



Map Scale: 1:15,800 if printed on A landscape (11" x 8.5") sheet.

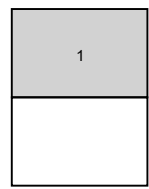
0 200 400 800 1200 Meters

0 500 1000 2000 3000 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

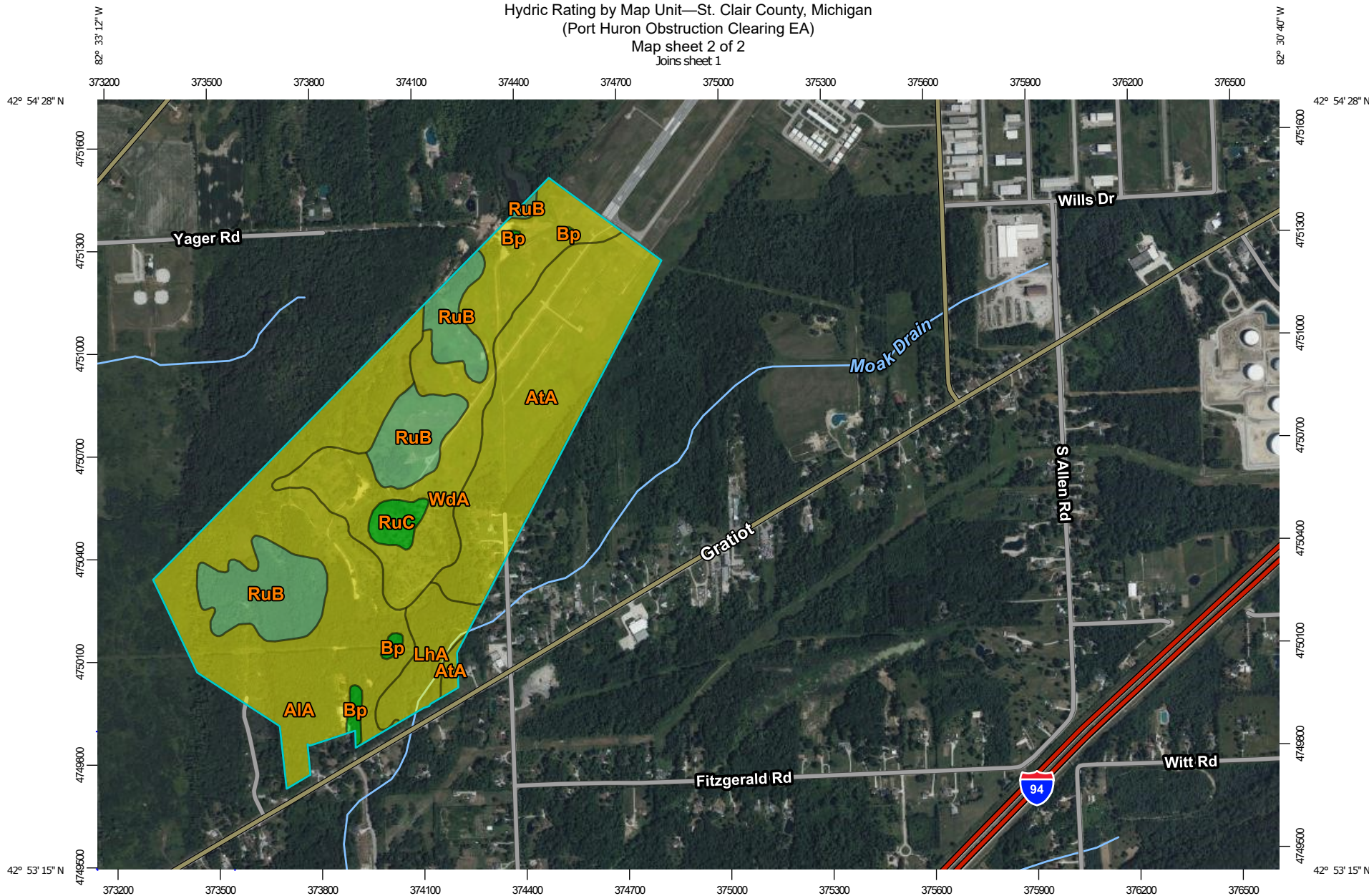


Joins sheet 2



Map Sheet Location

Hydric Rating by Map Unit—St. Clair County, Michigan (Port Huron Obstruction Clearing EA) Map sheet 2 of 2 Joins sheet 1



Map Scale: 1:15,800 if printed on A landscape (11" x 8.5") sheet.

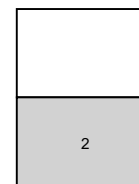


Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey



Map Sheet Location

12/5/2024
Page 3 of 7

Hydric Rating by Map Unit—St. Clair County, Michigan (Port Huron Obstruction Clearing EA)

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.

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: St. Clair County, Michigan
 Survey Area Data: Version 20, Aug 28, 2024

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

Date(s) aerial images were photographed: Jul 5, 2020—Sep 19, 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.

Hydric Rating by Map Unit

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
AhB	Allendale-Hoytville complex, 0 to 6 percent slopes	45	135.5	30.6%
AIA	Allendale-Latty complex, 0 to 3 percent slopes	45	93.1	21.0%
AtA	Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes	55	70.2	15.9%
Bp	Borrow pits	0	2.6	0.6%
LhA	Latty complex, 0 to 3 percent slopes	46	13.7	3.1%
RuB	Rousseau fine sand, 0 to 6 percent slopes	2	44.4	10.0%
RuC	Rousseau fine sand, 6 to 12 percent slopes	0	4.5	1.0%
WdA	Wainola-Deford fine sands, 0 to 2 percent slopes	35	78.5	17.7%
Totals for Area of Interest			442.6	100.0%

Description

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.

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.

Rating Options

Aggregation Method: Percent Present

Component Percent Cutoff: None Specified

Tie-break Rule: Lower

Hydric Soil List - All Components

This table lists the map unit components and their hydric status in the survey area. This list can help in planning land uses; however, onsite investigation is recommended to determine the hydric soils on a specific site (National Research Council, 1995; Hurt and others, 2002).

The three essential characteristics of wetlands are hydrophytic vegetation, hydric soils, and wetland hydrology (Cowardin and others, 1979; U.S. Army Corps of Engineers, 1987; National Research Council, 1995; Tiner, 1985). Criteria for all of the characteristics must be met for areas to be identified as wetlands. Undrained hydric soils that have natural vegetation should support a dominant population of ecological wetland plant species. Hydric soils that have been converted to other uses should be capable of being restored to wetlands.

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). These soils, under natural conditions, 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).

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

Map units that are dominantly made up of hydric soils may have small areas, or inclusions, of nonhydric soils in the higher positions on the landform, and map units dominantly made up of nonhydric soils may have inclusions of hydric soils in the lower positions on the landform.

The criteria for hydric soils are represented by codes in the table (for example, 2). Definitions for the codes are as follows:

1. All Histels except for Folistels, and Histosols except for Folists.
2. Soils in Aquic suborders, great groups, or subgroups, Albolls suborder, Historthels great group, Histoturbels great group, Pachic subgroups, or Cumulic subgroups that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
3. Soils that are frequently ponded for long or very long duration during the growing season.
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;
4. Map unit components that are frequently flooded for long duration or very long duration during the growing season that:
 - A. Based on the range of characteristics for the soil series, will at least in part meet one or more Field Indicators of Hydric Soils in the United States, or
 - B. Show evidence that the soil meets the definition of a hydric soil;

Hydric Condition: Food Security Act information regarding the ability to grow a commodity crop without removing woody vegetation or manipulating hydrology.

References:

- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
Federal Register. Doc. 2012-4733 Filed 2-28-12. February, 28, 2012. Hydric soils of 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. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Soil List - All Components

Hydric Soil List - All Components—MI147-St. Clair County, Michigan					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
AhB: Allendale-Hoytville complex, 0 to 6 percent slopes	Allendale	45-55	Knolls on till plains	No	—
	Hoytville	35-45	Depressions on till plains, drainageways on till plains	Yes	2,3
	Nappanee	5-5	Knolls on till plains	No	—
	Sims	5-5	Depressions on till plains, drainageways on till plains	Yes	2,3
AIA: Allendale-Latty complex, 0 to 3 percent slopes	Allendale	50-60	Knolls on lake plains	No	—
	Latty	40-50	Drainageways on lake plains, depressions on lake plains	Yes	2,3
AtA: Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes	Allendale	40-50	Knolls on lake plains	No	—
	Toledo	20-25	Drainageways on lake plains, depressions on lake plains	Yes	2,3
	Lenawee	20-25	Drainageways on lake plains, depressions on lake plains	Yes	2,3
	Lamson	0-20	Depressions on lake plains	Yes	2,3
Bp: Borrow pits	Borrow pits	100-100	—	Unranked	—
LhA: Latty complex, 0 to 3 percent slopes	Latty	40-50	Flats on lake plains, drainageways on lake plains	Yes	2,3
	Latty-Less wet	40-50	Knolls on lake plains	No	2,3
	Allendale	0-10	Knolls on lake plains	No	—
	Minoa	0-10	Knolls on lake plains	No	—
RuB: Rousseau fine sand, 0 to 6 percent slopes	Rousseau	93-97	Beaches on lake plains	No	—
	Wainola	1-5	Swales on lake plains	No	—
	Deford	1-5	Drainageways on lake plains, depressions on lake plains	Yes	2,3
RuC: Rousseau fine sand, 6 to 12 percent slopes	Rousseau	100-100	Knolls on lake plains, drainageways, ridges on lake plains, beaches	No	—

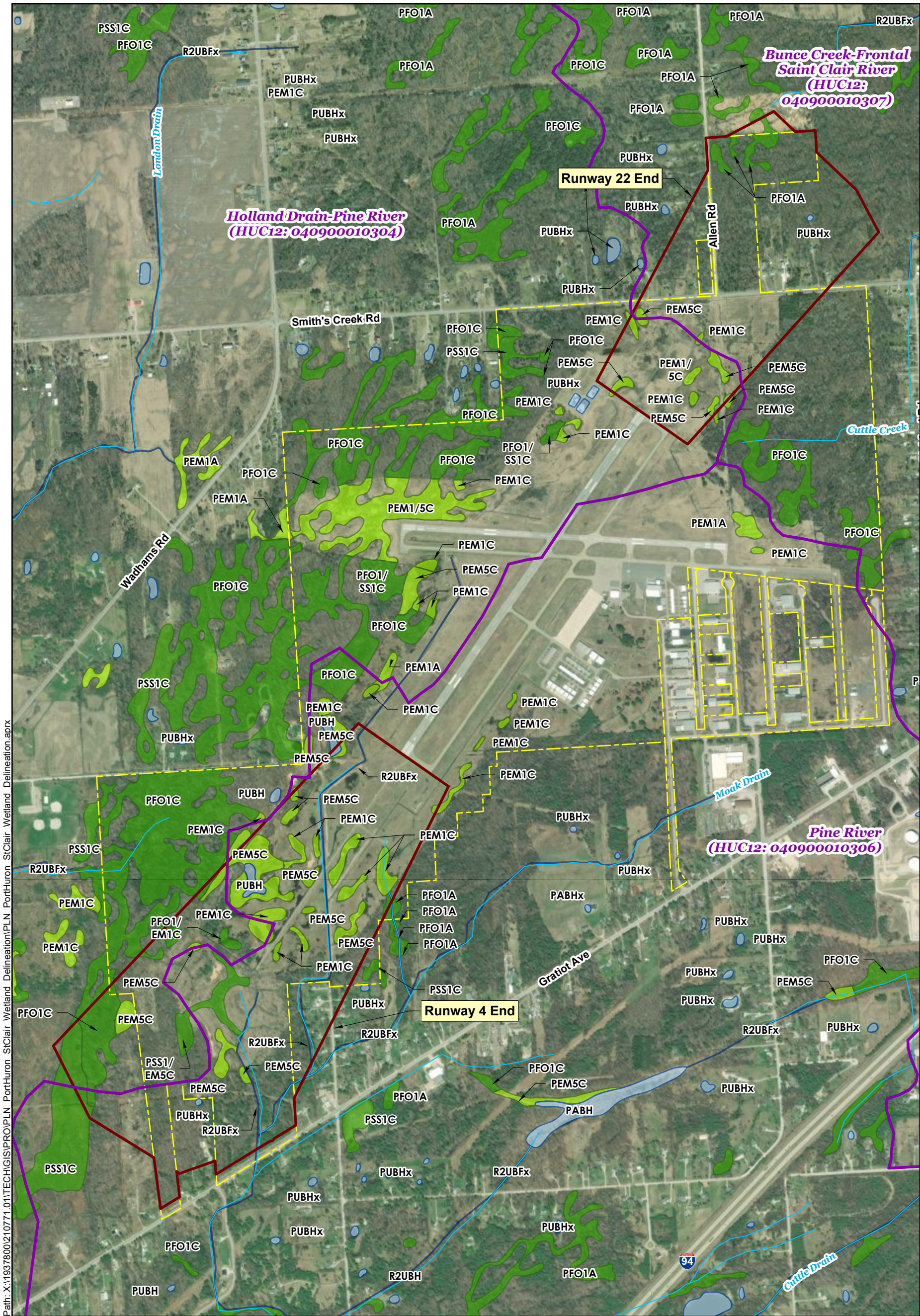
Hydric Soil List - All Components--MI147-St. Clair County, Michigan					
Map symbol and map unit name	Component/Local Phase	Comp. pct.	Landform	Hydric status	Hydric criteria met (code)
WdA: Wainola-Deford fine sands, 0 to 2 percent slopes	Wainola	45-70	Beaches,outwash plains,knolls on deltas	No	—
	Deford	15-40	Depressions on deltas,drainageways on deltas	Yes	2,3
	Gilford	0-10	Depressions on deltas	Yes	2,3
	Rousseau	0-10	Ridges on deltas	No	—

Data Source Information

Soil Survey Area: St. Clair County, Michigan

Survey Area Data: Version 20, Aug 28, 2024

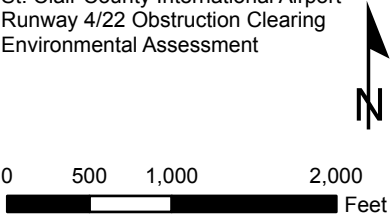
Appendix C Aquatic Resources and FEMA Floodplain Mapping



Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN PortHuron StClair Wetland Delineation.aprx

Image Source: ESRI, Inc. Imagery, 2022

Aquatic Resources Map
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



LEGEND

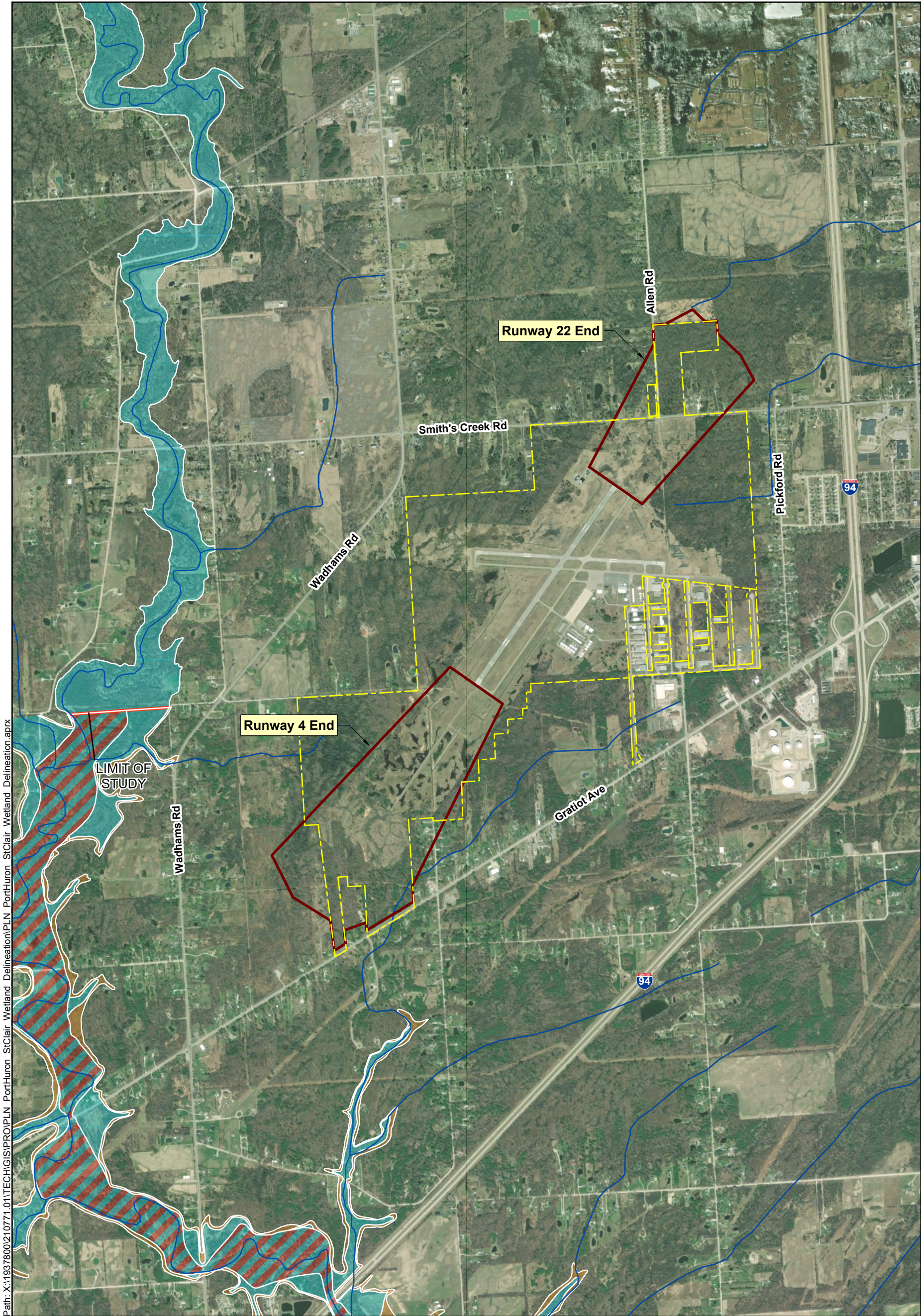
- Airport Property Boundary
- Project Area of Interest (AOI)
- HUC-12 Watershed
- NHD Line
- Canal/Ditch

- NWI WETLAND TYPE**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Freshwater Pond
 - Riverine

Data Source:
1. National Wetlands Inventory (NWI)
Data downloaded from
<https://www.fws.gov/program/national-wetlands-inventory/wetlands-data> for HUC 04090001;
NWI data updated 2015
2. National Hydrography Dataset (NHD)
Data downloaded from TNM Download
<https://apps.nationalmap.gov/downloader/>

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

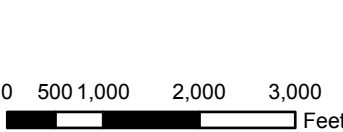


Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron_StClair_Wetland_Delineation.aprx

Image Source: NAIP Imagery, 2022

FEMA Floodplain Map

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)
- Flood Hazard Boundaries**
- Limit Lines
- SFHA / Flood Zone Boundary

- Flood Hazard Zones**
- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- 0.2% Annual Chance Flood Hazard

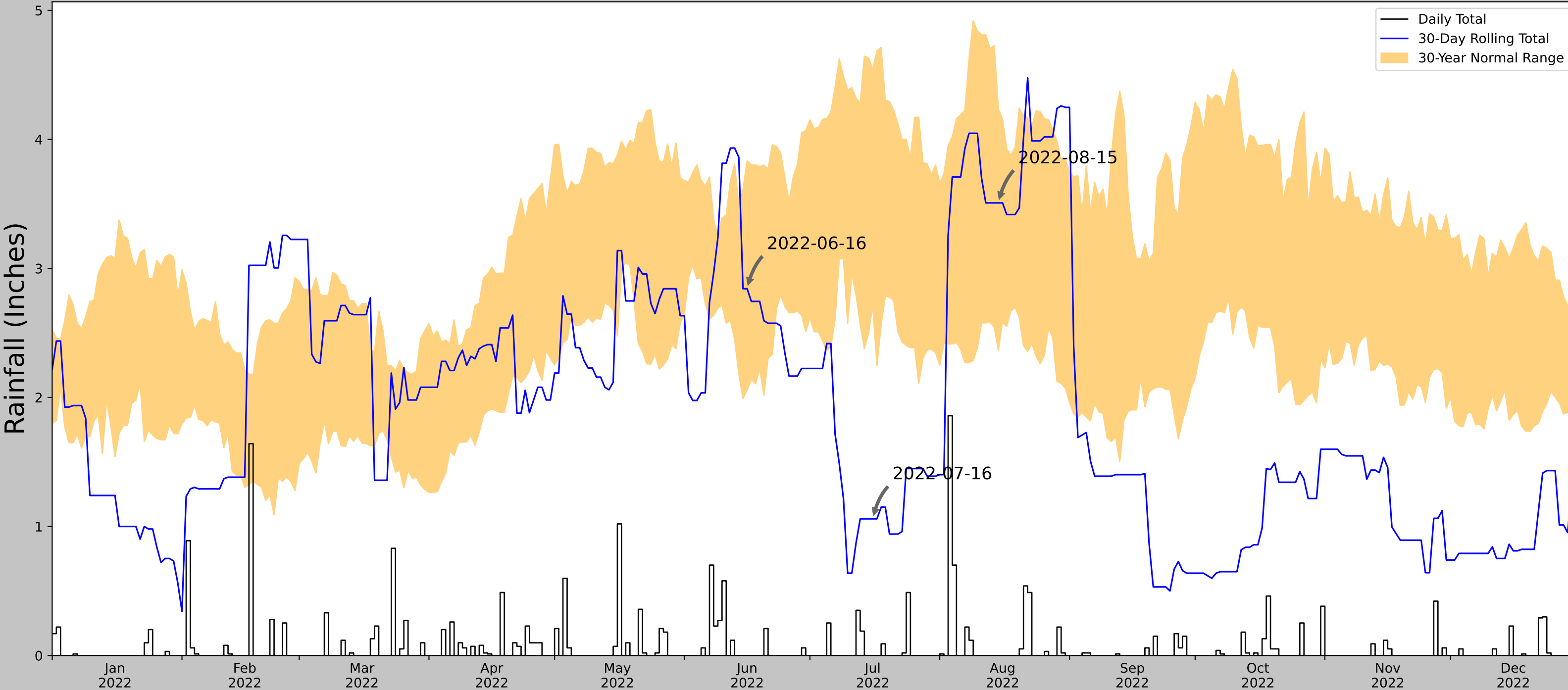
Data Source:
1. FEMA National Flood Hazard Layer (NFHL)
<https://hazards.fema.gov/arcgis/rest/services/public/NFHL/MapServer>
Map Panel: 26147C0345D (eff. 5/3/2010)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Appendix D Antecedent Precipitation Analysis

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



Coordinates	42.910438999, -82.5280952
Observation Date	2022-08-15
Elevation (ft)	644.588
Drought Index (PDSI)	Incipient drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-08-15	2.365354	4.236221	3.507874	Normal	2	3	6
2022-07-16	2.715748	4.542914	1.059055	Dry	1	2	2
2022-06-16	2.060236	3.834252	2.84252	Normal	2	1	2
Result							Normal Conditions - 10



**US Army Corps
of Engineers®**

Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center



ERDC
ENGINEER RESEARCH & DEVELOPMENT CENTER

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PORT HURON	42.975, -82.4194	589.895	7.08	54.693	3.573	11271	90
PORT HURON 2.0 SSW	42.9668, -82.4503	604.003	1.662	14.108	0.771	1	0
PORT HURON 1.6 W	42.9962, -82.4643	610.892	2.701	20.997	1.272	5	0
SARNIA CHRIS HADFIELD A	43.0, -82.3167	593.832	5.471	3.937	2.483	10	0
SARNIA AIRPORT	43.0, -82.3	593.832	6.277	3.937	2.849	66	0

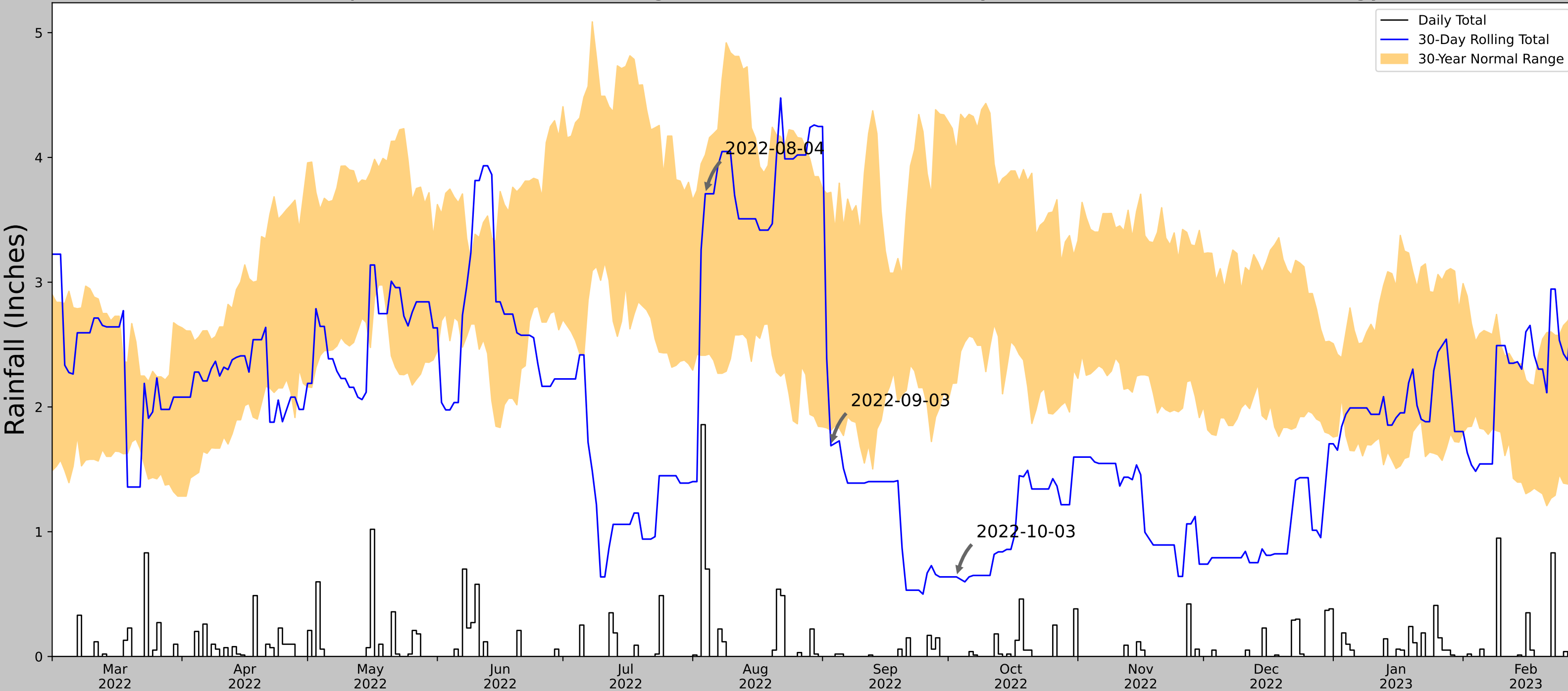
Climatological Data for PORT HURON, MI - August 2022

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2022-08-01	84	70	77.0	37	27	0.01	0.0	0
2022-08-02	81	63	72.0	32	22	0.00	0.0	0
2022-08-03	89	66	77.5	38	28	1.86	0.0	0
2022-08-04	79	71	75.0	35	25	0.70	0.0	0
2022-08-05	84	71	77.5	38	28	0.00	0.0	0
2022-08-06	89	73	81.0	41	31	0.00	0.0	0
2022-08-07	89	75	82.0	42	32	0.22	0.0	0
2022-08-08	87	68	77.5	38	28	0.12	0.0	0
2022-08-09	76	64	70.0	30	20	0.00	0.0	0
2022-08-10	85	59	72.0	32	22	0.00	0.0	0
2022-08-11	75	65	70.0	30	20	0.00	0.0	0
2022-08-12	80	57	68.5	29	19	0.00	0.0	0
2022-08-13	74	60	67.0	27	17	0.00	0.0	0
2022-08-14	74	64	69.0	29	19	T	0.0	0
2022-08-15	80	67	73.5	34	24	0.00	0.0	0
2022-08-16	81	68	74.5	35	25	0.00	0.0	0
2022-08-17	81	66	73.5	34	24	0.00	0.0	0
2022-08-18	87	64	75.5	36	26	0.00	0.0	0
2022-08-19	85	66	75.5	36	26	0.00	0.0	0
2022-08-20	83	68	75.5	36	26	0.05	0.0	0
2022-08-21	86	68	77.0	37	27	0.54	0.0	0
2022-08-22	79	66	72.5	33	23	0.49	0.0	0
2022-08-23	85	63	74.0	34	24	0.00	0.0	0
2022-08-24	88	66	77.0	37	27	0.00	0.0	0
2022-08-25	84	69	76.5	37	27	T	0.0	0
2022-08-26	75	67	71.0	31	21	0.03	0.0	0
2022-08-27	81	61	71.0	31	21	0.00	0.0	0
2022-08-28	82	60	71.0	31	21	0.00	0.0	0
2022-08-29	83	70	76.5	37	27	0.22	0.0	0
2022-08-30	80	70	75.0	35	25	0.02	0.0	0
2022-08-31	83	61	72.0	32	22	0.00	0.0	0
Average Sum	82.2	66.0	74.1	1064	754	4.26	0.0	0.0

Climatological Data for PORT HURON, MI - September 2022

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2022-09-01	83	60	71.5	32	22	0.00	0.0	0
2022-09-02	83	68	75.5	36	26	0.00	0.0	0
2022-09-03	87	69	78.0	38	28	0.00	0.0	0
2022-09-04	72	66	69.0	29	19	0.02	0.0	0
2022-09-05	75	63	69.0	29	19	0.02	0.0	0
2022-09-06	77	66	71.5	32	22	0.00	0.0	0
2022-09-07	79	56	67.5	28	18	0.00	0.0	0
2022-09-08	82	57	69.5	30	20	0.00	0.0	0
2022-09-09	83	61	72.0	32	22	0.00	0.0	0
2022-09-10	86	67	76.5	37	27	0.00	0.0	0
2022-09-11	76	69	72.5	33	23	0.00	0.0	0
2022-09-12	71	61	66.0	26	16	0.01	0.0	0
2022-09-13	76	57	66.5	27	17	T	0.0	0
2022-09-14	80	60	70.0	30	20	0.00	0.0	0
2022-09-15	73	56	64.5	25	15	0.00	0.0	0
2022-09-16	82	61	71.5	32	22	0.00	0.0	0
2022-09-17	82	63	72.5	33	23	0.00	0.0	0
2022-09-18	86	71	78.5	39	29	T	0.0	0
2022-09-19	84	67	75.5	36	26	0.06	0.0	0
2022-09-20	81	60	70.5	31	21	0.00	0.0	0
2022-09-21	80	66	73.0	33	23	0.15	0.0	0
2022-09-22	73	52	62.5	23	13	0.00	0.0	0
2022-09-23	67	48	57.5	18	8	0.00	0.0	0
2022-09-24	62	52	57.0	17	7	T	0.0	0
2022-09-25	65	56	60.5	21	11	T	0.0	0
2022-09-26	61	52	56.5	17	7	0.17	0.0	0
2022-09-27	57	52	54.5	15	5	0.06	0.0	0
2022-09-28	57	49	53.0	13	3	0.15	0.0	0
2022-09-29	66	50	58.0	18	8	0.00	0.0	0
2022-09-30	68	46	57.0	17	7	0.00	0.0	0
Average Sum	75.1	59.4	67.3	827	527	0.64	0.0	0.0

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



Coordinates	42.910438999, -82.5280952
Observation Date	2022-10-03
Elevation (ft)	644.588
Drought Index (PDSI)	Mild drought
WebWIMP H ₂ O Balance	Wet Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2022-10-03	2.191339	4.055906	0.637795	Dry	1	3	3
2022-09-03	1.813386	3.720079	1.688976	Dry	1	2	2
2022-08-04	2.414173	4.020866	3.708662	Normal	2	1	2
Result							Drier than Normal - 7



**US Army Corps
of Engineers®**

Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center



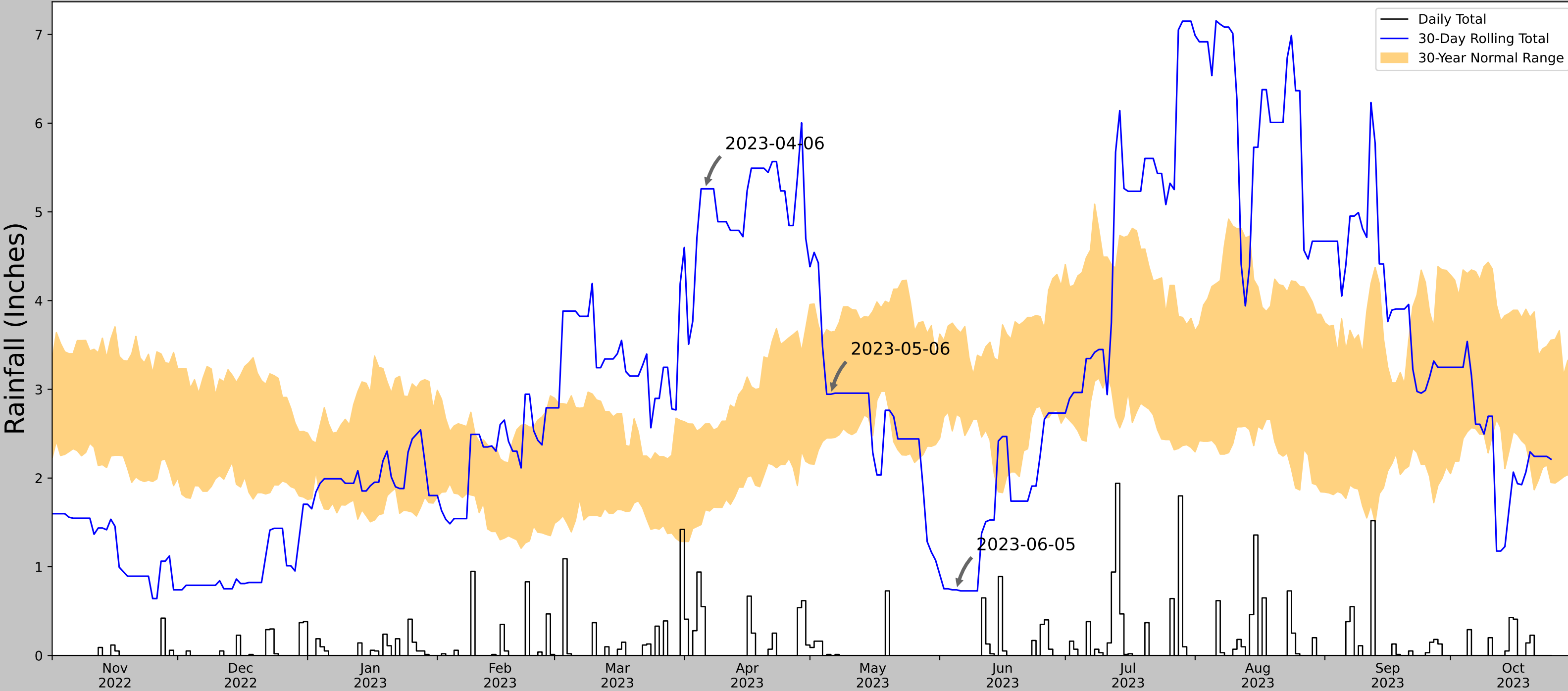
ERDC
ENGINEER RESEARCH & DEVELOPMENT CENTER

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PORT HURON	42.975, -82.4194	589.895	7.08	54.693	3.573	11269	90
PORT HURON 2.0 SSW	42.9668, -82.4503	604.003	1.662	14.108	0.771	1	0
PORT HURON 1.6 W	42.9962, -82.4643	610.892	2.701	20.997	1.272	7	0
SARNIA CHRIS HADFIELD A	43.0, -82.3167	593.832	5.471	3.937	2.483	10	0
SARNIA AIRPORT	43.0, -82.3	593.832	6.277	3.937	2.849	66	0

Climatological Data for PORT HURON, MI - October 2022

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2022-10-01	66	55	60.5	21	11	0.00	0.0	0
2022-10-02	62	53	57.5	18	8	0.00	0.0	0
2022-10-03	64	43	53.5	14	4	0.00	0.0	0
2022-10-04	74	43	58.5	19	9	0.00	0.0	0
2022-10-05	82	49	65.5	26	16	0.00	0.0	0
2022-10-06	77	55	66.0	26	16	0.04	0.0	0
2022-10-07	57	41	49.0	9	0	0.01	0.0	0
2022-10-08	56	36	46.0	6	0	0.00	0.0	0
2022-10-09	68	42	55.0	15	5	T	0.0	0
2022-10-10	60	50	55.0	15	5	0.00	0.0	0
2022-10-11	74	51	62.5	23	13	0.00	0.0	0
2022-10-12	68	61	64.5	25	15	0.18	0.0	0
2022-10-13	61	44	52.5	13	3	0.02	0.0	0
2022-10-14	58	40	49.0	9	0	0.00	0.0	0
2022-10-15	56	44	50.0	10	0	0.02	0.0	0
2022-10-16	58	42	50.0	10	0	0.00	0.0	0
2022-10-17	47	38	42.5	3	0	0.13	0.0	0
2022-10-18	41	38	39.5	0	0	0.46	0.0	0
2022-10-19	42	39	40.5	1	0	0.05	0.0	0
2022-10-20	41	37	39.0	0	0	0.05	0.0	0
2022-10-21	60	39	49.5	10	0	0.00	0.0	0
2022-10-22	71	51	61.0	21	11	0.00	0.0	0
2022-10-23	73	54	63.5	24	14	0.00	0.0	0
2022-10-24	74	51	62.5	23	13	0.00	0.0	0
2022-10-25	72	57	64.5	25	15	0.00	0.0	0
2022-10-26	64	43	53.5	14	4	0.25	0.0	0
2022-10-27	54	39	46.5	7	0	0.00	0.0	0
2022-10-28	57	41	49.0	9	0	0.00	0.0	0
2022-10-29	60	39	49.5	10	0	0.00	0.0	0
2022-10-30	65	43	54.0	14	4	0.00	0.0	0
2022-10-31	61	52	56.5	17	7	0.38	0.0	0
Average Sum	62.0	45.5	53.8	437	173	1.59	0.0	0.0

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



Coordinates	42.910438999, -82.5280952
Observation Date	2023-06-05
Elevation (ft)	644.588
Drought Index (PDSI)	Mild drought
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-06-05	2.718504	3.682677	0.740158	Dry	1	3	3
2023-05-06	2.451575	3.644095	2.944882	Normal	2	2	4
2023-04-06	1.643701	2.609843	5.259843	Wet	3	1	3
Result							Normal Conditions - 10



**US Army Corps
of Engineers®**

Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center



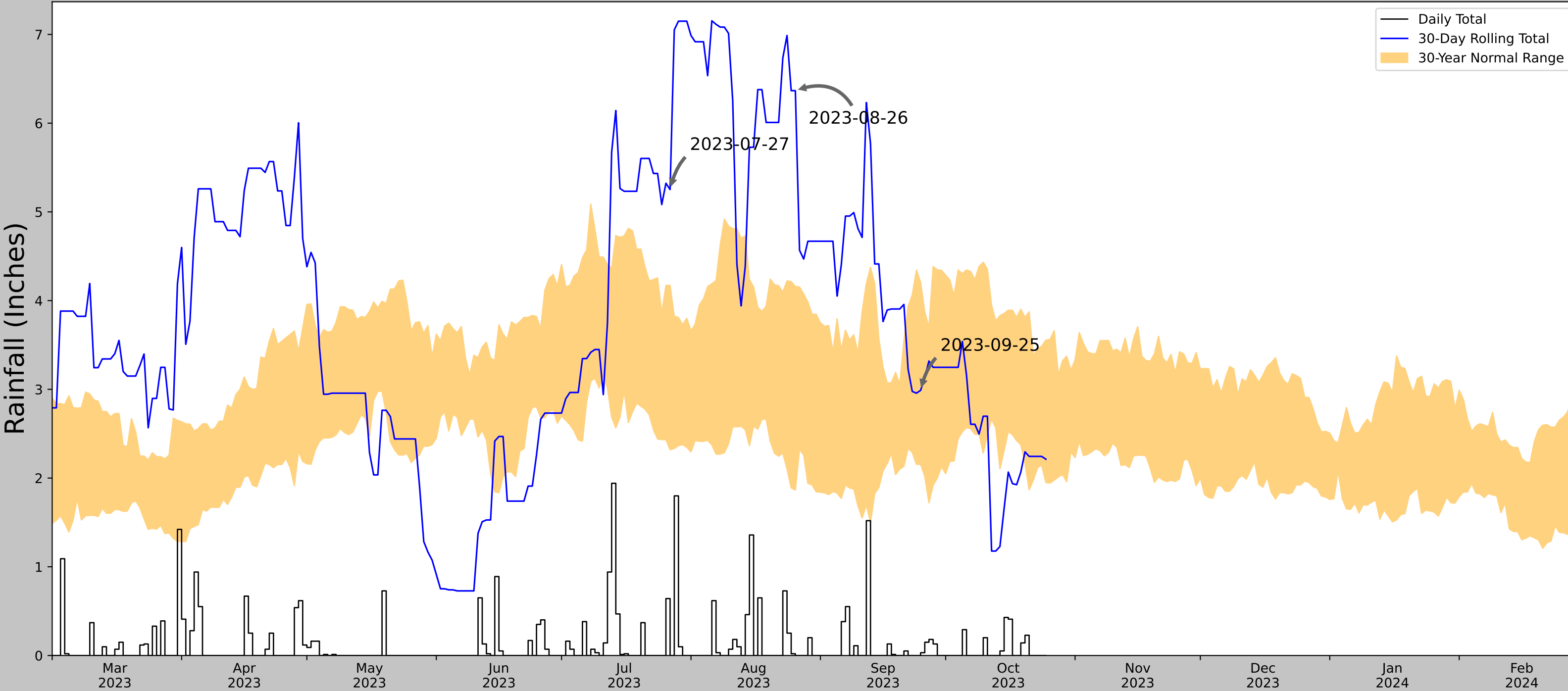
ERDC
ENGINEER RESEARCH & DEVELOPMENT CENTER

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PORT HURON	42.975, -82.4194	589.895	7.08	54.693	3.573	11269	90
PORT HURON 2.0 SSW	42.9668, -82.4503	604.003	1.662	14.108	0.771	1	0
PORT HURON 1.6 W	42.9962, -82.4643	610.892	2.701	20.997	1.272	7	0
SARNIA CHRIS HADFIELD A	43.0, -82.3167	593.832	5.471	3.937	2.483	10	0
SARNIA AIRPORT	43.0, -82.3	593.832	6.277	3.937	2.849	66	0

Climatological Data for PORT HURON, MI - June 2023

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2023-06-01	86	56	71.0	31	21	0.00	0.0	0
2023-06-02	78	63	70.5	31	21	0.00	0.0	0
2023-06-03	76	62	69.0	29	19	0.00	0.0	0
2023-06-04	69	55	62.0	22	12	0.00	0.0	0
2023-06-05	81	55	68.0	28	18	0.00	0.0	0
2023-06-06	65	57	61.0	21	11	0.00	0.0	0
2023-06-07	65	51	58.0	18	8	0.00	0.0	0
2023-06-08	67	54	60.5	21	11	0.00	0.0	0
2023-06-09	77	53	65.0	25	15	0.00	0.0	0
2023-06-10	81	56	68.5	29	19	0.00	0.0	0
2023-06-11	72	56	64.0	24	14	0.65	0.0	0
2023-06-12	64	54	59.0	19	9	0.13	0.0	0
2023-06-13	66	51	58.5	19	9	0.02	0.0	0
2023-06-14	70	51	60.5	21	11	0.00	0.0	0
2023-06-15	69	57	63.0	23	13	0.89	0.0	0
2023-06-16	64	56	60.0	20	10	0.05	0.0	0
2023-06-17	75	55	65.0	25	15	0.00	0.0	0
2023-06-18	84	52	68.0	28	18	0.00	0.0	0
2023-06-19	75	60	67.5	28	18	0.00	0.0	0
2023-06-20	77	62	69.5	30	20	0.00	0.0	0
2023-06-21	79	61	70.0	30	20	0.00	0.0	0
2023-06-22	80	63	71.5	32	22	0.00	0.0	0
2023-06-23	72	63	67.5	28	18	0.17	0.0	0
2023-06-24	85	63	74.0	34	24	T	0.0	0
2023-06-25	80	63	71.5	32	22	0.35	0.0	0
2023-06-26	75	64	69.5	30	20	0.40	0.0	0
2023-06-27	68	64	66.0	26	16	0.07	0.0	0
2023-06-28	77	58	67.5	28	18	0.00	0.0	0
2023-06-29	79	63	71.0	31	21	0.00	0.0	0
2023-06-30	85	67	76.0	36	26	0.00	0.0	0
Average Sum	74.7	58.2	66.4	799	499	2.73	0.0	0.0

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



Coordinates	42.910438999, -82.5280952
Observation Date	2023-09-25
Elevation (ft)	644.588
Drought Index (PDSI)	Mild wetness
WebWIMP H ₂ O Balance	Dry Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-09-25	2.154724	4.206693	2.988189	Normal	2	3	6
2023-08-26	1.864961	4.159055	6.366142	Wet	3	2	6
2023-07-27	2.318504	4.17126	5.251969	Wet	3	1	3
Result							Wetter than Normal - 15



**US Army Corps
of Engineers®**

Figures and tables made by the
Antecedent Precipitation Tool
Version 2.0

Developed by:
U.S. Army Corps of Engineers and
U.S. Army Engineer Research and
Development Center



ERDC
ENGINEER RESEARCH & DEVELOPMENT CENTER

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
PORT HURON	42.975, -82.4194	589.895	7.08	54.693	3.573	11269	87
PORT HURON 2.0 SSW	42.9668, -82.4503	604.003	1.662	14.108	0.771	1	0
PORT HURON 1.6 W	42.9962, -82.4643	610.892	2.701	20.997	1.272	7	3
SARNIA CHRIS HADFIELD A	43.0, -82.3167	593.832	5.471	3.937	2.483	10	0
SARNIA AIRPORT	43.0, -82.3	593.832	6.277	3.937	2.849	66	0

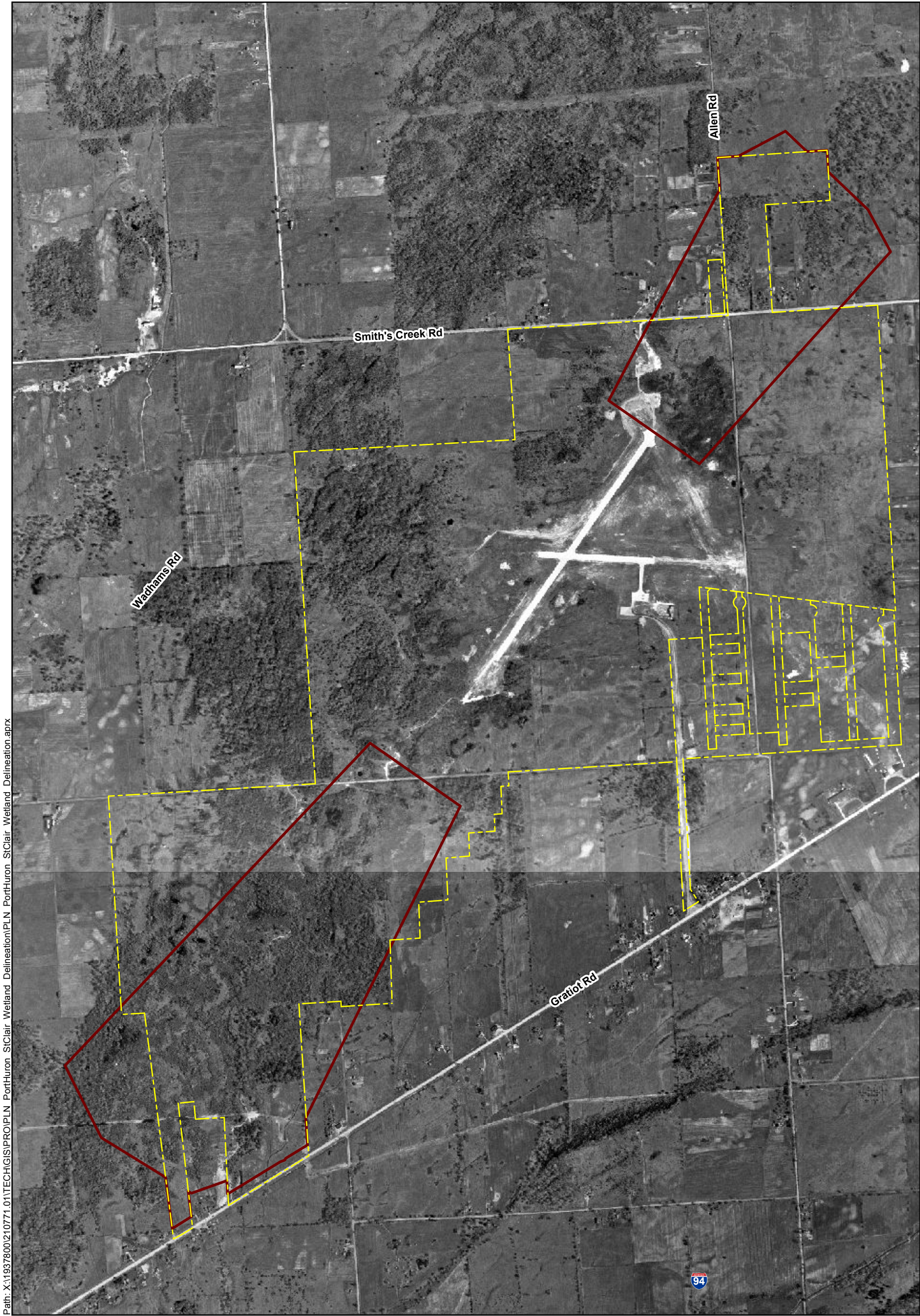
Climatological Data for PORT HURON, MI - September 2023

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2023-09-01	75	57	66.0	26	16	0.00	0.0	0
2023-09-02	78	61	69.5	30	20	0.00	0.0	0
2023-09-03	87	64	75.5	36	26	0.00	0.0	0
2023-09-04	90	71	80.5	41	31	0.00	0.0	0
2023-09-05	89	73	81.0	41	31	0.00	0.0	0
2023-09-06	81	73	77.0	37	27	0.38	0.0	0
2023-09-07	73	63	68.0	28	18	0.55	0.0	0
2023-09-08	69	60	64.5	25	15	0.00	0.0	0
2023-09-09	65	58	61.5	22	12	0.11	0.0	0
2023-09-10	70	60	65.0	25	15	0.00	0.0	0
2023-09-11	76	56	66.0	26	16	T	0.0	0
2023-09-12	67	57	62.0	22	12	1.52	0.0	0
2023-09-13	65	52	58.5	19	9	0.00	0.0	0
2023-09-14	72	51	61.5	22	12	0.00	0.0	0
2023-09-15	69	48	58.5	19	9	0.00	0.0	0
2023-09-16	72	53	62.5	23	13	0.00	0.0	0
2023-09-17	69	59	64.0	24	14	0.13	0.0	0
2023-09-18	66	55	60.5	21	11	0.01	0.0	0
2023-09-19	73	51	62.0	22	12	0.00	0.0	0
2023-09-20	73	56	64.5	25	15	0.00	0.0	0
2023-09-21	79	62	70.5	31	21	0.03	0.0	0
2023-09-22	75	63	69.0	29	19	0.00	0.0	0
2023-09-23	71	57	64.0	24	14	0.00	0.0	0
2023-09-24	72	56	64.0	24	14	0.00	0.0	0
2023-09-25	70	63	66.5	27	17	0.03	0.0	0
2023-09-26	66	61	63.5	24	14	0.15	0.0	0
2023-09-27	66	57	61.5	22	12	0.18	0.0	0
2023-09-28	62	56	59.0	19	9	0.13	0.0	0
2023-09-29	69	59	64.0	24	14	0.00	0.0	0
2023-09-30	79	57	68.0	28	18	0.00	0.0	0
Average Sum	72.9	59.0	66.0	786	486	3.22	0.0	0.0

Climatological Data for PORT HURON, MI - October 2023

Date	Max Temperature	Min Temperature	Avg Temperature	GDD Base 40	GDD Base 50	Precipitation	Snowfall	Snow Depth
2023-10-01	79	58	68.5	29	19	0.00	0.0	0
2023-10-02	81	62	71.5	32	22	0.00	0.0	0
2023-10-03	84	62	73.0	33	23	0.00	0.0	0
2023-10-04	80	65	72.5	33	23	0.00	0.0	0
2023-10-05	71	63	67.0	27	17	0.29	0.0	0
2023-10-06	67	51	59.0	19	9	T	0.0	0
2023-10-07	55	48	51.5	12	2	T	0.0	0
2023-10-08	56	45	50.5	11	1	0.00	0.0	0
2023-10-09	55	39	47.0	7	0	0.00	0.0	0
2023-10-10	51	45	48.0	8	0	0.20	0.0	0
2023-10-11	55	45	50.0	10	0	T	0.0	0
2023-10-12	63	45	54.0	14	4	0.00	0.0	0
2023-10-13	54	48	51.0	11	1	0.07	0.0	0
2023-10-14	56	49	52.5	13	3	0.05	0.0	0
2023-10-15	54	47	50.5	11	1	0.43	0.0	0
2023-10-16	53	47	50.0	10	0	0.41	0.0	0
2023-10-17	54	45	49.5	10	0	0.00	0.0	0
2023-10-18	60	45	52.5	13	3	0.00	0.0	0
2023-10-19	61	50	55.5	16	6	0.14	0.0	0
2023-10-20	57	51	54.0	14	4	0.23	0.0	0
2023-10-21	51	46	48.5	9	0	0.00	0.0	0
2023-10-22	54	43	48.5	9	0	0.00	0.0	0
2023-10-23	54	36	45.0	5	0	0.00	0.0	0
2023-10-24	71	51	61.0	21	11	0.00	0.0	0
2023-10-25	68	57	62.5	23	13	0.50	0.0	0
2023-10-26	68	57	62.5	23	13	0.21	0.0	0
2023-10-27	M	M	M	M	M	M	M	M
2023-10-28	M	M	M	M	M	M	M	M
2023-10-29	M	M	M	M	M	M	M	M
2023-10-30	M	M	M	M	M	M	M	M
2023-10-31	M	M	M	M	M	M	M	M
Average Sum	62.0	50.0	56.0	423	175	2.53	0.0	0.0

Appendix E Historic Aerial Photographs



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 1951
Image Source:
USGS Earth Explorer
(<https://earthexplorer.usgs.gov/>)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron StClair Wetland Delineation\PLN_Porthuron StClair Wetland Delineation.aprx



Historical Aerial Imagery

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 1967

Image Source:
USGS Earth Explorer
(<https://earthexplorer.usgs.gov/>)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

0 500 1,000 2,000
Feet



Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron StClair Wetland Delineation.aprx



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 1973
Image Source:
USGS Earth Explorer
(<https://earthexplorer.usgs.gov/>)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 1978
Image Source:
USGS Earth Explorer
(<https://earthexplorer.usgs.gov/>)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron_StClair_Wetland_Delineation.aprx



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 1985

Image Source:
Wayne State University Library
Systems Digital Collections,
St Clair Count Aerials 1985
(<https://wayne.contentdm.oclc.org/digital/collection/dte-aerial>)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron StClair Wetland Delineation\PLN_Porthuron StClair Wetland Delineation.aprx



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 1998

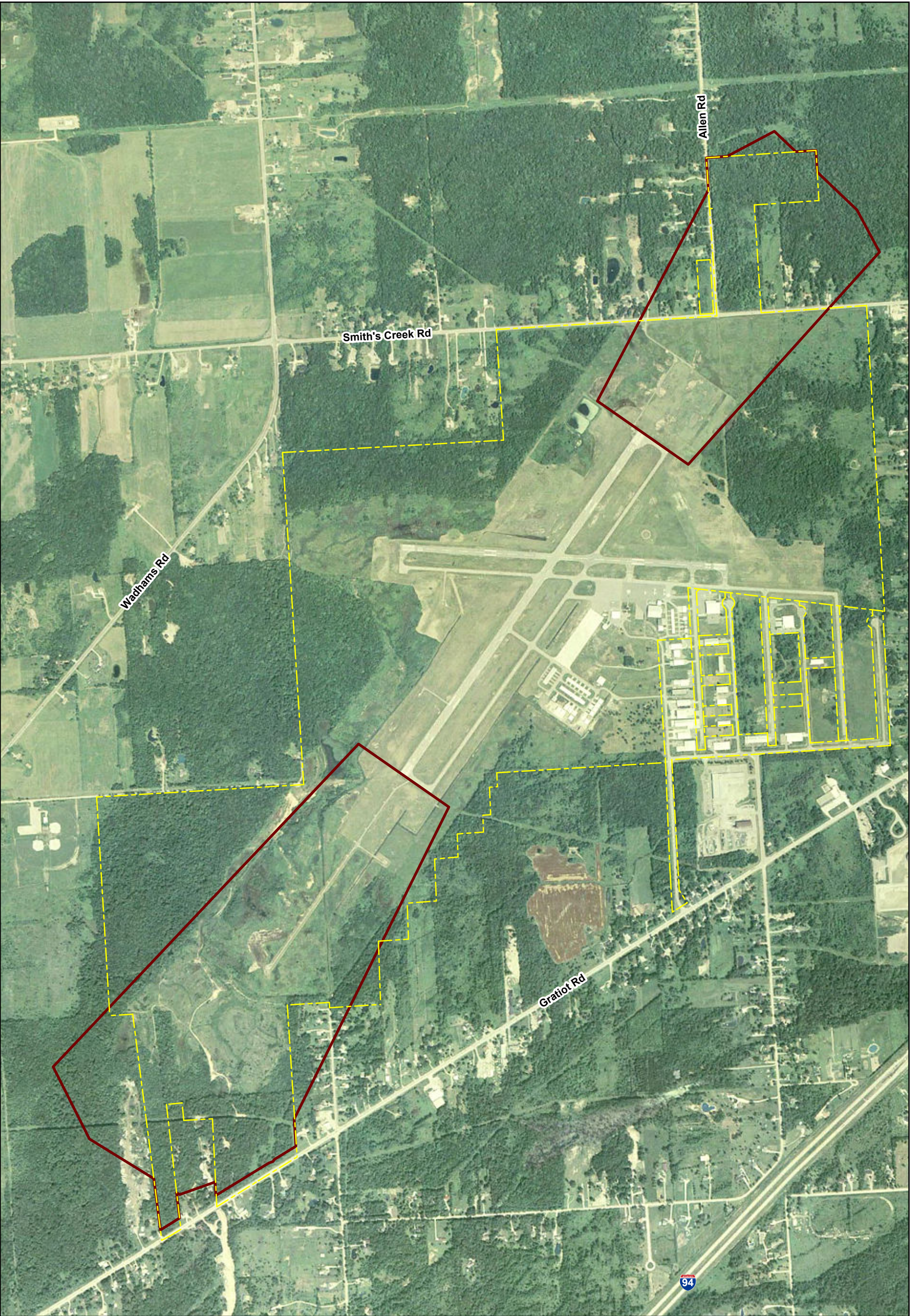
Image Source:
Michigan NAPP Imagery
(https://imagery.michigan.gov/server/services/Michigan_NAPP_1998/ImageServer)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron_StClair_Wetland_Delineation.aprx



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

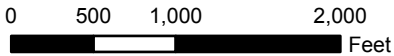


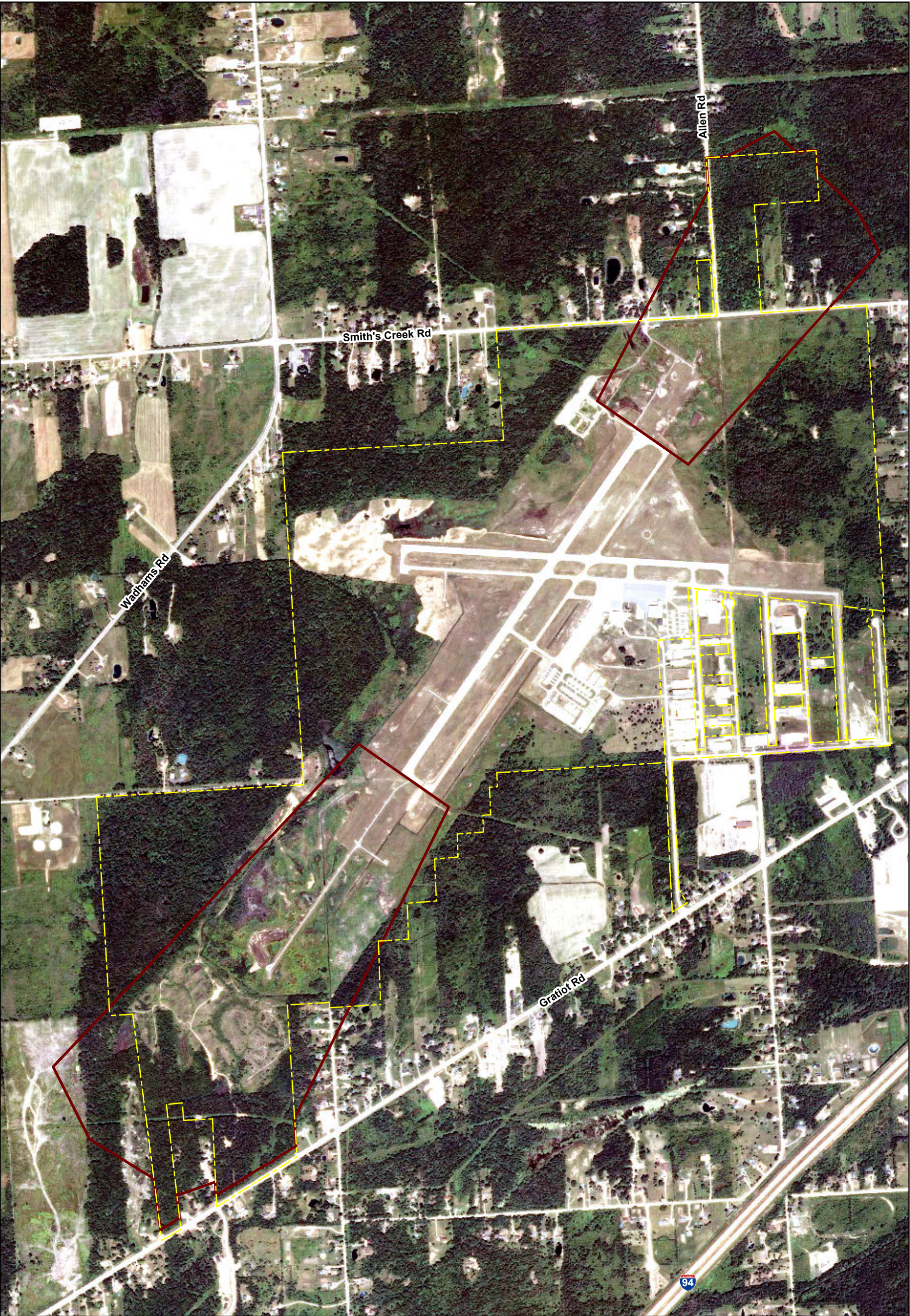
IMAGE DATE: 2006

Image Source:
Michigan NAIP Imagery
(https://imagery.michigan.gov/server/services/Michigan_NAIP_2006/
ImageServer)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron_StClair_Wetland_Delineation.aprx



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

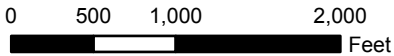


IMAGE DATE: 2010

Image Source:
Michigan NAIP Imagery
(https://imagery.michigan.gov/server/services/Michigan_NAIP_2010/ImageServer)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron_StClair_Wetland_Delineation.aprx



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 2012

Image Source:
Michigan NAIP Imagery
(https://imagery.michigan.gov/server/services/Michigan_NAIP_2012/ImageServer)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron_StClair_Wetland_Delineation.aprx



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 2016

Image Source:
Michigan NAIP Imagery
(https://imagery.michigan.gov/server/services/Michigan_NAIP_2016/ImageServer)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron_StClair_Wetland_Delineation.aprx



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 2018

Image Source:
Michigan NAIP Imagery
(https://imagery.michigan.gov/server/services/Michigan_NAIP_2018/
ImageServer)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023





Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 2020

Image Source:
Michigan NAIP Imagery
(https://imagery.michigan.gov/server/services/Michigan_NAIP_2020/ImageServer)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_Porthuron_StClair_Wetland_Delineation.aprx



Historical Aerial Imagery
St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



LEGEND

- Airport Property Boundary
- Project Area of Interest (AOI)

IMAGE DATE: 2022

Image Source:
ESRI, Inc Imagery
(https://services.arcgisonline.com/ArcGIS/rest/services/World_Imagery/MapServer)

Project Location

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball Township; St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quads: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Appendix F Wetland Boundary Maps

Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_PortHuron_StClair_Wetland_Delineation.aprx

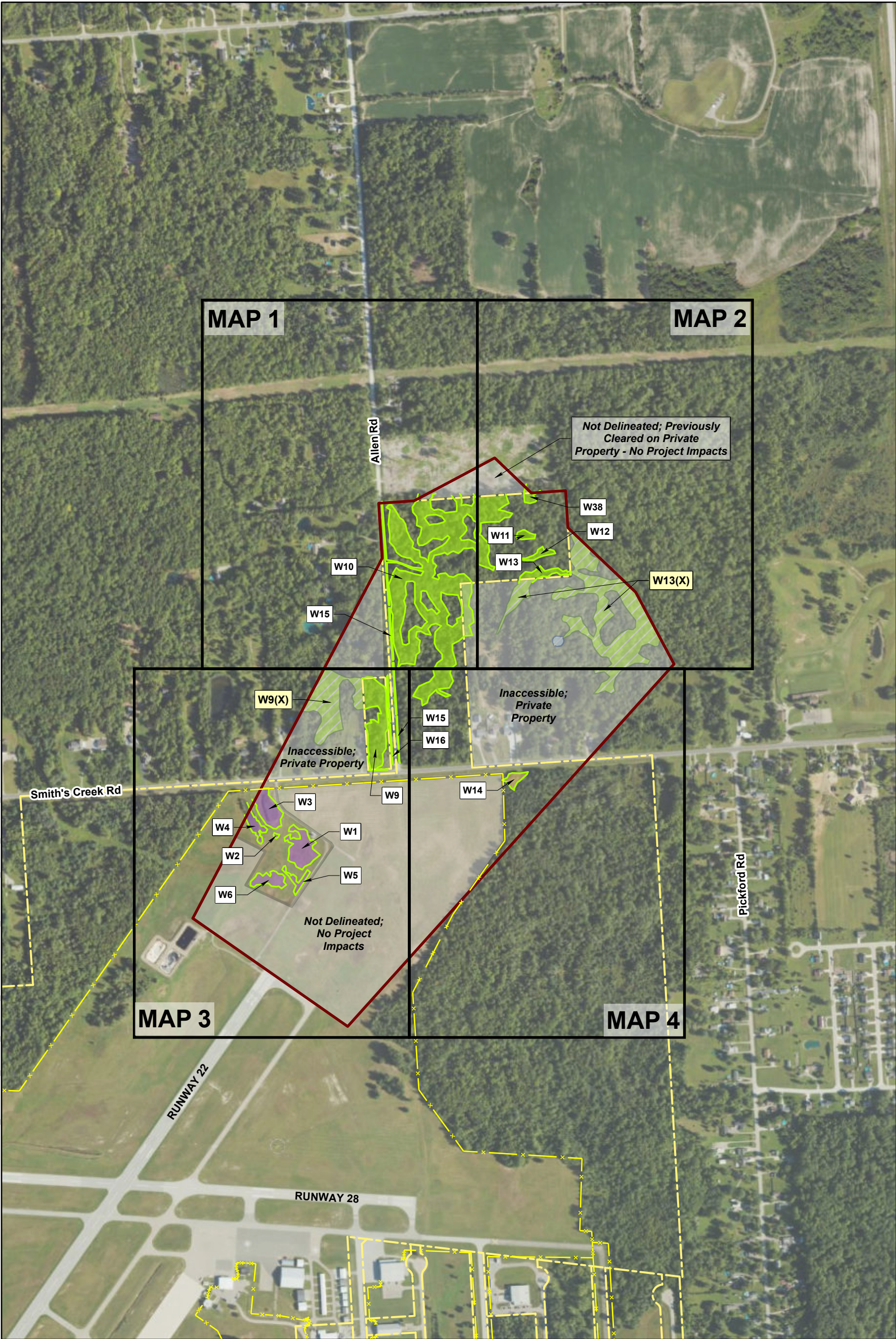


Image Source: NAIP Imagery, 2022

WETLAND BOUNDARY OVERVIEW MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Runway 22 End

0 300 600 900 1,200
Feet



- Project Area of Interest (AOI)
- Map Sheet
- Area not Delineated
- Existing Fence
- Airport Property Boundary
- Pipeline Corridor
- Two-track

- Legend**
- Delineated Wetland Type**
- Emergent (PEM)
 - Forested (PFO)
 - Scrub-Shrub (PSS)
 - Shallow Marsh (PUB)
 - Pond (PUBHx)
 - Ditch (RUBx)

- Estimated Wetland Type**
- Emergent (PEM)
 - Forested (PFO)
 - Scrub-Shrub (PSS)
 - Pond (PUBHx)
 - Ditch (RUBx)

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Path: X:\1937800\210771.01\TECH\GIS\PRO\PLN_PortHuron_StClair_Wetland_Delineation.aprx

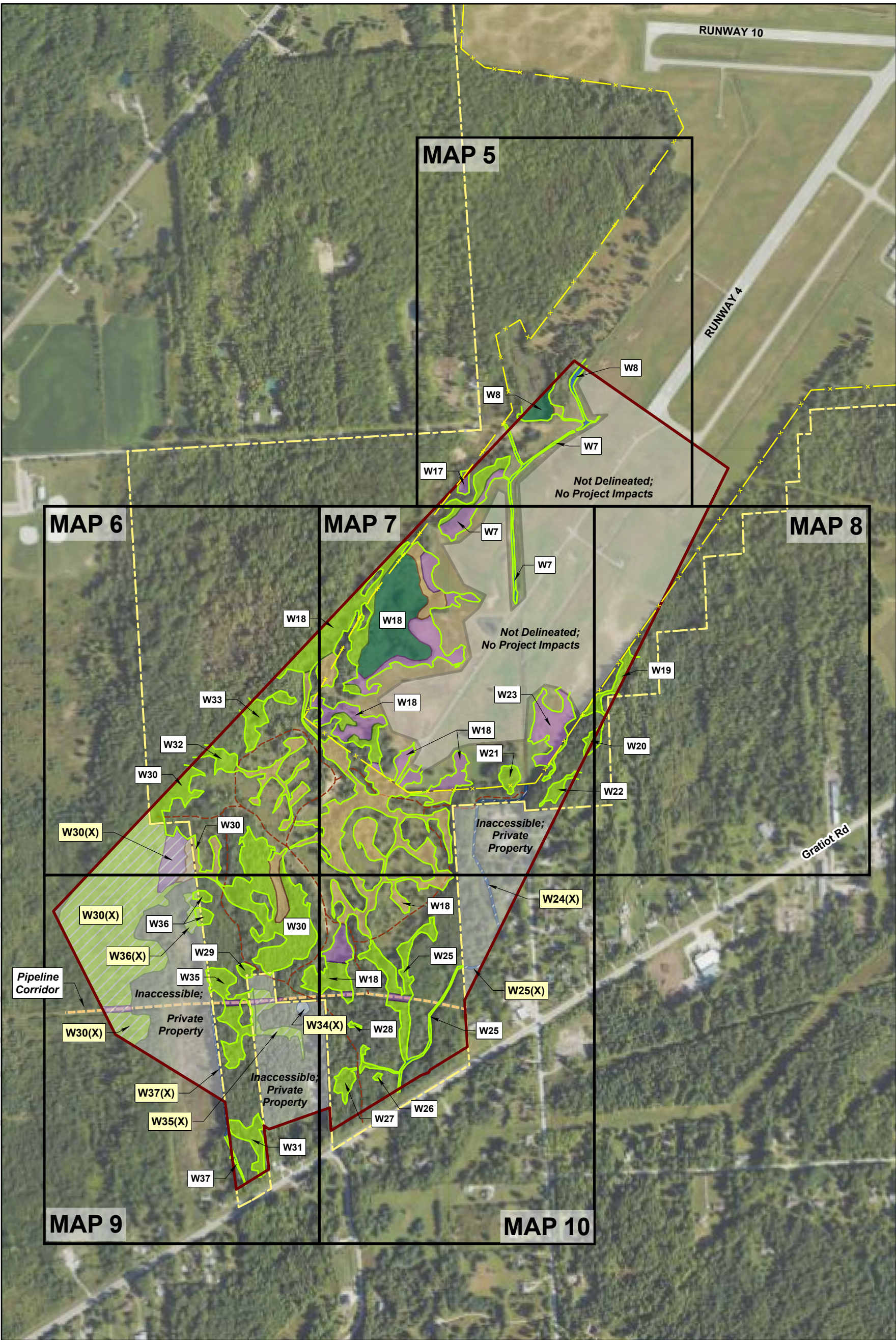
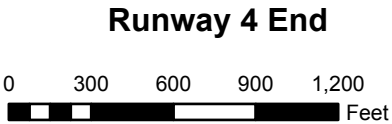


Image Source: NAIP Imagery, 2022

WETLAND BOUNDARY OVERVIEW MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



- Project Area of Interest (AOI)
- Map Sheet
- Area not Delineated
- Existing Fence
- Airport Property Boundary
- Pipeline Corridor
- Two-track

- Legend**
- Delineated Wetland Type**
- Emergent (PEM)
 - Forested (PFO)
 - Scrub-Shrub (PSS)
 - Shallow Marsh (PUB)
 - Pond (PUBHx)
 - Ditch (RUBx)

- Estimated Wetland Type**
- Emergent (PEM)
 - Forested (PFO)
 - Scrub-Shrub (PSS)
 - Pond (PUBHx)
 - Ditch (RUBx)

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

DELINEATED WETLANDS SUMMARY TABLE

Wetland No	Area (acres)	NWI Type	Type Description
1	0.973	PEM	Emergent
2	0.023	PEM	Emergent
3	0.802	PEM	Emergent
4	0.320	PEM	Emergent
5	0.219	PEM	Emergent
6	0.448	PEM	Emergent
7	2.527	PEM/PFO/RUBx	Emergent/Forested/Ditch (Excavated)
8	1.176	PEM/PSS/PUB/RUBx	Emergent/Scrub-Shrub/Shallow Marsh/Ditch (Excavated)
9	1.799	PFO	Forested
10	11.507	PEM/PFO	Emergent/Forested
11	0.144	PFO	Forested
12	0.188	PFO	Forested
13	0.353	PFO	Forested
14	0.233	PSS	Scrub-Shrub
15	0.168	PEM	Emergent
16	0.085	PEM	Emergent
17	0.198	PEM	Emergent
18	30.352	PEM/PSS/PFO/PUB	Emergent/Scrub-Shrub/Forested/Shallow Marsh
19	0.730	PFO	Forested
20	0.182	PFO	Forested
21	0.484	PFO	Forested
22	0.384	PFO	Forested
23	2.249	PEM/PFO	Emergent/Forested
25	2.976	PEM/PFO/RUBx	Emergent/Forested/Ditch (Excavated)
26	0.050	PFO	Forested
27	0.518	PFO	Forested
28	0.048	PFO	Forested
29	0.203	PFO	Forested
30	9.307	PSS/PFO	Scrub-Shrub/Forested
31	1.001	PFO	Forested
32	2.155	PSS/PFO	Scrub-Shrub/Forested
33	1.133	PFO	Forested
35	2.236	PEM/PFO	Emergent/Forested
36	0.469	PFO	Forested
37	0.094	RUBx	Ditch (Excavated)
38	0.151	PFO	Forested
Total	75.885		

ESTIMATED WETLANDS SUMMARY TABLE

Wetland No	Area (acres)	NWI Type	Type Description
9(X)	2.489	PFO	Forested
13(X)	6.912	PFO/PUBHx	Forested/Shallow Marsh (Excavated)
24(X)	0.435	RUBx	Ditch (Excavated)
25F(X)	0.050	RUBx	Ditch (Excavated)
30(X)	17.886	PEM/PSS/PFO	Emergent/Scrub-Shrub/Forested
34(X)	0.151	PUBHx	Shallow Marsh (Excavated)
35(X)	1.106	PEM/PFO	Emergent/Forested
36(X)	0.394	PFO	Forested
37(X)	0.240	RUBx	Ditch (Excavated)
Total	29.664		

DELINEATED WETLANDS BY TYPE TABLE

NWI Type	Type Description	Area (acres)
PEM	Emergent	13.963
PFO	Forested	39.478
PSS	Scrub-Shrub	14.652
PUB	Shallow Marsh	6.505
RUBx	Ditch (Excavated)	1.287
Total		75.885

ESTIMATED WETLANDS BY TYPE TABLE

NWI Type	Type Description	Area (acres)
PEM	Emergent	1.688
PFO	Forested	26.546
PSS	Scrub-Shrub	0.441
PUBHx	Pond (Excavated)	0.264
RUBx	Ditch (Excavated)	0.725
Total		29.664

STREAM SUMMARY TABLE

Stream	NWI Type	Type Description	Notes	Length (ft)
7C	RUBx	Ditch (Excavated)		1,747.782
8D	RUBx	Ditch (Excavated)		535.578
24(X)	RUBx	Ditch (Excavated)		1,374.130
25F	RUBx	Ditch (Excavated)	Moak Drain	1,062.035
25F(X)	RUBx	Ditch (Excavated)	Moak Drain	133.394
37	RUBx	Ditch (Excavated)		273.725
37(X)	RUBx	Ditch (Excavated)		1,035.998

WETLAND SUMMARY TABLES

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

Note: NWI = National Wetland Inventory

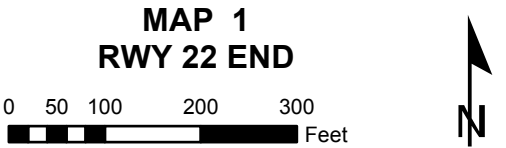
PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



WETLAND BOUNDARY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



Data Sources
1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semco.org/>)
2. Streams, Michigan GIS Open Data, (<https://gis-michigan.opendata.arcgis.com/>)
3. Image Source: NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

Legend

Project Area of Interest (AOI)

- Project Area of Interest (AOI)
- Area not Delineated
- Flow Direction
- Photo Location

Data Point Type

- Upland
- Wetland

Delineated Wetland Type

- Emergent (PEM)
- Forested (PFO)
- Scrub-Shrub (PSS)
- Shallow Marsh (PUB)
- Pond (PUBHx)
- Ditch (RUBx)

Contour Type

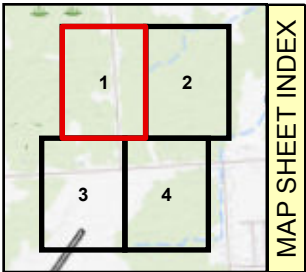
- Index
- Index Depression
- Intermediate
- Intermediate Depression
- Upland

Other Features

- Delineated Wetland
- Stream
- Existing Fence
- Airport Property Boundary
- Pipeline Corridor
- Two-track

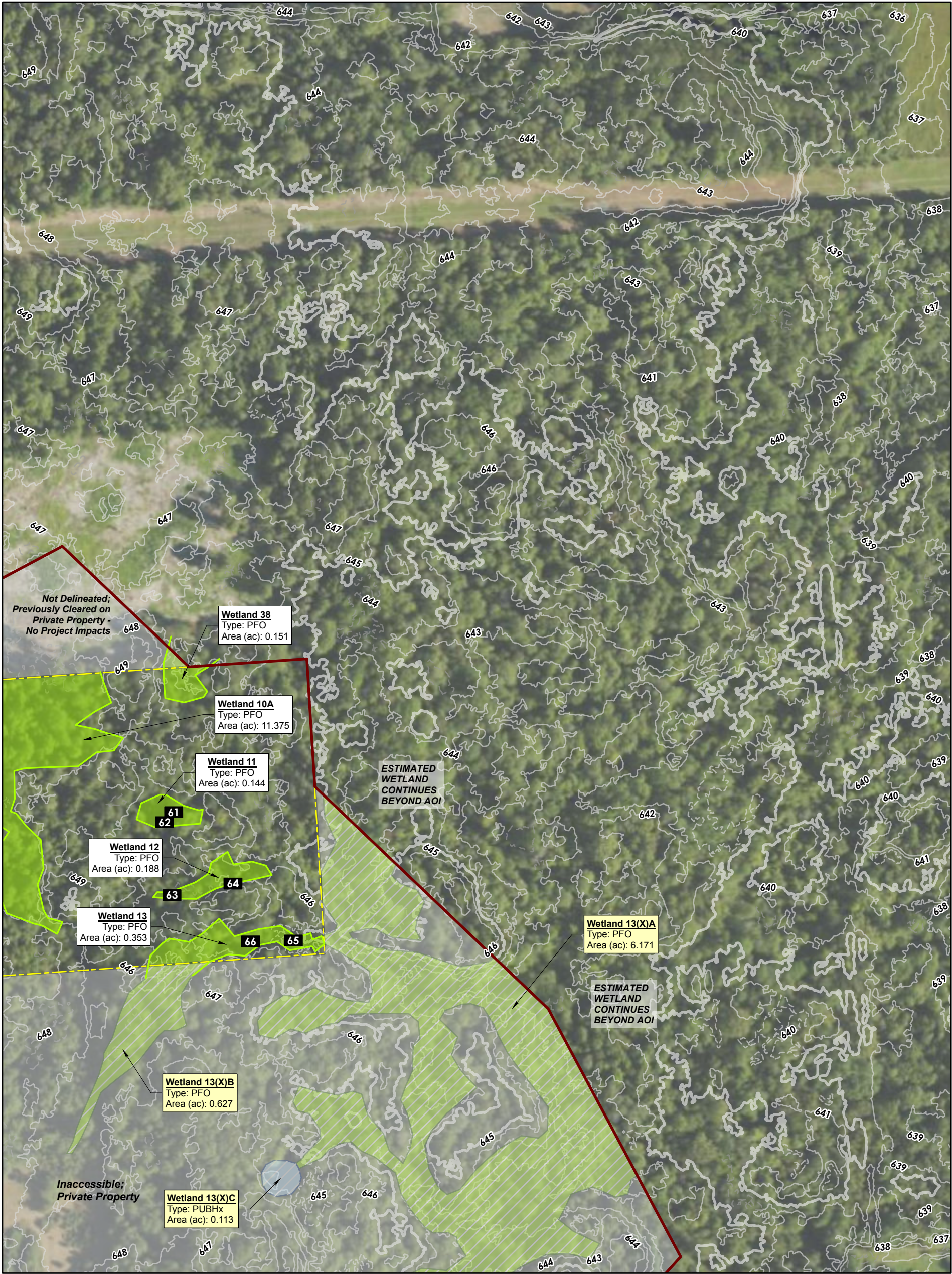
Estimated Wetland Type

- Emergent (PEM)
- Forested (PFO)
- Scrub-Shrub (PSS)
- Pond (PUBHx)
- Ditch (RUBx)



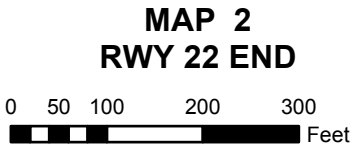
PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



WETLAND BOUNDARY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



Data Sources
1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semcog.org/>)
2. Streams, Michigan GIS Open Data, (<https://gis-michigan.opendata.arcgis.com/>)
3. Image Source: NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

Legend

Project Area of Interest (AOI)

- Project Area of Interest (AOI)
- Area not Delineated
- Flow Direction
- Photo Location

Data Point Type

- Upland
- Wetland

Delineated Wetland Type

- Emergent (PEM)
- Forested (PFO)
- Scrub-Shrub (PSS)
- Shallow Marsh (PUB)
- Pond (PUBHx)
- Ditch (RUBx)

Contour Type

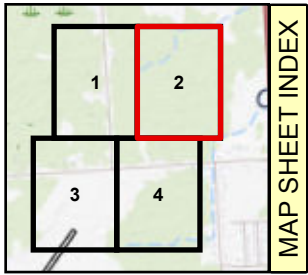
- Index
- Index Depression
- Intermediate
- Intermediate Depression
- Upland

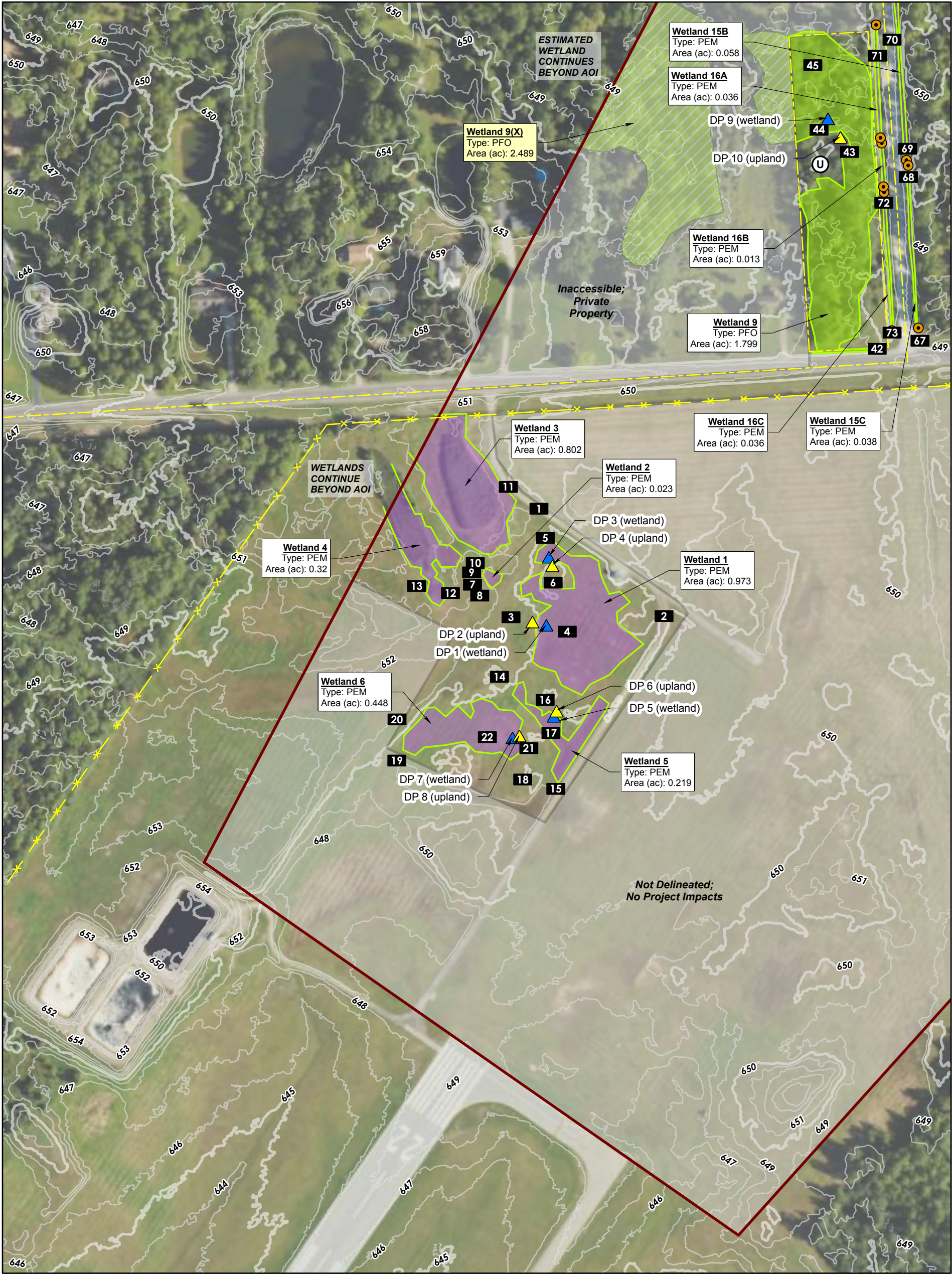
Estimated Wetland Type

- Emergent (PEM)
- Forested (PFO)
- Scrub-Shrub (PSS)
- Pond (PUBHx)
- Ditch (RUBx)

PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023





WETLAND BOUNDARY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

MAP 3
RWY 22 END

0 50 100 200 300 Feet

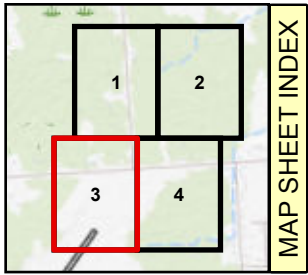
Data Sources
1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semco.org/>)
2. Streams, Michigan GIS Open Data, (<https://gis-michigan.opendata.arcgis.com/>)
3. Image Source: NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

Legend

- Project Area of Interest (AOI)
- Area not Delineated
- Flow Direction
- Photo Location
- Data Point Type
 - Upland
 - Wetland
- Delineated Wetland Type
 - Emergent (PEM)
 - Forested (PFO)
 - Scrub-Shrub (PSS)
 - Shallow Marsh (PUB)
 - Pond (PUBHx)
 - Ditch (RUBx)
- Contour Type
 - Index
 - Index Depression
 - Intermediate
 - Intermediate Depression
 - Upland
- Delineated Wetland
 - Stream
 - Existing Fence
 - Airport Property Boundary
 - Pipeline Corridor
 - Two-track

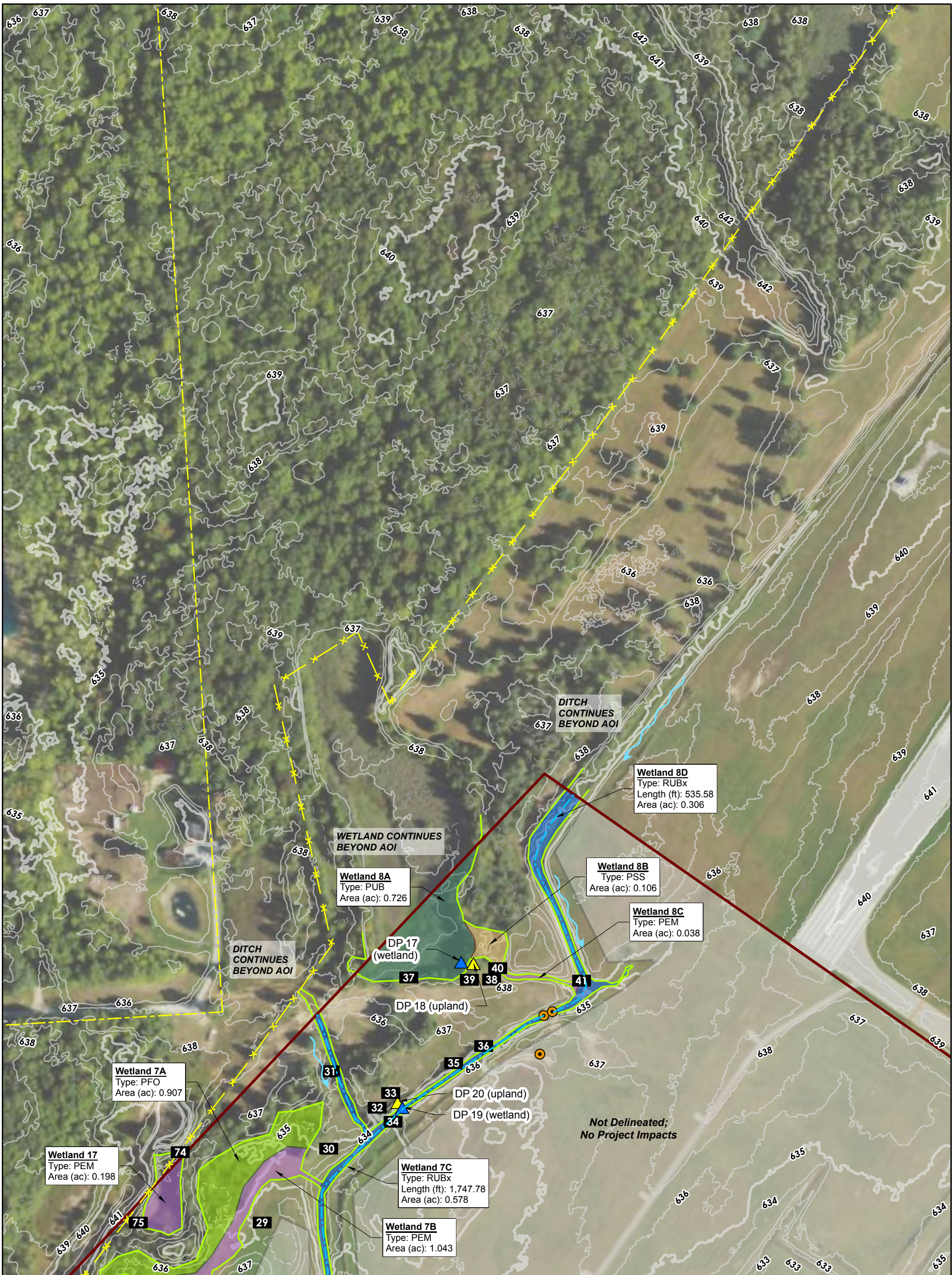
Estimated Wetland Type

- Emergent (PEM)
- Forested (PFO)
- Scrub-Shrub (PSS)
- Pond (PUBHx)
- Ditch (RUBx)



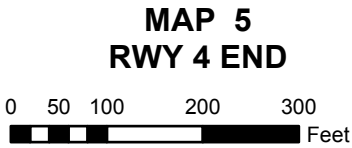
PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



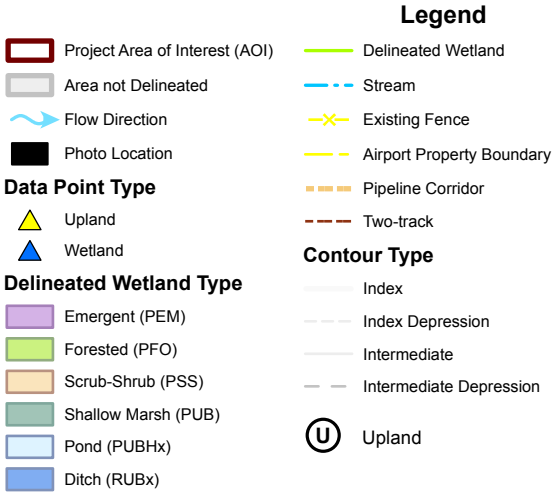
WETLAND BOUNDARY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

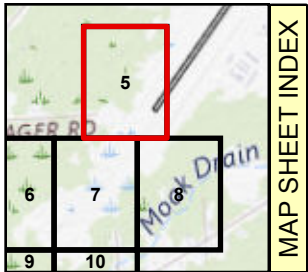
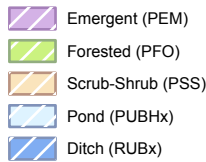


Data Sources

- Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semco.org/>)
- Streams, Michigan GIS Open Data, (<https://gis-michigan.opendata.arcgis.com/>)
- Image Source: NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

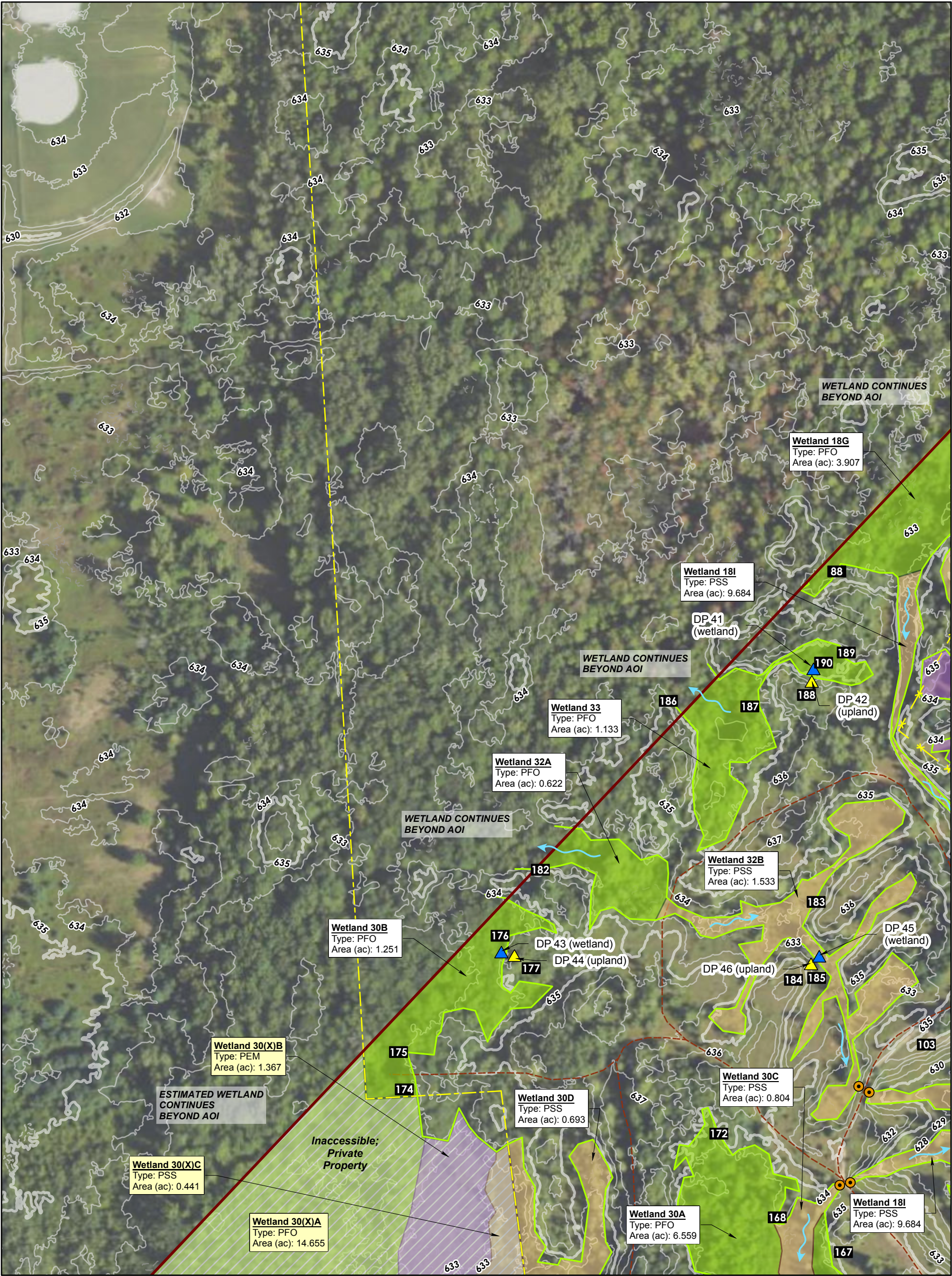


Estimated Wetland Type



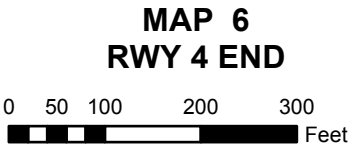
PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



WETLAND BOUNDARY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



Data Sources

1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semco.org/>)

2. Streams, Michigan GIS Open Data, (<https://gis-michigan.opendata.arcgis.com/>)

3. Image Source: NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

Legend

Project Area of Interest (AOI)

- Area not Delineated
- Flow Direction
- Photo Location

Data Point Type

- Upland
- Wetland

Delineated Wetland Type

- Emergent (PEM)
- Forested (PFO)
- Scrub-Shrub (PSS)
- Shallow Marsh (PUB)
- Pond (PUBHx)
- Ditch (RUBx)

Contour Type

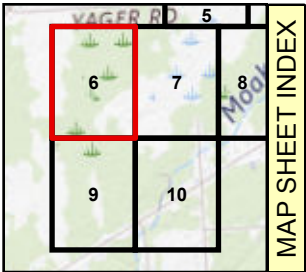
- Index
- Index Depression
- Intermediate
- Intermediate Depression
- Upland

Other Features

- Delineated Wetland
- Stream
- Existing Fence
- Airport Property Boundary
- Pipeline Corridor
- Two-track

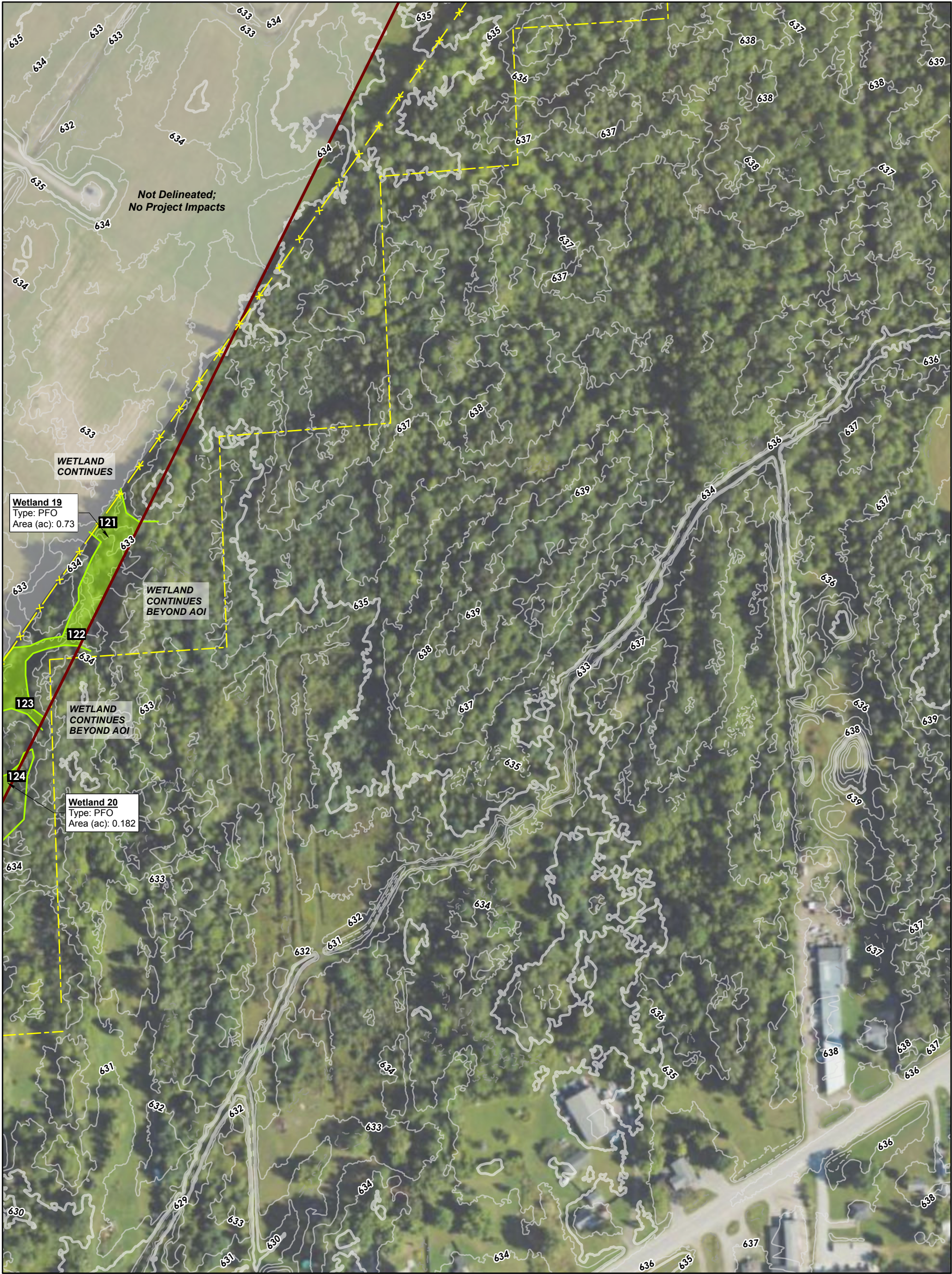
Estimated Wetland Type

- Emergent (PEM)
- Forested (PFO)
- Scrub-Shrub (PSS)
- Pond (PUBHx)
- Ditch (RUBx)



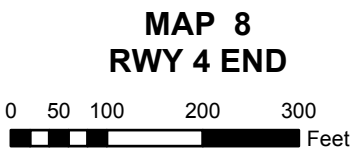
PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



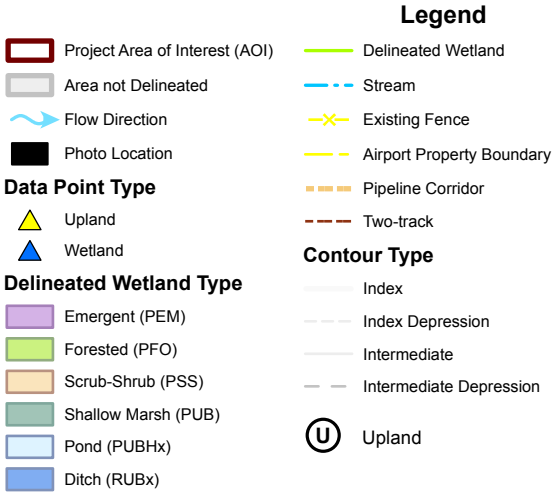
WETLAND BOUNDARY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment

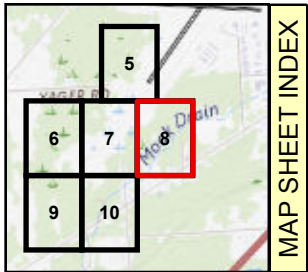
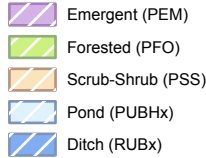


Data Sources

- Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semcog.org/>)
- Streams, Michigan GIS Open Data, (<https://gis-michigan.opendata.arcgis.com/>)
- Image Source: NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022



Estimated Wetland Type



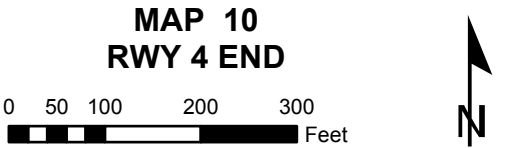
PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023



WETLAND BOUNDARY MAP

St. Clair County International Airport
Runway 4/22 Obstruction Clearing
Environmental Assessment



Data Sources

1. Contours, St. Clair County, 1-foot contour interval generated from 2017 LiDAR acquired by MiSAIL. Data obtained from Southeast Michigan Council of Governments (SEMCOG) GIS Data Portal (<https://contours.semco.org/>)

2. Streams, Michigan GIS Open Data, (<https://gis-michigan.opendata.arcgis.com/>)

3. Image Source: NAIP Imagery (https://gis.apfo.usda.gov/arcgis/services/NAIP/USDA_CONUS_PRIME/ImageServer), 2022

Legend

Project Area of Interest (AOI)
Area not Delineated
Flow Direction
Photo Location

Data Point Type

Upland
Wetland

Delineated Wetland Type

Emergent (PEM)
Forested (PFO)
Scrub-Shrub (PSS)
Shallow Marsh (PUB)
Pond (PUBHx)
Ditch (RUBx)

Stream
Existing Fence
Airport Property Boundary
Pipeline Corridor
Two-track

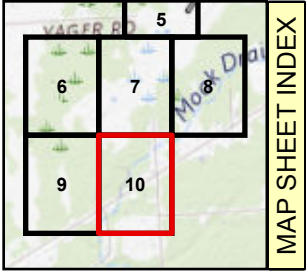
Contour Type

Index
Index Depression
Intermediate
Intermediate Depression

Upland

Estimated Wetland Type

Emergent (PEM)
Forested (PFO)
Scrub-Shrub (PSS)
Pond (PUBHx)
Ditch (RUBx)



PROJECT LOCATION

T6N, R16E Sections 25, 26, 35, and 36
T5N, R16E Sections 2 and 3
Kimball and St. Clair Townships
St. Clair County, MI
LRR Subregion: L
USACE Regional Supplement: NC/NE
Area of Interest: 442.74 acres
USGS Quad: Smiths Creek
Field work: Aug. 16 - 23, Oct. 3 - 7, 2022
June. 6 - 14, Sept. 25 - Oct. 4, 2023

Appendix G Data Sheets

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/16/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP1
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 35, T6N, R16E
Landform (hillside, terrace, etc.): Shallow depression Local relief (concave, convex, none): Concave Slope %: 1
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.9183575 Long: -82.5234191 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>1</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Area mowed frequently.

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: DP1

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>93</u></td> <td>x 1 = <u>93</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>2</u></td> <td>x 3 = <u>6</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>125</u> (A)</td> <td><u>159</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.27</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>93</u>	x 1 = <u>93</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>2</u>	x 3 = <u>6</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>159</u> (B)	Prevalence Index = B/A = <u>1.27</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>93</u>	x 1 = <u>93</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>2</u>	x 3 = <u>6</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>125</u> (A)	<u>159</u> (B)																			
Prevalence Index = B/A = <u>1.27</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Cornus amomum</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: ☒ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Carex pellita</u>	<u>63</u>	<u>Yes</u>	<u>OBL</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Carex flava</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Phragmites australis</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Athyrium angustum</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

SOIL

Sampling Point	DP1
----------------	-----

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/16/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP 2
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 35, T6N, R16E
Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): flat Slope %: 0-1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.918378 Long: -82.523526 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
---	---

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Area is mown frequently.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
---	---

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

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

Remarks:
Wetland hydrology is neither present nor indicated.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP 2

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <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>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>80</u></td> <td>x 4 = <u>320</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>350</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.50</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>80</u>	x 4 = <u>320</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>350</u> (B)	Prevalence Index = B/A = <u>3.50</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>15</u>	x 1 = <u>15</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>80</u>	x 4 = <u>320</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>350</u> (B)																			
Prevalence Index = B/A = <u>3.50</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Poa compressa</u>	<u>39</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Carex flava</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Plantago lanceolata</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Fragaria virginiana</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Pteridium aquilinum</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Apocynum cannabinum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
7. <u>Taraxacum officinale</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
8. <u>Solidago canadensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
9. <u>Achillea millefolium</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
10. <u>Cirsium arvense</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
11. <u>Oxalis stricta</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
12. _____	_____	_____	_____																	
100 =Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
=Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				

 Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is not present. Fails the Prevalence Index at 3.50.

SOIL

Sampling Point DP 2

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/16/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP3
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 35, T6N, R16E
Landform (hillside, terrace, etc.): Shallow swale Local relief (concave, convex, none): concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.918745 Long: -82.523388 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>1</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Area mowed frequently.

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: DP3

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>58</u></td> <td>x 1 = <u>58</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>2</u></td> <td>x 4 = <u>8</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>206</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.79</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>58</u>	x 1 = <u>58</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>2</u>	x 4 = <u>8</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>206</u> (B)	Prevalence Index = B/A = <u>1.79</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>58</u>	x 1 = <u>58</u>																			
FACW species <u>25</u>	x 2 = <u>50</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>2</u>	x 4 = <u>8</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>115</u> (A)	<u>206</u> (B)																			
Prevalence Index = B/A = <u>1.79</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Salix petiolaris</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: ☒ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Carex pellita</u>	<u>58</u>	<u>Yes</u>	<u>OBL</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Athyrium angustum</u>	<u>15</u>	<u>No</u>	<u>FAC</u>																	
3. <u>Equisetum hyemale</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Prunella vulgaris</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
5. <u>Phragmites australis</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
6. <u>Onoclea sensibilis</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
7. <u>Fragaria virginiana</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

SOIL

Sampling Point DP3

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/16/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP4
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 35, T6N, R16E
Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): convex Slope %: 0-1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.918695 Long: -82.523362 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Area is mown frequently.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is neither present nor indicated.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP4

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>25.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <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>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>70</u></td> <td>x 4 = <u>280</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>395</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.43</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>70</u>	x 4 = <u>280</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>115</u> (A)	<u>395</u> (B)	Prevalence Index = B/A = <u>3.43</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>25</u>	x 3 = <u>75</u>																			
FACU species <u>70</u>	x 4 = <u>280</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>115</u> (A)	<u>395</u> (B)																			
Prevalence Index = B/A = <u>3.43</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Cornus racemosa</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Gaultheria procumbens</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Festuca rubra</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Poa compressa</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Fragaria virginiana</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Onoclea sensibilis</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
6. <u>Carex granularis</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
7. <u>Athyrium angustum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
8. <u>Achillea millefolium</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
9. <u>Equisetum hyemale</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
=Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0¹
4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No X

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

Hydrophytic vegetation is not present. About 18 ft separates this sampling point from its paired wetland sampling point (DP3) with 6-8 inches change in elevation

SOIL

Sampling Point DP4

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/17/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP5
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 35, T6N, R16E
Landform (hillside, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.917838 Long: -82.523376 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>5</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Area mowed frequently.

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: DP5

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: 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) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>100</u></td> <td>x 1 = <u>100</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</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>110</u> (A)</td> <td><u>125</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.14</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>100</u>	x 1 = <u>100</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>125</u> (B)	Prevalence Index = B/A = <u>1.14</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>100</u>	x 1 = <u>100</u>																			
FACW species <u>5</u>	x 2 = <u>10</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>125</u> (B)																			
Prevalence Index = B/A = <u>1.14</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <i>Fraxinus pennsylvanica</i>	<u>5</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Cornus racemosa</i>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <i>Carex lupulina</i>	<u>75</u>	<u>Yes</u>	<u>OBL</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <i>Carex pellita</i>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. <i>Iris virginica</i>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

SOIL

Sampling Point DP5

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP6

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>33.3%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>2</u></td> <td>x 2 = <u>4</u></td> </tr> <tr> <td>FAC species <u>14</u></td> <td>x 3 = <u>42</u></td> </tr> <tr> <td>FACU species <u>94</u></td> <td>x 4 = <u>376</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>422</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.84</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>2</u>	x 2 = <u>4</u>	FAC species <u>14</u>	x 3 = <u>42</u>	FACU species <u>94</u>	x 4 = <u>376</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>422</u> (B)	Prevalence Index = B/A = <u>3.84</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>2</u>	x 2 = <u>4</u>																			
FAC species <u>14</u>	x 3 = <u>42</u>																			
FACU species <u>94</u>	x 4 = <u>376</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>422</u> (B)																			
Prevalence Index = B/A = <u>3.84</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Cornus racemosa</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Festuca rubra</u>	<u>45</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. <u>Poa pratensis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Plantago lanceolata</u>	<u>15</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Fragaria virginiana</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Achillea millefolium</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Athyrium angustum</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
7. <u>Onoclea sensibilis</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
8. <u>Rudbeckia hirta</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
9. <u>Equisetum arvense</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
10. <u>Daucus carota</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

Shrub mowed. Hydrophytic vegetation is not present. About 9 ft separates this sampling point from its paired wetland sampling point (DP5) with 8-10 inches change in elevation

SOIL

Sampling Point DP6

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/17/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP7
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 35, T6N, R16E
Landform (hillside, terrace, etc.): Shallow basin Local relief (concave, convex, none): concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.91772 Long: -82.5237 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>6</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Area mowed frequently.

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: DP7

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: 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) Prevalence Index worksheet: <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>88</u></td> <td>x 2 = <u>176</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>188</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.88</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>12</u>	x 1 = <u>12</u>	FACW species <u>88</u>	x 2 = <u>176</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>188</u> (B)	Prevalence Index = B/A = <u>1.88</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>12</u>	x 1 = <u>12</u>																			
FACW species <u>88</u>	x 2 = <u>176</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>188</u> (B)																			
Prevalence Index = B/A = <u>1.88</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Phragmites australis</u>	<u>88</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Penthorum sedoides</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
3. <u>Carex lupulina</u>	<u>3</u>	<u>No</u>	<u>OBL</u>																	
4. <u>Cladium mariscoides</u>	<u>2</u>	<u>No</u>	<u>OBL</u>																	
5. <u>Alisma subcordatum</u>	<u>2</u>	<u>No</u>	<u>OBL</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

SOIL

Sampling Point DP7

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/17/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP8
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 35, T6N, R16E
Landform (hillside, terrace, etc.): Shoulder Local relief (concave, convex, none): Convex Slope %: 3%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.917731 Long: -82.523647 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation X, Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
---	---

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Area mowed frequently.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
---	---

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

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

Remarks:
Wetland hydrology is neither present nor indicated.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP8

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B) Prevalence Index worksheet: <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>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>2</u></td> <td>x 2 = <u>4</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>83</u></td> <td>x 4 = <u>332</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>361</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.61</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>2</u>	x 2 = <u>4</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>83</u>	x 4 = <u>332</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>361</u> (B)	Prevalence Index = B/A = <u>3.61</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>2</u>	x 2 = <u>4</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>83</u>	x 4 = <u>332</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>361</u> (B)																			
Prevalence Index = B/A = <u>3.61</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Poa pratensis</u>	<u>45</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Fragaria virginiana</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Festuca rubra</u>	<u>15</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Lycopus uniflorus</u>	<u>10</u>	<u>No</u>	<u>OBL</u>																	
5. <u>Lotus corniculatus</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Prunella vulgaris</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
7. <u>Onoclea sensibilis</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
8. <u>Athyrium angustum</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
9. <u>Achillea millefolium</u>	<u>1</u>	<u>No</u>	<u>FACU</u>																	
10. <u>Equisetum hyemale</u>	<u>1</u>	<u>No</u>	<u>FAC</u>																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		100 =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

Hydrophytic vegetation is not present. About 12ft separates this sampling point from its paired wetland sampling point (DP7) with 1 ft change in elevation.

SOIL

Sampling Point DP8**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 2/1	98	10YR 4/6	2	C	M	Loamy/Clayey	Prominent redox concentrations
5-7	10YR 5/4	48	10YR 5/8	2	C	M	Sandy	Prominent redox concentrations
	10YR 3/1	48	10YR 5/8	2	C	M	Sandy	Prominent redox concentrations
7-13	10YR 6/3	99	7.5YR 4/6	1	C	M	Sandy	Prominent redox concentrations
13-18	10YR 5/4	100					Sandy	

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

☐ Histosol (A1)	☐ Dark Surface (S7)
☐ Histic Epipedon (A2)	☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Black Histic (A3)	☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Hydrogen Sulfide (A4)	☐ High Chroma Sands (S11) (LRR K, L)
☐ Stratified Layers (A5)	☐ Loamy Mucky Mineral (F1) (LRR K, L)
☐ Depleted Below Dark Surface (A11)	☐ Loamy Gleyed Matrix (F2)
☐ Thick Dark Surface (A12)	☐ Depleted Matrix (F3)
☐ Mesic Spodic (A17)	☒ Redox Dark Surface (F6)
(MLRA 144A, 145, 149B)	☐ Depleted Dark Surface (F7)
☐ Sandy Mucky Mineral (S1)	☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)	☐ Marl (F10) (LRR K, L)
☐ Sandy Redox (S5)	☐ Red Parent Material (F21) (MLRA 145)
☐ Stripped Matrix (S6)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Red Parent Material (F21) (outside MLRA 145)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____**Remarks:**

Hydric soils are present. Hydric soils indicator Redox Dark Surface (F6) is satisfied.

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/18/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP9
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 26, T6N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.921208 Long: -82.5211508 Datum: WGS84
Soil Map Unit Name: Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>9</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range.

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: DP9

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. <u>Ulmus americana</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Quercus bicolor</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Betula papyrifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>75</u> =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Frangula alnus</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>102</u></td> <td>x 2 = <u>204</u></td> </tr> <tr> <td>FAC species <u>105</u></td> <td>x 3 = <u>315</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>227</u> (A)</td> <td><u>554</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.44</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>102</u>	x 2 = <u>204</u>	FAC species <u>105</u>	x 3 = <u>315</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>227</u> (A)	<u>554</u> (B)	Prevalence Index = B/A = <u>2.44</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>15</u>	x 1 = <u>15</u>																			
FACW species <u>102</u>	x 2 = <u>204</u>																			
FAC species <u>105</u>	x 3 = <u>315</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>227</u> (A)	<u>554</u> (B)																			
Prevalence Index = B/A = <u>2.44</u>																				
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Rubus idaeus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>60</u> =Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Carex cristatella</u>	<u>60</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Glyceria striata</u>	<u>15</u>	<u>No</u>	<u>OBL</u>																	
3. <u>Solidago gigantea</u>	<u>3</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Onoclea sensibilis</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Persicaria virginiana</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>82</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Vitis riparia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
<u>10</u> =Total Cover																				

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

Hydrophytic vegetation is present. Some bare ground. Sphagnum moss also present.

SOIL

Sampling Point DP9

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/18/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP10
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 26, T6N, R16E
Landform (hillside, terrace, etc.): Flat Local relief (concave, convex, none): Convex Slope %: 1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.921100 Long: -82.521056 Datum: WGS84
Soil Map Unit Name: Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
---	---

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
---	---

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

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

Remarks:
Wetland hydrology is neither present nor indicated.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP10

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Pinus sylvestris</i></u>	<u>25</u>	<u>Yes</u>	<u>UPL</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																
2. <u><i>Quercus bicolor</i></u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u><i>Fraxinus pennsylvanica</i></u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
4. <u><i>Populus tremuloides</i></u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>55</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">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>52</u></td> <td>x 2 = <u>104</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>25</u></td> <td>x 5 = <u>125</u></td> </tr> <tr> <td>Column Totals: <u>127</u></td> <td>(A) <u>394</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.10</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>52</u>	x 2 = <u>104</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>25</u>	x 5 = <u>125</u>	Column Totals: <u>127</u>	(A) <u>394</u> (B)	Prevalence Index = B/A = <u>3.10</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</u>																			
FACW species <u>52</u>	x 2 = <u>104</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>25</u>	x 4 = <u>100</u>																			
UPL species <u>25</u>	x 5 = <u>125</u>																			
Column Totals: <u>127</u>	(A) <u>394</u> (B)																			
Prevalence Index = B/A = <u>3.10</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u><i>Frangula alnus</i></u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u><i>Fraxinus pennsylvanica</i></u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>12</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u><i>Carex cristatella</i></u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u><i>Circaea canadensis</i></u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u><i>Glyceria striata</i></u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
4. <u><i>Toxicodendron radicans</i></u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>45</u>	=Total Cover	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u><i>Parthenocissus quinquefolia</i></u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		<u>15</u>	=Total Cover																	

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

Hydrophytic vegetation is not present. Fails the Prevalence Index at 3.10. Some bare ground present. About 45 ft separates this sampling point from its paired wetland point (DP9) with 6-8in change in elevation.

SOIL

Sampling Point DP10

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/19/22

Applicant/Owner: St. Clair County State: MI Sampling Point: DP11

Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 25, T6N, R16E

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

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.921570 Long: -82.51960 Datum: WGS84

Soil Map Unit Name: Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric) NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>10A</u>
---	--

Remarks: (Explain alternative procedures here or in a separate report.)
 An analysis of antecedent precipitation indicates that environmental conditions were within normal range.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> X </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> X </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> X </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
---	--

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

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

Remarks:
 Wetland hydrology is indicated

VEGETATION – Use scientific names of plants.

 Sampling Point: DP11

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																									
1. <u>Acer rubrum</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 10%;"></th> <th style="width: 10%;">Multiply by:</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td><u>25</u></td> <td>x 1 =</td> <td><u>25</u></td> <td></td> </tr> <tr> <td>FACW species</td> <td><u>93</u></td> <td>x 2 =</td> <td><u>186</u></td> <td></td> </tr> <tr> <td>FAC species</td> <td><u>37</u></td> <td>x 3 =</td> <td><u>111</u></td> <td></td> </tr> <tr> <td>FACU species</td> <td><u>0</u></td> <td>x 4 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td><u>155</u></td> <td>(A)</td> <td><u>322</u></td> <td>(B)</td> </tr> <tr> <td colspan="5">Prevalence Index = B/A = <u>2.08</u></td> </tr> </tbody> </table>	Total % Cover of:		Multiply by:			OBL species	<u>25</u>	x 1 =	<u>25</u>		FACW species	<u>93</u>	x 2 =	<u>186</u>		FAC species	<u>37</u>	x 3 =	<u>111</u>		FACU species	<u>0</u>	x 4 =	<u>0</u>		UPL species	<u>0</u>	x 5 =	<u>0</u>		Column Totals:	<u>155</u>	(A)	<u>322</u>	(B)	Prevalence Index = B/A = <u>2.08</u>				
Total % Cover of:		Multiply by:																																										
OBL species	<u>25</u>	x 1 =	<u>25</u>																																									
FACW species	<u>93</u>	x 2 =	<u>186</u>																																									
FAC species	<u>37</u>	x 3 =	<u>111</u>																																									
FACU species	<u>0</u>	x 4 =	<u>0</u>																																									
UPL species	<u>0</u>	x 5 =	<u>0</u>																																									
Column Totals:	<u>155</u>	(A)	<u>322</u>	(B)																																								
Prevalence Index = B/A = <u>2.08</u>																																												
2. <u>Ulmus americana</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>																																									
3. <u>Quercus bicolor</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																																									
4. _____	_____	_____	_____																																									
5. _____	_____	_____	_____																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
		<u>70</u>	=Total Cover																																									
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																																												
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																								
2. <u>Quercus bicolor</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																																									
3. _____	_____	_____	_____																																									
4. _____	_____	_____	_____																																									
5. _____	_____	_____	_____																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
		<u>20</u>	=Total Cover																																									
Herb Stratum (Plot size: <u>5 ft</u>)																																												
1. <u>Carex cristatella</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																								
2. <u>Glyceria striata</u>	<u>25</u>	<u>Yes</u>	<u>OBL</u>																																									
3. <u>Solidago gigantea</u>	<u>8</u>	<u>No</u>	<u>FACW</u>																																									
4. <u>Persicaria virginiana</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																																									
5. <u>Geum aleppicum</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
8. _____	_____	_____	_____																																									
9. _____	_____	_____	_____																																									
10. _____	_____	_____	_____																																									
11. _____	_____	_____	_____																																									
12. _____	_____	_____	_____																																									
		<u>65</u>	=Total Cover																																									
Woody Vine Stratum (Plot size: <u>15 ft</u>)																																												
1. _____	_____	_____	_____																																									
2. _____	_____	_____	_____																																									
3. _____	_____	_____	_____																																									
4. _____	_____	_____	_____																																									
		_____	=Total Cover																																									

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

Hydrophytic vegetation is present. Sphagnum moss and a large cottonwood also present. Some bare soil.

SOIL

Sampling Point DP11

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/19/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP12
Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 25, T6N, R16E
Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): none Slope %: 1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.921591 Long: -82.51968 Datum: WGS84
Soil Map Unit Name: Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is neither present nor indicated.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP12

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>55.6%</u> (A/B)																
2. <u>Ulmus americana</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>55</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>58</u></td> <td>x 3 = <u>174</u></td> </tr> <tr> <td>FACU species <u>140</u></td> <td>x 4 = <u>560</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>238</u> (A)</td> <td><u>809</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.40</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>58</u>	x 3 = <u>174</u>	FACU species <u>140</u>	x 4 = <u>560</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>238</u> (A)	<u>809</u> (B)	Prevalence Index = B/A = <u>3.40</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</u>																			
FACW species <u>35</u>	x 2 = <u>70</u>																			
FAC species <u>58</u>	x 3 = <u>174</u>																			
FACU species <u>140</u>	x 4 = <u>560</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>238</u> (A)	<u>809</u> (B)																			
Prevalence Index = B/A = <u>3.40</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Rosa multiflora</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Rubus hispidus</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Berberis thunbergii</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Frangula alnus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>35</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Solidago gigantea</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Glyceria striata</u>	<u>5</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Maianthemum canadense</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Carex cristatella</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
5. <u>Galium boreale</u>	<u>3</u>	<u>No</u>	<u>FAC</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>28</u>	=Total Cover																	
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Parthenocissus quinquefolia</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. <u>Celastrus orbiculatus</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		<u>120</u>	=Total Cover	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																

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

Hydrophytic vegetation is present. Paper birch also present in uplands beyond tree sampling area.

SOIL

Sampling Point	DP12
----------------	------

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/22/22

Applicant/Owner: St. Clair County State: MI Sampling Point: DP13

Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 25, T6N, R16E

Landform (hillside, terrace, etc.): Shallow depressional drainageway Local relief (concave, convex, none): Concave Slope %: <1%

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.923300 Long: -82.520261 Datum: WGS84

Soil Map Unit Name: Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric) NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>10A</u>
---	--

Remarks: (Explain alternative procedures here or in a separate report.)
 An analysis of antecedent precipitation indicates that environmental conditions were within normal range.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> X </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> X </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
---	--

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

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

Remarks:
 Wetland hydrology is indicated. More than 5 percent vegetative cover in herbaceous layer so does not meet Sparsely Vegetated Concance Surface (B8).

VEGETATION – Use scientific names of plants.

 Sampling Point: DP13

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57.1%</u> (A/B)																
2. <u>Tilia americana</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Quercus bicolor</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Carpinus caroliniana</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>65</u>	=Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Fraxinus pennsylvanica</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>42</u></td> <td>x 3 = <u>126</u></td> </tr> <tr> <td>FACU species <u>45</u></td> <td>x 4 = <u>180</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>127</u> (A)</td> <td><u>386</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.04</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>42</u>	x 3 = <u>126</u>	FACU species <u>45</u>	x 4 = <u>180</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>127</u> (A)	<u>386</u> (B)	Prevalence Index = B/A = <u>3.04</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>40</u>	x 2 = <u>80</u>																			
FAC species <u>42</u>	x 3 = <u>126</u>																			
FACU species <u>45</u>	x 4 = <u>180</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>127</u> (A)	<u>386</u> (B)																			
Prevalence Index = B/A = <u>3.04</u>																				
2. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Ribes cynosbati</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Berberis thunbergii</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>50</u>	=Total Cover																	
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Doellingeria umbellata</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Fragaria virginiana</u>	<u>3</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Toxicodendron radicans</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Geranium maculatum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>12</u>	=Total Cover																	
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	

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

Sphagnum moss present. Mostly bare surface, moist woods. Hydrophytic vegetation is present.

SOIL

Sampling Point DP13

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP14

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Tilia americana</i></u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57.1%</u> (A/B)																
2. <u><i>Carpinus caroliniana</i></u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u><i>Prunus serotina</i></u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>80</u> =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u><i>Fraxinus pennsylvanica</i></u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>32</u></td> <td>x 3 = <u>96</u></td> </tr> <tr> <td>FACU species <u>140</u></td> <td>x 4 = <u>560</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>207</u> (A)</td> <td><u>726</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.51</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>32</u>	x 3 = <u>96</u>	FACU species <u>140</u>	x 4 = <u>560</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>207</u> (A)	<u>726</u> (B)	Prevalence Index = B/A = <u>3.51</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>35</u>	x 2 = <u>70</u>																			
FAC species <u>32</u>	x 3 = <u>96</u>																			
FACU species <u>140</u>	x 4 = <u>560</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>207</u> (A)	<u>726</u> (B)																			
Prevalence Index = B/A = <u>3.51</u>																				
2. <u><i>Ribes cynosbati</i></u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>35</u> =Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u><i>Fraxinus pennsylvanica</i></u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u><i>Carpinus caroliniana</i></u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u><i>Circaea canadensis</i></u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. <u><i>Persicaria virginiana</i></u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>27</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u><i>Celastrus orbiculatus</i></u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. <u><i>Parthenocissus quinquefolia</i></u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
<u>65</u> =Total Cover																				
Hydrophytic Vegetation Present? Yes <u>X</u> No _____																				

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

Hydrophytic vegetation is present. Cherry along boundary. About 18 ft separates this sampling point from its paired wetland sampling point (DP13) with 6-8 inches change in elevation.

SOIL

Sampling Point DP14

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 8/23/22

Applicant/Owner: St. Clair County State: MI Sampling Point: DP15

Investigator(s): Brauna Hartzell & Caroline Bruchman, Mead & Hunt, Inc. Section, Township, Range: Section 25, T6N, R16E

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

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.924377 Long: -82.519636 Datum: WGS84

Soil Map Unit Name: Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric) NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>10A</u>
---	--

Remarks: (Explain alternative procedures here or in a separate report.)
 An analysis of antecedent precipitation indicates that environmental conditions were within normal range.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> X </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> X </u> Sparsely Vegetated Concave Surface (B8) <u> X </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
--	--	---

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

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

Remarks:
 Wetland hydrology is indicated.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP15

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>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>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>90</u></td> <td>x 3 = <u>270</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>120</u> (A)</td> <td><u>325</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.71</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>90</u>	x 3 = <u>270</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>325</u> (B)	Prevalence Index = B/A = <u>2.71</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</u>																			
FACW species <u>25</u>	x 2 = <u>50</u>																			
FAC species <u>90</u>	x 3 = <u>270</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>120</u> (A)	<u>325</u> (B)																			
Prevalence Index = B/A = <u>2.71</u>																				
2. <u>Populus deltoides</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Ulmus americana</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>100</u> =Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Fraxinus pennsylvanica</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>15</u> =Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Glyceria striata</u>	<u>3</u>	<u>Yes</u>	<u>OBL</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Carex vulpinoidea</u>	<u>2</u>	<u>Yes</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>5</u> =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____ =Total Cover																		

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

Hydrophytic vegetation is present. Carex lupulina also present within wetland; surface is mostly bare. Two dead green ash trees were observed, likely dead from emerald ash borer and were not included in the cover calculations.

SOIL

Sampling Point DP15

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP16

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>42.9%</u> (A/B)																
2. <u>Betula papyrifera</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Ulmus americana</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>50</u>	=Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Rosa multiflora</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>115</u></td> <td>x 4 = <u>460</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>185</u> (A)</td> <td><u>650</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.51</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>115</u>	x 4 = <u>460</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>185</u> (A)	<u>650</u> (B)	Prevalence Index = B/A = <u>3.51</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>50</u>	x 3 = <u>150</u>																			
FACU species <u>115</u>	x 4 = <u>460</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>185</u> (A)	<u>650</u> (B)																			
Prevalence Index = B/A = <u>3.51</u>																				
2. <u>Viburnum lentago</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Quercus bicolor</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Berberis thunbergii</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Rhamnus cathartica</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
7. _____	_____	_____	_____																	
		<u>55</u>	=Total Cover																	
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ 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. _____	_____	_____	_____																	
		_____	=Total Cover																	
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Celastrus orbiculatus</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. <u>Parthenocissus quinquefolia</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		<u>80</u>	=Total Cover																	

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

Hydrophytic vegetation is not present. Little is present in herbaceous stratum, likely due to shading of heavy shrub and vine layers. About 25 ft separates this sampling point from its paired wetland sampling point (DP15) with 6-8 inches change in elevation

SOIL

Sampling Point	DP16
----------------	------

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/3/22

Applicant/Owner: St. Clair County State: MI Sampling Point: DP17

Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 35, T6N, R16E

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

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.904669 Long: -82.538013 Datum: WGS84

Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: PUBH

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

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

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

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>8A</u>
---	---

Remarks: (Explain alternative procedures here or in a separate report.)
 An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Data point taken within deperssional basin.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
--	--	---

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

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

Remarks:
 Wetland hydrology is indicated.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP17

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																									
1. <u>Acer rubrum</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: 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) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 10%;"></th> <th style="width: 10%;">Multiply by:</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td><u>30</u></td> <td>x 1 =</td> <td><u>30</u></td> <td></td> </tr> <tr> <td>FACW species</td> <td><u>70</u></td> <td>x 2 =</td> <td><u>140</u></td> <td></td> </tr> <tr> <td>FAC species</td> <td><u>65</u></td> <td>x 3 =</td> <td><u>195</u></td> <td></td> </tr> <tr> <td>FACU species</td> <td><u>0</u></td> <td>x 4 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td><u>165</u></td> <td>(A)</td> <td><u>365</u></td> <td>(B)</td> </tr> <tr> <td colspan="5">Prevalence Index = B/A = <u>2.21</u></td> </tr> </tbody> </table>	Total % Cover of:		Multiply by:			OBL species	<u>30</u>	x 1 =	<u>30</u>		FACW species	<u>70</u>	x 2 =	<u>140</u>		FAC species	<u>65</u>	x 3 =	<u>195</u>		FACU species	<u>0</u>	x 4 =	<u>0</u>		UPL species	<u>0</u>	x 5 =	<u>0</u>		Column Totals:	<u>165</u>	(A)	<u>365</u>	(B)	Prevalence Index = B/A = <u>2.21</u>				
Total % Cover of:		Multiply by:																																										
OBL species	<u>30</u>	x 1 =	<u>30</u>																																									
FACW species	<u>70</u>	x 2 =	<u>140</u>																																									
FAC species	<u>65</u>	x 3 =	<u>195</u>																																									
FACU species	<u>0</u>	x 4 =	<u>0</u>																																									
UPL species	<u>0</u>	x 5 =	<u>0</u>																																									
Column Totals:	<u>165</u>	(A)	<u>365</u>	(B)																																								
Prevalence Index = B/A = <u>2.21</u>																																												
2. _____	_____	_____	_____																																									
3. _____	_____	_____	_____																																									
4. _____	_____	_____	_____																																									
5. _____	_____	_____	_____																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
	<u>50</u>	=Total Cover																																										
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																																												
1. <u>Cephalanthus occidentalis</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																								
2. <u>Frangula alnus</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																																									
3. _____	_____	_____	_____																																									
4. _____	_____	_____	_____																																									
5. _____	_____	_____	_____																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
	<u>45</u>	=Total Cover																																										
Herb Stratum (Plot size: <u>5 ft</u>)																																												
1. <u>Phragmites australis</u>	<u>70</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																								
2. _____	_____	_____	_____																																									
3. _____	_____	_____	_____																																									
4. _____	_____	_____	_____																																									
5. _____	_____	_____	_____																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
8. _____	_____	_____	_____																																									
9. _____	_____	_____	_____																																									
10. _____	_____	_____	_____																																									
11. _____	_____	_____	_____																																									
12. _____	_____	_____	_____																																									
	<u>70</u>	=Total Cover																																										
Woody Vine Stratum (Plot size: <u>15 ft</u>)																																												
1. _____	_____	_____	_____																																									
2. _____	_____	_____	_____																																									
3. _____	_____	_____	_____																																									
4. _____	_____	_____	_____																																									
		=Total Cover																																										

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

Hydrophytic vegetation is present.. Large stand of phragmites with fringe of larger trees and shrubs.

SOIL

Sampling Point DP17

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/3/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP17
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 35, T6N, R16E
Landform (hillside, terrace, etc.): Basin Local relief (concave, convex, none): Concave Slope %: <1
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.904669 Long: -82.538013 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: PEM5C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>8A</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Data point taken within depressional basin.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
---	---

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

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

Remarks:
Wetland hydrology is indicated.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP17

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: 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) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>30</u></td> <td>x 1 = <u>30</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>65</u></td> <td>x 3 = <u>195</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>165</u> (A)</td> <td><u>365</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.21</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>30</u>	x 1 = <u>30</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>65</u>	x 3 = <u>195</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>165</u> (A)	<u>365</u> (B)	Prevalence Index = B/A = <u>2.21</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>30</u>	x 1 = <u>30</u>																			
FACW species <u>70</u>	x 2 = <u>140</u>																			
FAC species <u>65</u>	x 3 = <u>195</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>165</u> (A)	<u>365</u> (B)																			
Prevalence Index = B/A = <u>2.21</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>50</u>	=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Cephalanthus occidentalis</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Frangula alnus</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>45</u>	=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Phragmites australis</u>	<u>70</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u>70</u>	=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____	=Total Cover																		

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

Hydrophytic vegetation is present. Large stand of phragmites with fringe of larger trees and shrubs.

SOIL

Sampling Point DP17

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP18

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Betula papyrifera</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>77.8%</u> (A/B)																
2. <u>Acer rubrum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Populus tremuloides</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>80</u>		<u>=Total Cover</u>		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>95</u></td> <td>x 3 = <u>285</u></td> </tr> <tr> <td>FACU species <u>80</u></td> <td>x 4 = <u>320</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>180</u></td> <td>(A) <u>615</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.42</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>95</u>	x 3 = <u>285</u>	FACU species <u>80</u>	x 4 = <u>320</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>180</u>	(A) <u>615</u> (B)	Prevalence Index = B/A = <u>3.42</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>95</u>	x 3 = <u>285</u>																			
FACU species <u>80</u>	x 4 = <u>320</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>180</u>	(A) <u>615</u> (B)																			
Prevalence Index = B/A = <u>3.42</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Frangula alnus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Spiraea alba</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Acer rubrum</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>20</u>		<u>=Total Cover</u>		Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Pteridium aquilinum</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Solidago rugosa</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>70</u>		<u>=Total Cover</u>																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Vitis riparia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
<u>10</u>		<u>=Total Cover</u>		Hydrophytic Vegetation Present? Yes <u>X</u> No _____																

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

Hydrophytic vegetation is present. About 20 ft separates this sampling point from its paired wetland sampling point (DP17) with 3 ft change in elevation

SOIL

Sampling Point DP18

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/3/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP19
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 2, T5N, R16E
Landform (hillside, terrace, etc.): Ditch/swale Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.903848 Long: -82.5384928 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: R2UBFx
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil X , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>7C</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Data point taken in ditch at edge near toeslope. Soils and hydrology altered due to ditch construction.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> X </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> X </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> X </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
--	---

Field Observations: Surface Water Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 4 </u> Water Table Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 3 </u> Saturation Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
---	---

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

Remarks:
Wetland hydrology is present and indicated. Standing water in ditch.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP19

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</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				Prevalence Index worksheet: <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>45</u></td> <td>x 1 = <u>45</u></td> </tr> <tr> <td>FACW species <u>75</u></td> <td>x 2 = <u>150</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</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>160</u> (A)</td> <td><u>315</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.97</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>45</u>	x 1 = <u>45</u>	FACW species <u>75</u>	x 2 = <u>150</u>	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>160</u> (A)	<u>315</u> (B)	Prevalence Index = B/A = <u>1.97</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>45</u>	x 1 = <u>45</u>																			
FACW species <u>75</u>	x 2 = <u>150</u>																			
FAC species <u>40</u>	x 3 = <u>120</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>160</u> (A)	<u>315</u> (B)																			
Prevalence Index = B/A = <u>1.97</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Alnus incana</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Frangula alnus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover																				
=Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Cladium mariscoides</u>	<u>30</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Juncus dudleyi</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Solidago rugosa</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Schoenoplectus tabernaemontani</u>	<u>10</u>	<u>No</u>	<u>OBL</u>																	
5. <u>Eupatorium perfoliatum</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
6. <u>Phragmites australis</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
7. <u>Gentiana clausa</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
8. <u>Sium suave</u>	<u>3</u>	<u>No</u>	<u>OBL</u>																	
9. <u>Alisma subcordatum</u>	<u>2</u>	<u>No</u>	<u>OBL</u>																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
=Total Cover																				
=Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Vitis riparia</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				
=Total Cover																				

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0¹
4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)
¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point DP19[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP20

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Prunus pensylvanica</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>42.9%</u> (A/B)																
2. <u>Populus grandidentata</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Populus tremuloides</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>45</u>	=Total Cover	Prevalence Index worksheet: <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>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>105</u></td> <td>x 4 = <u>420</u></td> </tr> <tr> <td>UPL species <u>13</u></td> <td>x 5 = <u>65</u></td> </tr> <tr> <td>Column Totals: <u>148</u> (A)</td> <td><u>565</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.82</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>20</u>	x 3 = <u>60</u>	FACU species <u>105</u>	x 4 = <u>420</u>	UPL species <u>13</u>	x 5 = <u>65</u>	Column Totals: <u>148</u> (A)	<u>565</u> (B)	Prevalence Index = B/A = <u>3.82</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>20</u>	x 3 = <u>60</u>																			
FACU species <u>105</u>	x 4 = <u>420</u>																			
UPL species <u>13</u>	x 5 = <u>65</u>																			
Column Totals: <u>148</u> (A)	<u>565</u> (B)																			
Prevalence Index = B/A = <u>3.82</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Lonicera X bella</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Frangula alnus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Rosa multiflora</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>30</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Poa pratensis</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Phragmites australis</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Leucanthemum vulgare</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
4. <u>Achillea millefolium</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Festuca rubra</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Pteridium aquilinum</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
7. <u>Rubus occidentalis</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
8. <u>Fragaria virginiana</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
9. <u>Daucus carota</u>	<u>3</u>	<u>No</u>	<u>UPL</u>																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>73</u>	=Total Cover	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	
Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																				

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

Area cleared from shrubs; bare ground present. Hydrophytic vegetation is not present. About 5 ft change in elevation

SOIL

Sampling Point DP20

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/4/22

Applicant/Owner: St. Clair County State: MI Sampling Point: DP21

Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E

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

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.902884 Long: -82.540098 Datum: WGS84

Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>7B</u>
---	---

Remarks: (Explain alternative procedures here or in a separate report.)
 An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Area mowed; Data point at edge in mowed area. Vegetation IDs for herb stratum mostly by reference to unmown areas.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
--	--	---

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

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

Remarks:
 Wetland hydrology is indicated.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP21

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>60</u></td> <td>x 1 = <u>60</u></td> </tr> <tr> <td>FACW species <u>80</u></td> <td>x 2 = <u>160</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>180</u> (A)</td> <td><u>350</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.94</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>60</u>	x 1 = <u>60</u>	FACW species <u>80</u>	x 2 = <u>160</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>180</u> (A)	<u>350</u> (B)	Prevalence Index = B/A = <u>1.94</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>60</u>	x 1 = <u>60</u>																			
FACW species <u>80</u>	x 2 = <u>160</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>180</u> (A)	<u>350</u> (B)																			
Prevalence Index = B/A = <u>1.94</u>																				
2. <u>Betula papyrifera</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>40</u> =Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Cephalanthus occidentalis</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>40</u> =Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Phragmites australis</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Phalaris arundinacea</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Typha angustifolia</u>	<u>15</u>	<u>No</u>	<u>OBL</u>																	
4. <u>Iris virginica</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>100</u> =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____ =Total Cover																		

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

Hydrophytic vegetation is present. Purple looserife and tag alder also present in wetland. Vegetation IDs in herb stratum made by reference to unmown areas; shrub and tree layers present within sampling plot.

SOIL

Sampling Point DP21

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP22

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <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>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>30</u></td> <td>x 4 = <u>120</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>260</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.60</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>30</u>	x 4 = <u>120</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>260</u> (B)	Prevalence Index = B/A = <u>2.60</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>20</u>	x 1 = <u>20</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>30</u>	x 4 = <u>120</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>260</u> (B)																			
Prevalence Index = B/A = <u>2.60</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Rubus hispidus</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Carex flava</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Cornus racemosa</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Fragaria virginiana</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
5. <u>Pteridium aquilinum</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Achillea millefolium</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
7. <u>Eurybia macrophylla</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>100</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				

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

Hydrophytic vegetation is present. All vegetation mowed to about 6 inches. Potentilla sp. also present. Vegetation IDs mostly by reference to unmown areas. About 30 ft separates this sampling point from its paired wetland sampling point (DP21) with 1 -2 ft change in elevation

SOIL

Sampling Point DP22

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/5/22

Applicant/Owner: St. Clair County State: MI Sampling Point: DP23

Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E

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

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.898477 Long: -82.543959 Datum: WGS84

Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric) NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>18J</u>
---	--

Remarks: (Explain alternative procedures here or in a separate report.)
 An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Area mowed periodically; about 6-8in regrowth present, making vegetation ID reliable.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
---	--	---

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

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

Remarks:
 Wetland hydrology is indicated.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP23

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: 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) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</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></td> <td>(A) <u>180</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>20</u>	x 3 = <u>60</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>180</u> (B)	Prevalence Index = B/A = <u>2.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>20</u>	x 1 = <u>20</u>																			
FACW species <u>50</u>	x 2 = <u>100</u>																			
FAC species <u>20</u>	x 3 = <u>60</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>180</u> (B)																			
Prevalence Index = B/A = <u>2.00</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Athyrium angustum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																
2. <u>Phalaris arundinacea</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Dichanthelium clandestinum</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u>Phragmites australis</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																	
5. <u>Juncus effusus</u>	<u>10</u>	<u>No</u>	<u>OBL</u>																	
6. <u>Scirpus atrovirens</u>	<u>10</u>	<u>No</u>	<u>OBL</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		90 =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

Hydrophytic vegetation is present. Matted vegetation from mowing has inhibited regrowth in some areas along the boundary.

SOIL

Sampling Point DP23**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 3/1	98	7.5YR 4/4	2	C	M	Loamy/Clayey	Prominent redox concentrations
6-12	10YR 3/1	90	7.5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
12-14	10YR 2/1	95	7.5YR 4/4	5	C	M	Sandy	Prominent redox concentrations
14-20	10YR 4/1	100					Sandy	

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

☐ Histosol (A1)	☐ Dark Surface (S7)
☐ Histic Epipedon (A2)	☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Black Histic (A3)	☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Hydrogen Sulfide (A4)	☐ High Chroma Sands (S11) (LRR K, L)
☐ Stratified Layers (A5)	☐ Loamy Mucky Mineral (F1) (LRR K, L)
☐ Depleted Below Dark Surface (A11)	☐ Loamy Gleyed Matrix (F2)
☐ Thick Dark Surface (A12)	☐ Depleted Matrix (F3)
☐ Mesic Spodic (A17)	☒ Redox Dark Surface (F6)
(MLRA 144A, 145, 149B)	☐ Depleted Dark Surface (F7)
☐ Sandy Mucky Mineral (S1)	☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)	☐ Marl (F10) (LRR K, L)
☐ Sandy Redox (S5)	☐ Red Parent Material (F21) (MLRA 145)
☐ Stripped Matrix (S6)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Red Parent Material (F21) (outside MLRA 145)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____**Remarks:**

Hydric soils are present. Hydric soils indicator Redox Dark Surfaces (F6) is satisfied.

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP24

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u><i>Pinus strobus</i></u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)																
2. <u><i>Sassafras albidum</i></u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u><i>Prunus serotina</i></u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u><i>Betula papyrifera</i></u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>65</u>	=Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u><i>Frangula alnus</i></u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>7</u></td> <td>x 2 = <u>14</u></td> </tr> <tr> <td>FAC species <u>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>158</u></td> <td>x 4 = <u>632</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>180</u> (A)</td> <td><u>691</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.84</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>7</u>	x 2 = <u>14</u>	FAC species <u>15</u>	x 3 = <u>45</u>	FACU species <u>158</u>	x 4 = <u>632</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>180</u> (A)	<u>691</u> (B)	Prevalence Index = B/A = <u>3.84</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>7</u>	x 2 = <u>14</u>																			
FAC species <u>15</u>	x 3 = <u>45</u>																			
FACU species <u>158</u>	x 4 = <u>632</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>180</u> (A)	<u>691</u> (B)																			
Prevalence Index = B/A = <u>3.84</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>15</u>	=Total Cover																	
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u><i>Poa pratensis</i></u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u><i>Gaultheria procumbens</i></u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u><i>Dichanthelium clandestinum</i></u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. <u><i>Fragaria virginiana</i></u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. <u><i>Potentilla simplex</i></u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
6. <u><i>Achillea millefolium</i></u>	<u>3</u>	<u>No</u>	<u>FACU</u>																	
7. <u><i>Rubus hispidus</i></u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>100</u>	=Total Cover																	
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	

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

Hydrophytic vegetation is not present. About 15 ft separates this sampling point from its paired wetland sampling point (DP23) with 6in change in elevation.

SOIL

Sampling Point DP24

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/5/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP25
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.898847 Long: -82.544035 Datum: WGS84
Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation X , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>18J</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Area mowed; regrowth to about 6in, making vegetation IDs reliable.

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: DP25

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</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>90</u></td> <td>(A) <u>180</u> (B)</td> </tr> <tr> <td colspan="2">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>90</u>	x 2 = <u>180</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>90</u>	(A) <u>180</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>90</u>	x 2 = <u>180</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>90</u>	(A) <u>180</u> (B)																			
Prevalence Index = B/A = <u>2.00</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Phalaris arundinacea</u>	<u>60</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Phragmites australis</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		90 =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

Remarks: (Include photo numbers here or on a separate sheet.) Vegetation matted due to mowing. Hydrophytic vegetation is present.

SOIL

Sampling Point	DP25
----------------	------

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP26

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus tremuloides</u>	<u>65</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>85</u></td> <td>x 3 = <u>255</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>360</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.27</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>85</u>	x 3 = <u>255</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>110</u> (A)	<u>360</u> (B)	Prevalence Index = B/A = <u>3.27</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>85</u>	x 3 = <u>255</u>																			
FACU species <u>20</u>	x 4 = <u>80</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>110</u> (A)	<u>360</u> (B)																			
Prevalence Index = B/A = <u>3.27</u>																				
2. <u>Pinus strobus</u>	<u>15</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Betula papyrifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>85</u> =Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Frangula alnus</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Elaeagnus umbellata</u>	<u>5</u>	<u>Yes</u>	<u>UPL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>10</u> =Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Frangula alnus</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Solidago rugosa</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>15</u> =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____ =Total Cover																		

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

Hydrophytic vegetation is present. Frangula alnus in herb layer are shoots. Little herbaceous vegetation present. About 35 ft separates this sampling point from its paired wetland sampling point (DP25) with 1-2 ft change in elevation

SOIL

Sampling Point DP26

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/5/22

Applicant/Owner: St. Clair County State: MI Sampling Point: DP27

Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E

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

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.899823 Long: -82.541916 Datum: WGS84

Soil Map Unit Name: Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric) NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>18C</u>
---	--

Remarks: (Explain alternative procedures here or in a separate report.)
 An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Area mowed, about 6in of regrowth. Vegetation IDs mostly based on unmown reference area nearby.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
--	---

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

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

Remarks:
 No late season water table noted. Wetland hydrology is indicated.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP27

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>55</u></td> <td>x 1 = <u>55</u></td> </tr> <tr> <td>FACW species <u>30</u></td> <td>x 2 = <u>60</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>100</u> (A)</td> <td><u>160</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>1.60</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>55</u>	x 1 = <u>55</u>	FACW species <u>30</u>	x 2 = <u>60</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>100</u> (A)	<u>160</u> (B)	Prevalence Index = B/A = <u>1.60</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>55</u>	x 1 = <u>55</u>																			
FACW species <u>30</u>	x 2 = <u>60</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>100</u> (A)	<u>160</u> (B)																			
Prevalence Index = B/A = <u>1.60</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: ☒ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Cladium mariscoides</u>	<u>40</u>	<u>Yes</u>	<u>OBL</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Phalaris arundinacea</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Typha angustifolia</u>	<u>15</u>	<u>No</u>	<u>OBL</u>																	
4. <u>Athyrium angustum</u>	<u>15</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		100 =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

 Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is present. Center core of wetland dominated by Phragmites.

SOIL

Sampling Point DP27

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP28

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>13</u></td> <td>x 3 = <u>39</u></td> </tr> <tr> <td>FACU species <u>77</u></td> <td>x 4 = <u>308</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>367</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.67</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>13</u>	x 3 = <u>39</u>	FACU species <u>77</u>	x 4 = <u>308</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>100</u> (A)	<u>367</u> (B)	Prevalence Index = B/A = <u>3.67</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>13</u>	x 3 = <u>39</u>																			
FACU species <u>77</u>	x 4 = <u>308</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>100</u> (A)	<u>367</u> (B)																			
Prevalence Index = B/A = <u>3.67</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Gaultheria procumbens</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. <u>Poa pratensis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Rubus hispidus</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Fragaria virginiana</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Solidago rugosa</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
6. <u>Achillea millefolium</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
7. <u>Athyrium angustum</u>	<u>3</u>	<u>No</u>	<u>FAC</u>																	
8. <u>Pteridium aquilinum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		100 =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

Hydrophytic vegetation is not present. About 20 ft separates this sampling point from its paired wetland sampling point (DP27) with 2-3 ft change in elevation

SOIL

Sampling Point DP28

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/5/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP29
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Shallow swale Local relief (concave, convex, none): Concave Slope %: 1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.900918 Long: -82.541372 Datum: WGS84
Soil Map Unit Name: Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric) NWI classification: PEM5C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>18D</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Data point taken within wooded/shrubby area at edge of swale/drainage way.

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: DP29

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus tremuloides</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>90</u></td> <td>x 3 = <u>270</u></td> </tr> <tr> <td>FACU species <u>15</u></td> <td>x 4 = <u>60</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>165</u> (A)</td> <td><u>450</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.73</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>90</u>	x 3 = <u>270</u>	FACU species <u>15</u>	x 4 = <u>60</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>165</u> (A)	<u>450</u> (B)	Prevalence Index = B/A = <u>2.73</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>60</u>	x 2 = <u>120</u>																			
FAC species <u>90</u>	x 3 = <u>270</u>																			
FACU species <u>15</u>	x 4 = <u>60</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>165</u> (A)	<u>450</u> (B)																			
Prevalence Index = B/A = <u>2.73</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>70</u>	=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Alnus incana</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Frangula alnus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
3. <u>Prunus pensylvanica</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>55</u>	=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Onoclea sensibilis</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Solidago rugosa</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Pteridium aquilinum</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Symphytichum lateriflorum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u>40</u>	=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____	=Total Cover																		

 Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is present. Onoclea sensibilis in drainage way.

SOIL

Sampling Point DP29

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP30

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. <u>Prunus pensylvanica</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</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>50.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 20%;"></th> <th style="width: 20%;">Multiply by:</th> <th style="width: 20%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td><u>0</u></td> <td>x 1 =</td> <td><u>0</u></td> </tr> <tr> <td>FACW species</td> <td><u>5</u></td> <td>x 2 =</td> <td><u>10</u></td> </tr> <tr> <td>FAC species</td> <td><u>30</u></td> <td>x 3 =</td> <td><u>90</u></td> </tr> <tr> <td>FACU species</td> <td><u>75</u></td> <td>x 4 =</td> <td><u>300</u></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>110</u></td> <td>(A)</td> <td><u>400</u> (B)</td> </tr> <tr> <td colspan="4">Prevalence Index = B/A = <u>3.64</u></td> </tr> </tbody> </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>75</u>	x 4 =	<u>300</u>	UPL species	<u>0</u>	x 5 =	<u>0</u>	Column Totals:	<u>110</u>	(A)	<u>400</u> (B)	Prevalence Index = B/A = <u>3.64</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>75</u>	x 4 =	<u>300</u>																																	
UPL species	<u>0</u>	x 5 =	<u>0</u>																																	
Column Totals:	<u>110</u>	(A)	<u>400</u> (B)																																	
Prevalence Index = B/A = <u>3.64</u>																																				
2. <u>Populus grandidentata</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																																	
3. <u>Populus tremuloides</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
		<u>70</u> =Total Cover																																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																																				
1. <u>Prunus pensylvanica</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
		<u>15</u> =Total Cover																																		
Herb Stratum (Plot size: <u>5 ft</u>)																																				
1. <u>Solidago rugosa</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																																
2. <u>Frangula alnus</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																																	
3. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																																	
4. <u>Prunus pensylvanica</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
9. _____	_____	_____	_____																																	
10. _____	_____	_____	_____																																	
11. _____	_____	_____	_____																																	
12. _____	_____	_____	_____																																	
		<u>25</u> =Total Cover																																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																																				
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
		_____ =Total Cover																																		

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

Hydrophytic vegetation is not present. Fails the Prevalence Index @ 3.64. Green ash, pin cherry, and glossy buckthorn shoots in herb stratum. Little herbaceous cover. Multiflora rose also present.

SOIL

Sampling Point DP30

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/7/22

Applicant/Owner: St. Clair County State: MI Sampling Point: DP31

Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 2, T5N, R16E

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

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.897537 Long: -82.538313 Datum: WGS84

Soil Map Unit Name: Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric) NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>23B</u>
---	--

Remarks: (Explain alternative procedures here or in a separate report.)
 An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Data point taken in depressional area within forested area.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> High Water Table (A2) <u> </u> Saturation (A3) <u> X </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> X </u> Sparsely Vegetated Concave Surface (B8) <u> X </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
--	--

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

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

Remarks:
 Wetland hydrology is indicated. Water-stained leaves throughout; water marks on several trees. No herbaceous layer present - Sparsely vegetated concave surface.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP31

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	65	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u>Quercus rubra</u>	20	Yes	FACU																	
3. <u>Ulmus americana</u>	10	No	FACW																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	95	=Total Cover		Prevalence Index worksheet: <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>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>70</u></td> <td>x 3 = <u>210</u></td> </tr> <tr> <td>FACU species <u>27</u></td> <td>x 4 = <u>108</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>127</u> (A)</td> <td><u>378</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.98</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>70</u>	x 3 = <u>210</u>	FACU species <u>27</u>	x 4 = <u>108</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>127</u> (A)	<u>378</u> (B)	Prevalence Index = B/A = <u>2.98</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>70</u>	x 3 = <u>210</u>																			
FACU species <u>27</u>	x 4 = <u>108</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>127</u> (A)	<u>378</u> (B)																			
Prevalence Index = B/A = <u>2.98</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Fraxinus pennsylvanica</u>	20	Yes	FACW																	
2. <u>Pinus strobus</u>	5	No	FACU																	
3. <u>Frangula alnus</u>	5	No	FAC																	
4. <u>Hamamelis virginiana</u>	2	No	FACU																	
5. _____																				
6. _____																				
7. _____																				
	32	=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. _____				Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ 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. _____																				
		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____																				
3. _____																				
4. _____																				
		=Total Cover																		

 Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is present. No herbaceous cover is present.

SOIL

Sampling Point DP31

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP32

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus grandidentata</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: 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. <u>Prunus serotina</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Acer rubrum</u>	<u>15</u>	<u>No</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>95</u>		=Total Cover		Prevalence Index worksheet: <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>15</u></td> <td>x 3 = <u>45</u></td> </tr> <tr> <td>FACU species <u>120</u></td> <td>x 4 = <u>480</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>525</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.89</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>15</u>	x 3 = <u>45</u>	FACU species <u>120</u>	x 4 = <u>480</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>135</u> (A)	<u>525</u> (B)	Prevalence Index = B/A = <u>3.89</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>15</u>	x 3 = <u>45</u>																			
FACU species <u>120</u>	x 4 = <u>480</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>135</u> (A)	<u>525</u> (B)																			
Prevalence Index = B/A = <u>3.89</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Hamamelis virginiana</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Berberis thunbergii</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Prunus serotina</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>40</u>		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ 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. _____	_____	_____	_____																	
_____		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____		=Total Cover																		

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

Hydrophytic vegetation is not present. No herbaceous cover due to shade and leaf detritus. About 15 ft separates this sampling point from its paired wetland sampling point (DP31) with 1-1.5 ft change in elevation.

SOIL

Sampling Point DP32

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/7/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP33
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.897474 Long: -82.541140 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation X , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u> 180 </u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Area mowed; about 4in of regrowth.

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: DP33

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</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				Prevalence Index worksheet: <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>80</u></td> <td>x 1 = <u>80</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>160</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>1.45</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>80</u>	x 1 = <u>80</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>160</u> (B)	Prevalence Index = B/A = <u>1.45</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>80</u>	x 1 = <u>80</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>160</u> (B)																			
Prevalence Index = B/A = <u>1.45</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Cornus alba</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: ☒ 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ ☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Carex pellita</u>	<u>75</u>	<u>Yes</u>	<u>OBL</u>																	
2. <u>Phalaris arundinacea</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Fragaria virginiana</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Iris virginica</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
=Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
=Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				
Hydrophytic Vegetation Present? Yes <u>X</u> No _____																				

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

SOIL

Sampling Point DP33

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP34

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: 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) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>5</u></td> <td>x 1 = <u>5</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>100</u> (A)</td> <td><u>385</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.85</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>5</u>	x 1 = <u>5</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>100</u> (A)	<u>385</u> (B)	Prevalence Index = B/A = <u>3.85</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>5</u>	x 1 = <u>5</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>100</u> (A)	<u>385</u> (B)																			
Prevalence Index = B/A = <u>3.85</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Poa pratensis</u>	<u>55</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Cirsium arvense</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Potentilla simplex</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Fragaria virginiana</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Carex pellita</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
6. <u>Solidago canadensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
7. <u>Achillea millefolium</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		100 =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

Hydrophytic vegetation is not present. About 25 ft separates this sampling point from its paired wetland sampling point (DP33) with 2 ft change in elevation

SOIL

Sampling Point DP34

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/7/22
Applicant/Owner: St. Clair County State: MI Sampling Point: DP35
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.897656 Long: -82.539487 Datum: WGS84
Soil Map Unit Name: Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u> 21 </u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were drier than normal range. Data point taken in wooded depressional area.

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: DP35

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																									
1. <u>Populus deltoides</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 10%;"></th> <th style="width: 10%;">Multiply by:</th> <th style="width: 10%;"></th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td><u>0</u></td> <td>x 1 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>FACW species</td> <td><u>85</u></td> <td>x 2 =</td> <td><u>170</u></td> <td></td> </tr> <tr> <td>FAC species</td> <td><u>60</u></td> <td>x 3 =</td> <td><u>180</u></td> <td></td> </tr> <tr> <td>FACU species</td> <td><u>0</u></td> <td>x 4 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x 5 =</td> <td><u>0</u></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td><u>145</u></td> <td>(A)</td> <td><u>350</u></td> <td>(B)</td> </tr> <tr> <td colspan="5">Prevalence Index = B/A = <u>2.41</u></td> </tr> </tbody> </table>	Total % Cover of:		Multiply by:			OBL species	<u>0</u>	x 1 =	<u>0</u>		FACW species	<u>85</u>	x 2 =	<u>170</u>		FAC species	<u>60</u>	x 3 =	<u>180</u>		FACU species	<u>0</u>	x 4 =	<u>0</u>		UPL species	<u>0</u>	x 5 =	<u>0</u>		Column Totals:	<u>145</u>	(A)	<u>350</u>	(B)	Prevalence Index = B/A = <u>2.41</u>				
Total % Cover of:		Multiply by:																																										
OBL species	<u>0</u>	x 1 =	<u>0</u>																																									
FACW species	<u>85</u>	x 2 =	<u>170</u>																																									
FAC species	<u>60</u>	x 3 =	<u>180</u>																																									
FACU species	<u>0</u>	x 4 =	<u>0</u>																																									
UPL species	<u>0</u>	x 5 =	<u>0</u>																																									
Column Totals:	<u>145</u>	(A)	<u>350</u>	(B)																																								
Prevalence Index = B/A = <u>2.41</u>																																												
2. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																																									
3. <u>Quercus bicolor</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																																									
4. _____	_____	_____	_____																																									
5. _____	_____	_____	_____																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
		<u>70</u>	=Total Cover																																									
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																																												
1. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																								
2. _____	_____	_____	_____																																									
3. _____	_____	_____	_____																																									
4. _____	_____	_____	_____																																									
5. _____	_____	_____	_____																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
		<u>20</u>	=Total Cover																																									
Herb Stratum (Plot size: <u>5 ft</u>)																																												
1. <u>Carex intumescens</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																								
2. <u>Symphyotrichum lateriflorum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																																									
3. <u>Phragmites australis</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																																									
4. _____	_____	_____	_____																																									
5. _____	_____	_____	_____																																									
6. _____	_____	_____	_____																																									
7. _____	_____	_____	_____																																									
8. _____	_____	_____	_____																																									
9. _____	_____	_____	_____																																									
10. _____	_____	_____	_____																																									
11. _____	_____	_____	_____																																									
12. _____	_____	_____	_____																																									
		<u>55</u>	=Total Cover																																									
Woody Vine Stratum (Plot size: <u>15 ft</u>)																																												
1. _____	_____	_____	_____																																									
2. _____	_____	_____	_____																																									
3. _____	_____	_____	_____																																									
4. _____	_____	_____	_____																																									
		_____	=Total Cover																																									

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

Hydrophytic vegetation is present. Central core is mostly covered by Phragmites under open canopy. Leaf detritus, dry conditions, and shade contribute to sparse herb stratum.

SOIL

Sampling Point DP35

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP36

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus deltoides</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: 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) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>120</u></td> <td>x 3 = <u>360</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>200</u> (A)</td> <td><u>560</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.80</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>120</u>	x 3 = <u>360</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>200</u> (A)	<u>560</u> (B)	Prevalence Index = B/A = <u>2.80</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>60</u>	x 2 = <u>120</u>																			
FAC species <u>120</u>	x 3 = <u>360</u>																			
FACU species <u>20</u>	x 4 = <u>80</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>200</u> (A)	<u>560</u> (B)																			
Prevalence Index = B/A = <u>2.80</u>																				
2. <u>Pinus strobus</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Pinus resinosa</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>80</u> =Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Cornus racemosa</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>60</u> =Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Carex intumescens</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Solidago gigantea</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>60</u> =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____ =Total Cover																		

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

Hydrophytic vegetation is present. About 20 ft separates this sampling point from its paired wetland sampling point (DP35) with 6in change in elevation

SOIL

Sampling Point DP36

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 6/8/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP37
Investigator(s): Brauna Hartzell & Kim Shannon, Mead & Hunt, Inc. Section, Township, Range: Section 2, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.898308 Long: -82.537153 Datum: WGS84
Soil Map Unit Name: Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>20</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Data point taken on edge of depressional basin.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u>X</u> Saturation (A3) <u> </u> Marl Deposits (B15) <u>X</u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u>X</u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>16</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is present and indicated. APT 2.0 indicates normal dry season. No precipitation recorded in few days prior to site visit. Water stained leaves throughout depressional area. No herbaceous vegetation in lowest part of depression. Standing water is present in lower portion of wetland. Sparsely Vegetated Concave Surface in rest of the wetland (See photos).	

Sampling Point: DP37

Tree Stratum (Plot size: 30 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Acer saccharinum</i>	40	Yes	FACW
2.	<i>Populus deltoides</i>	20	Yes	FAC
3.	<i>Quercus bicolor</i>	20	Yes	FACW
4.	<i>Ulmus americana</i>	15	No	FACW
5.				
6.				
7.				
		95	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)				
1.	<i>Fraxinus pennsylvanica</i>	5	Yes	FACW
2.				
3.				
4.				
5.				
6.				
7.				
		5	=Total Cover	
Herb Stratum (Plot size: 5 ft)				
1.	<i>Onoclea sensibilis</i>	5	Yes	FACW
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		5	=Total Cover	
Woody Vine Stratum (Plot size: 15 ft)				
1.				
2.				
3.				
4.				
			=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	85	x 2 = 170
FAC species	20	x 3 = 60
FACU species	0	x 4 = 0
UPL species	0	x 5 = 0
Column Totals:	105 (A)	230 (B)
Prevalence Index = B/A = 2.19		

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

Hydrophytic vegetation is present. Herb stratum limited due to leaf detritus and shade. About 20 ft separates this sampling point from its paired wetland sampling point (DP38) with 1 ft change in elevation

SOIL

Sampling Point DP37

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP38

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus rubra</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>55.6%</u> (A/B)																
2. <u>Acer rubrum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Betula papyrifera</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>50</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>80</u></td> <td>x 4 = <u>320</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>170</u> (A)</td> <td><u>530</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.12</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>80</u>	x 4 = <u>320</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>170</u> (A)	<u>530</u> (B)	Prevalence Index = B/A = <u>3.12</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>60</u>	x 2 = <u>120</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>80</u>	x 4 = <u>320</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>170</u> (A)	<u>530</u> (B)																			
Prevalence Index = B/A = <u>3.12</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Fraxinus pennsylvanica</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Prunus serotina</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Berberis thunbergii</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>45</u>	=Total Cover	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Onoclea sensibilis</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Solidago gigantea</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Circaea canadensis</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Dichanthelium latifolium</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Actaea rubra</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>75</u>	=Total Cover	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	
Hydrophytic Vegetation Present? Yes <u>X</u> No _____																				

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

SOIL

Sampling Point DP38

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 6/12/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP39
Investigator(s): Brauna Hartzell & Kim Shannon, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.895375 Long: -82.544925 Datum: WGS84
Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>30A</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Data point taken in hardwood covered depression with water-stained leaves.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u>X</u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u>X</u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u>X</u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>13</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>10</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is present and indicated. APT 2.0 indicates normal dry season. No precipitation recorded in few days prior to site visit. Water-stained leaves throughout depressional area.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP39

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>80</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: 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) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>15</u></td> <td>x 1 = <u>15</u></td> </tr> <tr> <td>FACW species <u>17</u></td> <td>x 2 = <u>34</u></td> </tr> <tr> <td>FAC species <u>115</u></td> <td>x 3 = <u>345</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>157</u> (A)</td> <td><u>434</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.76</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>15</u>	x 1 = <u>15</u>	FACW species <u>17</u>	x 2 = <u>34</u>	FAC species <u>115</u>	x 3 = <u>345</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>157</u> (A)	<u>434</u> (B)	Prevalence Index = B/A = <u>2.76</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>15</u>	x 1 = <u>15</u>																			
FACW species <u>17</u>	x 2 = <u>34</u>																			
FAC species <u>115</u>	x 3 = <u>345</u>																			
FACU species <u>10</u>	x 4 = <u>40</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>157</u> (A)	<u>434</u> (B)																			
Prevalence Index = B/A = <u>2.76</u>																				
2. <u>Quercus bicolor</u>	<u>15</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Quercus rubra</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>100</u> =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Acer rubrum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Quercus rubra</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Fraxinus pennsylvanica</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>27</u> =Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Populus deltoides</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Iris virginica</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Juncus effusus</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>30</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

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

Multiple small white birch are dead, cinnamon fern near sampling point; alder in shrub layer outside shrub sampling perimeter. Hydrophytic vegetation is present.

SOIL

Sampling Point DP39

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 6/12/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP40
Investigator(s): Brauna Hartzell & Kim Shannon, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Midslope Local relief (concave, convex, none): Convex Slope %: 3%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.895431 Long: -82.544866 Datum: WGS84
Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range. Data point taken in moist woods.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is neither present nor indicated.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP40

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>65</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
2. <u>Prunus serotina</u>	<u>8</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Quercus rubra</u>	<u>7</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Betula papyrifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Pinus strobus</u>	<u>1</u>	<u>No</u>	<u>FACU</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>86</u>	=Total Cover																	
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Acer rubrum</u>	<u>7</u>	<u>Yes</u>	<u>FAC</u>	Prevalence Index worksheet: <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>8</u></td> <td>x 2 = <u>16</u></td> </tr> <tr> <td>FAC species <u>72</u></td> <td>x 3 = <u>216</u></td> </tr> <tr> <td>FACU species <u>71</u></td> <td>x 4 = <u>284</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>161</u> (A)</td> <td><u>566</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.52</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>8</u>	x 2 = <u>16</u>	FAC species <u>72</u>	x 3 = <u>216</u>	FACU species <u>71</u>	x 4 = <u>284</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>161</u> (A)	<u>566</u> (B)	Prevalence Index = B/A = <u>3.52</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>8</u>	x 2 = <u>16</u>																			
FAC species <u>72</u>	x 3 = <u>216</u>																			
FACU species <u>71</u>	x 4 = <u>284</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>161</u> (A)	<u>566</u> (B)																			
Prevalence Index = B/A = <u>3.52</u>																				
2. <u>Prunus serotina</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>12</u>	=Total Cover																	
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Aralia nudicaulis</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>Problematic Hydrophytic Vegetation¹ (Explain)</u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Maianthemum canadense</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Carex pensylvanica</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
4. <u>Alnus incana</u>	<u>8</u>	<u>No</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>58</u>	=Total Cover																	
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Parthenocissus quinquefolia</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		<u>5</u>	=Total Cover																	

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

Hydrophytic vegetation is present. About 25 ft separates this sampling point from its paired wetland sampling point (DP39) with 1 ft change in elevation

SOIL

Sampling Point DP40

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 6/13/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP41
Investigator(s): Brauna Hartzell & Kim Shannon, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.899205 Long: -82.545408 Datum: WGS84
Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>33</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u>X</u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u>X</u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u>X</u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>13</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is present and indicated. Standing water about 30 ft to the north. Approximately 0.8 inches of precipitation was recorded over two days prior. Water marks to 12 inches on trees surrounding inundated area to the north of sampling point. APT 2.0 indicates normal dry season. Water-stained leaves throughout depressional wetland.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP41

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>95</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: 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. <u>Quercus bicolor</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>100</u>		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Prevalence Index worksheet: <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>23</u></td> <td>x 1 = <u>23</u></td> </tr> <tr> <td>FACW species <u>17</u></td> <td>x 2 = <u>34</u></td> </tr> <tr> <td>FAC species <u>95</u></td> <td>x 3 = <u>285</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>135</u></td> <td>(A) <u>342</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.53</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>23</u>	x 1 = <u>23</u>	FACW species <u>17</u>	x 2 = <u>34</u>	FAC species <u>95</u>	x 3 = <u>285</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>135</u>	(A) <u>342</u> (B)	Prevalence Index = B/A = <u>2.53</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>23</u>	x 1 = <u>23</u>																			
FACW species <u>17</u>	x 2 = <u>34</u>																			
FAC species <u>95</u>	x 3 = <u>285</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>135</u>	(A) <u>342</u> (B)																			
Prevalence Index = B/A = <u>2.53</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Carex crinita</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Carex lupulina</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
4. <u>Iris virginica</u>	<u>3</u>	<u>No</u>	<u>OBL</u>																	
5. <u>Onoclea sensibilis</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>35</u>		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____		=Total Cover																		

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

Hydrophytic vegetation is present. Green ash <1m tall, little vegetation in herb stratum, due to shade and leaf detritus.

SOIL

Sampling Point DP41[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 6/13/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP42
Investigator(s): Brauna Hartzell & Kim Shannon, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Midslope Local relief (concave, convex, none): Convex Slope %: 3-5%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.899134 Long: -82.545423 Datum: WGS84
Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were within normal range.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is neither present nor indicated. Approximately 0.8 inches of precipitation was recorded over two days prior.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP42

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>55</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>42.9%</u> (A/B)																
2. <u>Prunus serotina</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Pinus strobus</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Betula papyrifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>95</u>		<u>=Total Cover</u>		Prevalence Index worksheet: <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>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>165</u></td> <td>(A) <u>560</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.39</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>80</u>	x 3 = <u>240</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>165</u>	(A) <u>560</u> (B)	Prevalence Index = B/A = <u>3.39</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>80</u>	x 3 = <u>240</u>																			
FACU species <u>75</u>	x 4 = <u>300</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>165</u>	(A) <u>560</u> (B)																			
Prevalence Index = B/A = <u>3.39</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Acer rubrum</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Quercus bicolor</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Prunus serotina</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>45</u>		<u>=Total Cover</u>																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Maianthemum canadense</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Pteridium aquilinum</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>25</u>		<u>=Total Cover</u>																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____		<u>=Total Cover</u>		Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																

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

Heavy leaf cover. Hydrophytic vegetation is not present. About 18 ft separates this sampling point from its paired wetland sampling point (DP41) with 2-3 ft change in elevation

SOIL

Sampling Point DP42

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 9/30/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP43
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.897625 Long: 82.547867 Datum: WGS84
Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>30B</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were wetter than normal range. Pit and mound topography present.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u>X</u> Water-Stained Leaves (B9) <u>X</u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u>X</u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>8</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is present and indicated. Water-stained leaves throughout wetland.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP43

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>80</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>28</u></td> <td>x 2 = <u>56</u></td> </tr> <tr> <td>FAC species <u>105</u></td> <td>x 3 = <u>315</u></td> </tr> <tr> <td>FACU species <u>25</u></td> <td>x 4 = <u>100</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>158</u> (A)</td> <td><u>471</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.98</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>28</u>	x 2 = <u>56</u>	FAC species <u>105</u>	x 3 = <u>315</u>	FACU species <u>25</u>	x 4 = <u>100</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>158</u> (A)	<u>471</u> (B)	Prevalence Index = B/A = <u>2.98</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>28</u>	x 2 = <u>56</u>																			
FAC species <u>105</u>	x 3 = <u>315</u>																			
FACU species <u>25</u>	x 4 = <u>100</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>158</u> (A)	<u>471</u> (B)																			
Prevalence Index = B/A = <u>2.98</u>																				
2. <u>Quercus rubra</u>	<u>15</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Carpinus caroliniana</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>100</u> =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Carpinus caroliniana</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Hamamelis virginiana</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>30</u> =Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Osmundastrum cinnamomeum</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Carex intumescens</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Symphyotrichum lanceolatum</u>	<u>3</u>	<u>No</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>28</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

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

Hydrophytic vegetation is present. Royal fern and sensitive fern nearby. Little herbaceous vegetation due to leaf litter and shade. Green ash < 1m in height.

SOIL

Sampling Point DP43

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

Sampling Point: DP44

Tree Stratum (Plot size: 30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	85	Yes	FAC
2. <u>Quercus rubra</u>	15	No	FACU
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	100 =Total Cover		
Sapling/Shrub Stratum (Plot size: 15 ft)			
1. <u>Carpinus caroliniana</u>	25	Yes	FAC
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	25 =Total Cover		
Herb Stratum (Plot size: 5 ft)			
1. <u>Aralia nudicaulis</u>	5	Yes	FACU
2. <u>Hamamelis virginiana</u>	5	Yes	FACU
3. <u>Medeola virginiana</u>	3	Yes	FACU
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
	13 =Total Cover		
Woody Vine Stratum (Plot size: 15 ft)			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
	_____ =Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 110	x 3 = 330
FACU species 28	x 4 = 112
UPL species 0	x 5 = 0
Column Totals: 138 (A)	442 (B)
Prevalence Index = B/A = 3.20	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

Hydrophytic vegetation is present. About 30 ft separates this sampling point from its paired wetland sampling point (DP43) with 1 ft change in elevation. Hazel <1m tall; not much herbaceous vegetation due to leaf litter and shade.

SOIL

Sampling Point DP44

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 9/30/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP45
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Drainage way Local relief (concave, convex, none): Concave Slope %: 1-2%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.897562 Long: -82.545408 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>32B</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were wetter than normal range. Data point taken in shrubby drainageway.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> X </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> X </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 6 </u> Saturation Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Data point taken at edge of drainageway. Wetland hydrology is present and indicated. Standing water in drainage way approximately 10 feet away.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP45

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus deltoides</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</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>87.5%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>20</u></td> <td>x 1 = <u>20</u></td> </tr> <tr> <td>FACW species <u>145</u></td> <td>x 2 = <u>290</u></td> </tr> <tr> <td>FAC species <u>40</u></td> <td>x 3 = <u>120</u></td> </tr> <tr> <td>FACU species <u>35</u></td> <td>x 4 = <u>140</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>240</u> (A)</td> <td><u>570</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.38</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>20</u>	x 1 = <u>20</u>	FACW species <u>145</u>	x 2 = <u>290</u>	FAC species <u>40</u>	x 3 = <u>120</u>	FACU species <u>35</u>	x 4 = <u>140</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>240</u> (A)	<u>570</u> (B)	Prevalence Index = B/A = <u>2.38</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>20</u>	x 1 = <u>20</u>																			
FACW species <u>145</u>	x 2 = <u>290</u>																			
FAC species <u>40</u>	x 3 = <u>120</u>																			
FACU species <u>35</u>	x 4 = <u>140</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>240</u> (A)	<u>570</u> (B)																			
Prevalence Index = B/A = <u>2.38</u>																				
2. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>55</u>	<u>=Total Cover</u>																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Salix discolor</u>	<u>70</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Rosa multiflora</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Betula papyrifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>85</u>	<u>=Total Cover</u>																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Equisetum pratense</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Onoclea sensibilis</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Phragmites australis</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u>Doellingeria umbellata</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
5. <u>Pteridium aquilinum</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
6. <u>Fragaria virginiana</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
7. <u>Solidago canadensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
8. <u>Euthamia graminifolia</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
9. <u>Symphytotrichum lanceolatum</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u>100</u>	<u>=Total Cover</u>																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____	<u>=Total Cover</u>																		

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

SOIL

Sampling Point DP45

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP46

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus tremuloides</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>8</u></td> <td>x 2 = <u>16</u></td> </tr> <tr> <td>FAC species <u>25</u></td> <td>x 3 = <u>75</u></td> </tr> <tr> <td>FACU species <u>37</u></td> <td>x 4 = <u>148</u></td> </tr> <tr> <td>UPL species <u>80</u></td> <td>x 5 = <u>400</u></td> </tr> <tr> <td>Column Totals: <u>150</u> (A)</td> <td><u>639</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.26</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>8</u>	x 2 = <u>16</u>	FAC species <u>25</u>	x 3 = <u>75</u>	FACU species <u>37</u>	x 4 = <u>148</u>	UPL species <u>80</u>	x 5 = <u>400</u>	Column Totals: <u>150</u> (A)	<u>639</u> (B)	Prevalence Index = B/A = <u>4.26</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>8</u>	x 2 = <u>16</u>																			
FAC species <u>25</u>	x 3 = <u>75</u>																			
FACU species <u>37</u>	x 4 = <u>148</u>																			
UPL species <u>80</u>	x 5 = <u>400</u>																			
Column Totals: <u>150</u> (A)	<u>639</u> (B)																			
Prevalence Index = B/A = <u>4.26</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>10</u>	=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Elaeagnus umbellata</u>	<u>30</u>	<u>Yes</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Populus tremuloides</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>35</u>	=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Poa pratensis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. <u>Daucus carota</u>	<u>20</u>	<u>Yes</u>	<u>UPL</u>																	
3. <u>Solidago speciosa</u>	<u>15</u>	<u>Yes</u>	<u>UPL</u>																	
4. <u>Euthamia graminifolia</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
5. <u>Fragaria virginiana</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Festuca trachyphylla</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
7. <u>Symphyotrichum lanceolatum</u>	<u>8</u>	<u>No</u>	<u>FACW</u>																	
8. <u>Crepis tectorum</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
9. <u>Achillea millefolium</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
10. <u>Pteridium aquilinum</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u>105</u>	=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____	=Total Cover																		

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

Hydrophytic vegetation is not present. About 20 ft separates this sampling point from its paired wetland sampling point (DP45) with 2 ft change in elevation. Populus < 3in DBH.

SOIL

Sampling Point DP46

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 9/30/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP47
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope %: 1-2%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.896912 Long: -82.544118 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: PSS1/EM5C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>181</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were wetter than normal range.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> X </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 18 </u> Saturation Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 5 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is present and indicated. APT tool indicates late September is dry season. However, conditions are wetter than normal. The water table under this situation likely does not meet the Dry-Season Water Table (C2) indicator and the water table likely stays below 12 inches even under normal conditions. The wetland hydrology criterion is satisfied by two secondary indicators and one primary indicator nonetheless.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP47

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus deltoides</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</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>75.0%</u> (A/B)																
2. <u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Quercus bicolor</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>45</u>	=Total Cover	Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>60</u></td> <td>x 4 = <u>240</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>190</u> (A)</td> <td><u>550</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.89</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>60</u>	x 4 = <u>240</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>190</u> (A)	<u>550</u> (B)	Prevalence Index = B/A = <u>2.89</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>60</u>	x 2 = <u>120</u>																			
FAC species <u>60</u>	x 3 = <u>180</u>																			
FACU species <u>60</u>	x 4 = <u>240</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>190</u> (A)	<u>550</u> (B)																			
Prevalence Index = B/A = <u>2.89</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Cornus racemosa</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Cephalanthus occidentalis</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Salix interior</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>45</u>	=Total Cover	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Poa pratensis</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Solidago canadensis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Solidago gigantea</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u>Phragmites australis</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Symphotrichum novae-angliae</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
6. <u>Geum aleppicum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>100</u>	=Total Cover																	
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____	=Total Cover																	

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

SOIL

Sampling Point DP47

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP48

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>33.3%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>77</u></td> <td>x 4 = <u>308</u></td> </tr> <tr> <td>UPL species <u>23</u></td> <td>x 5 = <u>115</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>453</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.12</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>10</u>	x 3 = <u>30</u>	FACU species <u>77</u>	x 4 = <u>308</u>	UPL species <u>23</u>	x 5 = <u>115</u>	Column Totals: <u>110</u> (A)	<u>453</u> (B)	Prevalence Index = B/A = <u>4.12</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>10</u>	x 3 = <u>30</u>																			
FACU species <u>77</u>	x 4 = <u>308</u>																			
UPL species <u>23</u>	x 5 = <u>115</u>																			
Column Totals: <u>110</u> (A)	<u>453</u> (B)																			
Prevalence Index = B/A = <u>4.12</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Cornus racemosa</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>Problematic Hydrophytic Vegetation¹ (Explain)</u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Solidago canadensis</u>	<u>40</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. <u>Poa pratensis</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Daucus carota</u>	<u>20</u>	<u>No</u>	<u>UPL</u>																	
4. <u>Fragaria virginiana</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Symphotrichum lateriflorum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
6. <u>Crepis tectorum</u>	<u>3</u>	<u>No</u>	<u>UPL</u>																	
7. <u>Cirsium arvense</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

Hydrophytic vegetation is not present. About 25 ft separates this sampling point from its paired wetland sampling point (DP47) with 2 ft change in elevation.

SOIL

Sampling Point DP48

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 9/30/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP49
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope %: 1-2%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.895958 Long: -82.541633 Datum: WGS84
Soil Map Unit Name: Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>181</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were wetter than normal range. Data point taken in drainageway.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> X </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> X </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
---	---

Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 12 </u> Saturation Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
---	---

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

Remarks:
Wetland hydrology is present and indicated. Standing water in drainageway about 10 feet to north.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP49

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus deltoides</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>50</u>	<u>=Total Cover</u>																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Salix discolor</u>	<u>35</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: <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>95</u></td> <td>x 2 = <u>190</u></td> </tr> <tr> <td>FAC species <u>95</u></td> <td>x 3 = <u>285</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>195</u> (A)</td> <td><u>495</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.54</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>95</u>	x 2 = <u>190</u>	FAC species <u>95</u>	x 3 = <u>285</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>195</u> (A)	<u>495</u> (B)	Prevalence Index = B/A = <u>2.54</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>95</u>	x 2 = <u>190</u>																			
FAC species <u>95</u>	x 3 = <u>285</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>195</u> (A)	<u>495</u> (B)																			
Prevalence Index = B/A = <u>2.54</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>35</u>	<u>=Total Cover</u>																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Phragmites australis</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Poa palustris</u>	<u>25</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Equisetum hyemale</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Solidago rugosa</u>	<u>15</u>	<u>No</u>	<u>FAC</u>																	
5. <u>Euthamia graminifolia</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
6. <u>Symphyotrichum ericoides</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
7. <u>Symphyotrichum novae-angliae</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
8. <u>Doellingeria umbellata</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u>110</u>	<u>=Total Cover</u>																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – 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.)

Hydrophytic vegetation is present. Purple loosestrife also present in drainageway along with Solidago ohioensis (OBL) along banks.

SOIL

Sampling Point DP49

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP50

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <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>12</u></td> <td>x 2 = <u>24</u></td> </tr> <tr> <td>FAC species <u>23</u></td> <td>x 3 = <u>69</u></td> </tr> <tr> <td>FACU species <u>85</u></td> <td>x 4 = <u>340</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>120</u> (A)</td> <td><u>433</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.61</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>12</u>	x 2 = <u>24</u>	FAC species <u>23</u>	x 3 = <u>69</u>	FACU species <u>85</u>	x 4 = <u>340</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>120</u> (A)	<u>433</u> (B)	Prevalence Index = B/A = <u>3.61</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>12</u>	x 2 = <u>24</u>																			
FAC species <u>23</u>	x 3 = <u>69</u>																			
FACU species <u>85</u>	x 4 = <u>340</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>120</u> (A)	<u>433</u> (B)																			
Prevalence Index = B/A = <u>3.61</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Symphyotrichum ericoides</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Solidago canadensis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Fragaria virginiana</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Euthamia graminifolia</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
5. <u>Poa pratensis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>																	
6. <u>Phragmites australis</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
7. <u>Trifolium pratense</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
8. <u>Salix interior</u>	<u>3</u>	<u>No</u>	<u>FACW</u>																	
9. <u>Equisetum hyemale</u>	<u>3</u>	<u>No</u>	<u>FAC</u>																	
10. <u>Symphyotrichum novae-angliae</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
11. <u>Symphyotrichum lanceolatum</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
12. _____	_____	_____	_____																	
<u>120</u> =Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
=Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				

 Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is not present. Willow is <1m tall.

SOIL

Sampling Point DP50

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/1/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP51
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.895057 Long: -82.545658 Datum: WGS84
Soil Map Unit Name: Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-Hydric) NWI classification: PSS1/EM5C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u> If yes, optional Wetland Site ID: <u>30A</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were wetter than normal range.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u>X</u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u>X</u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
---	---

Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>12</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
---	---

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

Remarks:
Wetland hydrology is present and indicated. Standing water within shrub sampling area to about 3-4in.

VEGETATION – Use scientific names of plants.

 Sampling Point: DP51

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus tremuloides</u>	<u>35</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>83.3%</u> (A/B)																
2. <u>Salix nigra</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>																	
3. <u>Prunus serotina</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Betula papyrifera</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>75</u> =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Salix nigra</u>	<u>60</u>	<u>Yes</u>	<u>OBL</u>	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>80</u></td> <td>x 1 = <u>80</u></td> </tr> <tr> <td>FACW species <u>67</u></td> <td>x 2 = <u>134</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>58</u></td> <td>x 4 = <u>232</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>255</u> (A)</td> <td><u>596</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.34</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>80</u>	x 1 = <u>80</u>	FACW species <u>67</u>	x 2 = <u>134</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>58</u>	x 4 = <u>232</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>255</u> (A)	<u>596</u> (B)	Prevalence Index = B/A = <u>2.34</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>80</u>	x 1 = <u>80</u>																			
FACW species <u>67</u>	x 2 = <u>134</u>																			
FAC species <u>50</u>	x 3 = <u>150</u>																			
FACU species <u>58</u>	x 4 = <u>232</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>255</u> (A)	<u>596</u> (B)																			
Prevalence Index = B/A = <u>2.34</u>																				
2. <u>Cornus racemosa</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
3. <u>Alnus incana</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>70</u> =Total Cover																				
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Poa pratensis</u>	<u>38</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Doellingeria umbellata</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Onoclea sensibilis</u>	<u>15</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Solidago gigantea</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Symphyotrichum lanceolatum</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
6. <u>Equisetum pratense</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>100</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Vitis riparia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
<u>10</u> =Total Cover																				

 Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is present. Phragmites and Iris virginica within shrubs to east.

SOIL

Sampling Point DP51**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/2	100					Loamy/Clayey	
2-10	10YR 5/1	100					Loamy/Clayey	
10-12	10YR 2/1	100					Mucky Sand	
12-18	10YR 5/3	95	10YR 5/8	5	C	M	Sandy	Prominent redox concentrations

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

☐ Histosol (A1)	☐ Dark Surface (S7)
☐ Histic Epipedon (A2)	☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
☐ Black Histic (A3)	☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
☐ Hydrogen Sulfide (A4)	☐ High Chroma Sands (S11) (LRR K, L)
☐ Stratified Layers (A5)	☐ Loamy Mucky Mineral (F1) (LRR K, L)
☒ Depleted Below Dark Surface (A11)	☐ Loamy Gleyed Matrix (F2)
☐ Thick Dark Surface (A12)	☒ Depleted Matrix (F3)
☐ Mesic Spodic (A17)	☐ Redox Dark Surface (F6)
☐ (MLRA 144A, 145, 149B)	☐ Depleted Dark Surface (F7)
☐ Sandy Mucky Mineral (S1)	☐ Redox Depressions (F8)
☐ Sandy Gleyed Matrix (S4)	☐ Marl (F10) (LRR K, L)
☐ Sandy Redox (S5)	☐ Red Parent Material (F21) (MLRA 145)
☐ Stripped Matrix (S6)	

Indicators for Problematic Hydric Soils³:

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Red Parent Material (F21) (outside MLRA 145)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐**Remarks:**

Hydric soils are present. Hydric soil indicators Depleted Below Dark Surface (A11) and Depleted Matrix (F3) are satisfied.

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP52

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus deltoides</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>37.5%</u> (A/B)																
2. <u>Betula papyrifera</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>50</u>		=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 60%;">Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>10</u></td> <td>x 1 = <u>10</u></td> </tr> <tr> <td>FACW species <u>28</u></td> <td>x 2 = <u>56</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td>x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>75</u></td> <td>x 4 = <u>300</u></td> </tr> <tr> <td>UPL species <u>12</u></td> <td>x 5 = <u>60</u></td> </tr> <tr> <td>Column Totals: <u>185</u> (A)</td> <td><u>606</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.28</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>10</u>	x 1 = <u>10</u>	FACW species <u>28</u>	x 2 = <u>56</u>	FAC species <u>60</u>	x 3 = <u>180</u>	FACU species <u>75</u>	x 4 = <u>300</u>	UPL species <u>12</u>	x 5 = <u>60</u>	Column Totals: <u>185</u> (A)	<u>606</u> (B)	Prevalence Index = B/A = <u>3.28</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>10</u>	x 1 = <u>10</u>																			
FACW species <u>28</u>	x 2 = <u>56</u>																			
FAC species <u>60</u>	x 3 = <u>180</u>																			
FACU species <u>75</u>	x 4 = <u>300</u>																			
UPL species <u>12</u>	x 5 = <u>60</u>																			
Column Totals: <u>185</u> (A)	<u>606</u> (B)																			
Prevalence Index = B/A = <u>3.28</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Elaeagnus umbellata</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>																	
2. <u>Rosa multiflora</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Salix nigra</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>30</u>		=Total Cover		Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Poa pratensis</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Solidago rugosa</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Solidago gigantea</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
4. <u>Doellingeria umbellata</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Symphyotrichum lanceolatum</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
6. <u>Symphyotrichum novae-angliae</u>	<u>3</u>	<u>No</u>	<u>FACW</u>																	
7. <u>Asclepias syriaca</u>	<u>2</u>	<u>No</u>	<u>UPL</u>																	
8. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>100</u>		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Parthenocissus quinquefolia</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
<u>5</u>		=Total Cover																		
Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																				

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

Hydrophytic vegetation is not present. About 15 ft separates this sampling point from its paired wetland sampling point (DP51) with 2 ft change in elevation.

SOIL

Sampling Point DP52

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/1/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP53
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.892831 Long: -82.546697 Datum: WGS84
Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>35B</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were wetter than normal range. A deep ditch approximately 175 ft to the west likely impacts internal drainage of this wetland.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u> X </u> Water-Stained Leaves (B9) <u> X </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> X </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 6 </u> Saturation Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is present and indicated. Standing water nearby to about 1-2 in. Water-stained leaves throughout.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP53

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>80</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u>Acer saccharinum</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>90</u>	<u>=Total Cover</u>		Prevalence Index worksheet: <table style="width: 100%;"> <thead> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> </thead> <tbody> <tr> <td>OBL species <u>25</u></td> <td>x 1 = <u>25</u></td> </tr> <tr> <td>FACW species <u>60</u></td> <td>x 2 = <u>120</u></td> </tr> <tr> <td>FAC species <u>80</u></td> <td>x 3 = <u>240</u></td> </tr> <tr> <td>FACU species <u>7</u></td> <td>x 4 = <u>28</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>172</u> (A)</td> <td><u>413</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.40</u></td> </tr> </tbody> </table>	Total % Cover of:	Multiply by:	OBL species <u>25</u>	x 1 = <u>25</u>	FACW species <u>60</u>	x 2 = <u>120</u>	FAC species <u>80</u>	x 3 = <u>240</u>	FACU species <u>7</u>	x 4 = <u>28</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>172</u> (A)	<u>413</u> (B)	Prevalence Index = B/A = <u>2.40</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>25</u>	x 1 = <u>25</u>																			
FACW species <u>60</u>	x 2 = <u>120</u>																			
FAC species <u>80</u>	x 3 = <u>240</u>																			
FACU species <u>7</u>	x 4 = <u>28</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>172</u> (A)	<u>413</u> (B)																			
Prevalence Index = B/A = <u>2.40</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Prunus serotina</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Hamamelis virginiana</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	<u>7</u>	<u>=Total Cover</u>																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Glyceria striata</u>	<u>25</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Onoclea sensibilis</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Carex intumescens</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u>Laportea canadensis</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	<u>75</u>	<u>=Total Cover</u>																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	<u> </u> =Total Cover																			

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation
 Present? Yes X No

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

Hydrophytic vegetation is present. Dead cottonwood (topped) is not included in cover calculations. Paper wasp nest observed.

SOIL

Sampling Point DP53

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP54

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Hamamelis virginiana</u>	<u>35</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)																
2. <u>Acer rubrum</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Prunus serotina</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Betula papyrifera</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>80</u>		=Total Cover		Prevalence Index worksheet: <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>2</u></td> <td>x 2 = <u>4</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>67</u></td> <td>x 4 = <u>268</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>99</u></td> <td>(A) <u>362</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.66</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>2</u>	x 2 = <u>4</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>67</u>	x 4 = <u>268</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>99</u>	(A) <u>362</u> (B)	Prevalence Index = B/A = <u>3.66</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>2</u>	x 2 = <u>4</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>67</u>	x 4 = <u>268</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>99</u>	(A) <u>362</u> (B)																			
Prevalence Index = B/A = <u>3.66</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Hamamelis virginiana</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Fraxinus pennsylvanica</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>12</u>		=Total Cover		Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Maianthemum canadense</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Hamamelis virginiana</u>	<u>2</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>7</u>		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____		=Total Cover																		

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation
 Present? Yes No X

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

Hydrophytic vegetation is not present. Witch-hazel in herbaceous layer shoots and in shrub layer < 1m tall. About 18 ft separates this sampling point from its paired wetland sampling point (DP53) with 1 -2 ft change in elevation. Little herbaceous cover due to leaf litter and shade.

SOIL

Sampling Point DP54[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/3/23

Applicant/Owner: St. Clair County State: MI Sampling Point: DP55

Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E

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

Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.890789 Long: -82.546368 Datum: WGS84

Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric) NWI classification: N/A

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

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

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

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u> Hydric Soil Present? Yes <u> X </u> No <u> </u> Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u> 31 </u>
---	---

Remarks: (Explain alternative procedures here or in a separate report.)
 An analysis of antecedent precipitation indicates that environmental conditions were wetter than normal range. Drain/ditch to west has impacted internal drainage in these sandy soils.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u> </u> Surface Water (A1) <u> X </u> High Water Table (A2) <u> X </u> Saturation (A3) <u> </u> Water Marks (B1) <u> </u> Sediment Deposits (B2) <u> </u> Drift Deposits (B3) <u> </u> Algal Mat or Crust (B4) <u> </u> Iron Deposits (B5) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Sparsely Vegetated Concave Surface (B8) <u> </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13) <u> </u> Marl Deposits (B15) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Thin Muck Surface (C7) <u> </u> Other (Explain in Remarks)		<u>Secondary Indicators (minimum of two required)</u> <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
---	--	---

Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 12 </u> Saturation Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
---	---

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

Remarks:
 Wetland hydrology is indicated. Data point taken on drier side of wetland; standing water in pockets to west toward ditch. Ditch impacts internal drainage.

Sampling Point: DP55

Tree Stratum (Plot size: 30 ft)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Acer rubrum</i>	80	Yes	FAC
2.	<i>Ulmus americana</i>	5	No	FACW
3.	<i>Quercus rubra</i>	5	No	FACU
4.	<i>Fraxinus pennsylvanica</i>	3	No	FACW
5.				
6.				
7.				
		93	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15 ft)				
1.	<i>Prunus serotina</i>	15	Yes	FACU
2.	<i>Fraxinus pennsylvanica</i>	15	Yes	FACW
3.				
4.				
5.				
6.				
7.				
		30	=Total Cover	
Herb Stratum (Plot size: 5 ft)				
1.	<i>Solidago rugosa</i>	25	Yes	FAC
2.	<i>Doellingeria umbellata</i>	10	Yes	FACW
3.	<i>Fraxinus pennsylvanica</i>	3	No	FACW
4.	<i>Toxicodendron rydbergii</i>	2	No	FAC
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
		40	=Total Cover	
Woody Vine Stratum (Plot size: 15 ft)				
1.				
2.				
3.				
4.				
			=Total Cover	

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 36	x 2 = 72
FAC species 107	x 3 = 321
FACU species 20	x 4 = 80
UPL species 0	x 5 = 0
Column Totals: 163 (A)	473 (B)
Prevalence Index = B/A = 2.90	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

Hydrophytic vegetation is present. Little herbaceous cover due to shade and leaf litter, royal fern in tree sampling area.

SOIL

Sampling Point DP55

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP56

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</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>25.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>70</u></td> <td>x 3 = <u>210</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>160</u> (A)</td> <td><u>570</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.56</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>70</u>	x 3 = <u>210</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>160</u> (A)	<u>570</u> (B)	Prevalence Index = B/A = <u>3.56</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>70</u>	x 3 = <u>210</u>																			
FACU species <u>90</u>	x 4 = <u>360</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>160</u> (A)	<u>570</u> (B)																			
Prevalence Index = B/A = <u>3.56</u>																				
2. <u>Prunus serotina</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Betula papyrifera</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>90</u> =Total Cover		Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Prunus serotina</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
			<u>10</u> =Total Cover																	
Herb Stratum (Plot size: <u>5 ft</u>)			Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																	
1. <u>Prunus serotina</u>	<u>30</u>	<u>Yes</u>		<u>FACU</u>																
2. <u>Gaultheria procumbens</u>	<u>30</u>	<u>Yes</u>		<u>FACU</u>																
3. _____	_____	_____		_____																
4. _____	_____	_____		_____																
5. _____	_____	_____		_____																
6. _____	_____	_____		_____																
7. _____	_____	_____		_____																
8. _____	_____	_____		_____																
9. _____	_____	_____		_____																
10. _____	_____	_____		_____																
11. _____	_____	_____		_____																
			<u>60</u> =Total Cover																	
Woody Vine Stratum (Plot size: <u>15 ft</u>)			Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																	
1. _____	_____	_____		_____																
2. _____	_____	_____		_____																
3. _____	_____	_____		_____																
4. _____	_____	_____		_____																
			_____ =Total Cover																	

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

Hydrophytic vegetation is not present. About 25 ft separates this sampling point from its paired wetland sampling point (DP55) with 1 ft change in elevation. Lots of leaf litter. Saplings and shoots of cherry in shrub and herb strata.

SOIL

Sampling Point DP56

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/4/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP57
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: <1%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.893868 Long: -82.543847 Datum: WGS84
Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation X , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>18Q</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	

Remarks: (Explain alternative procedures here or in a separate report.)
An analysis of antecedent precipitation indicates that environmental conditions were wetter than normal range. Data point taken in area with many trees cleared/downed.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u> X </u> Water-Stained Leaves (B9) <u> X </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> X </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 6 </u> Saturation Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 0 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Wetland hydrology is present and indicated. Standing water in pockets. High water table throughout this part of the wetland.	

VEGETATION – Use scientific names of plants.

 Sampling Point: DP57

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Populus deltoides</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. <u>Acer rubrum</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Carpinus caroliniana</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
4. <u>Ulmus americana</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>75</u>		<u>=Total Cover</u>		Prevalence Index worksheet: <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>25</u></td> <td>x 1 = <u>25</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>100</u></td> <td>x 3 = <u>300</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>165</u></td> <td>(A) <u>405</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.45</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>25</u>	x 1 = <u>25</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>100</u>	x 3 = <u>300</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>165</u>	(A) <u>405</u> (B)	Prevalence Index = B/A = <u>2.45</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>25</u>	x 1 = <u>25</u>																			
FACW species <u>40</u>	x 2 = <u>80</u>																			
FAC species <u>100</u>	x 3 = <u>300</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>165</u>	(A) <u>405</u> (B)																			
Prevalence Index = B/A = <u>2.45</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>15</u>		<u>=Total Cover</u>																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Calamagrostis canadensis</u>	<u>20</u>	<u>Yes</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <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 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Symphyotrichum lanceolatum</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Ranunculus hispidus</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Onoclea sensibilis</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Carex stricta</u>	<u>5</u>	<u>No</u>	<u>OBL</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>75</u>		<u>=Total Cover</u>																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
<u> </u>		<u>=Total Cover</u>		Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																

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

Hydrophytic vegetation is present. Carex crinita and Glyceria striata within tree sampling area. Canopy opened due to downing of many tall trees.

SOIL

Sampling Point DP57

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP58

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer rubrum</u>	<u>70</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>100</u></td> <td>x 3 = <u>300</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>140</u> (A)</td> <td><u>460</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.29</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>100</u>	x 3 = <u>300</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>140</u> (A)	<u>460</u> (B)	Prevalence Index = B/A = <u>3.29</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>100</u>	x 3 = <u>300</u>																			
FACU species <u>40</u>	x 4 = <u>160</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>140</u> (A)	<u>460</u> (B)																			
Prevalence Index = B/A = <u>3.29</u>																				
2. <u>Carpinus caroliniana</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>80</u> =Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Hamamelis virginiana</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Carpinus caroliniana</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		<u>45</u> =Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Gaultheria procumbens</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. <u>Aralia nudicaulis</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Hydrophyllum virginianum</u>	<u>3</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Carpinus caroliniana</u>	<u>2</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		<u>15</u> =Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		_____ =Total Cover																		

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

Hydrophytic vegetation is not present. Fails the Prevalence Index @ 3.29. About 20 ft separates this sampling point from its paired wetland sampling point (DP57) with 2 ft change in elevation. Little herbaceous cover due to shade and leaf litter. Carpinus caroliniana shoots in herb stratum.

SOIL

Sampling Point DP58

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Northcentral and Northeast Region See ERDC/EL TR-12-1; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp: 11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
--	--

Project/Site: ST CLAIR COUNTY INTERNATIONAL AIRPORT (PHN) City/County: St Clair Sampling Date: 10/4/23
Applicant/Owner: St. Clair County State: MI Sampling Point: DP59
Investigator(s): Brauna Hartzell, Mead & Hunt, Inc. Section, Township, Range: Section 3, T5N, R16E
Landform (hillside, terrace, etc.): Drainageway Local relief (concave, convex, none): Concave Slope %: 1-2%
Subregion (LRR or MLRA): LRR L, MLRA 99 Lat: 42.893835 Long: -82.542759 Datum: WGS84
Soil Map Unit Name: Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric) NWI classification: PEM5C
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> X </u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: <u>25A</u>
Hydric Soil Present? Yes <u> X </u> No <u> </u>	
Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	
Remarks: (Explain alternative procedures here or in a separate report.) An analysis of antecedent precipitation indicates that environmental conditions were wetter than normal range. Data point taken at edge of drainageway.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators</u> (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u> </u> Water-Stained Leaves (B9) <u> X </u> High Water Table (A2) <u> </u> Aquatic Fauna (B13) <u> X </u> Saturation (A3) <u> </u> Marl Deposits (B15) <u> </u> Water Marks (B1) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Sediment Deposits (B2) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Drift Deposits (B3) <u> </u> Presence of Reduced Iron (C4) <u> </u> Algal Mat or Crust (B4) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u> </u> Iron Deposits (B5) <u> </u> Thin Muck Surface (C7) <u> </u> Inundation Visible on Aerial Imagery (B7) <u> </u> Other (Explain in Remarks) <u> </u> Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators</u> (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u> </u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u> X </u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u> </u> Microtopographic Relief (D4) <u> X </u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Water Table Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 10 </u> Saturation Present? Yes <u> X </u> No <u> </u> Depth (inches): <u> 6 </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> X </u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Wetland hydrology is present and indicated. Some ponded water and water-stained leaves in other areas of this drainageway wetland.		

VEGETATION – Use scientific names of plants.

 Sampling Point: DP59

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>9</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)																
2. <u>Acer rubrum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Quercus rubra</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Prunus serotina</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>35</u>		=Total Cover		Prevalence Index worksheet: <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>30</u></td> <td>x 2 = <u>60</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>37</u></td> <td>x 4 = <u>148</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>97</u></td> <td>(A) <u>298</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.07</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>30</u>	x 2 = <u>60</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>37</u>	x 4 = <u>148</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>97</u>	(A) <u>298</u> (B)	Prevalence Index = B/A = <u>3.07</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>30</u>	x 2 = <u>60</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>37</u>	x 4 = <u>148</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>97</u>	(A) <u>298</u> (B)																			
Prevalence Index = B/A = <u>3.07</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Quercus rubra</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Hamamelis virginiana</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
4. <u>Quercus bicolor</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>35</u>		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Osmundastrum cinnamomeum</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Fraxinus pennsylvanica</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Thelypteris palustris</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>																	
4. <u>Onoclea sensibilis</u>	<u>3</u>	<u>No</u>	<u>FACW</u>																	
5. <u>Nabalus albus</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
6. <u>Quercus bicolor</u>	<u>2</u>	<u>No</u>	<u>FACW</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>27</u>		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____		=Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is present. Little herbaceous cover due to shade.																				

SOIL

Sampling Point DP59

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

VEGETATION – Use scientific names of plants.

 Sampling Point: DP 60

Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Prunus serotina</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>37.5%</u> (A/B)																
2. <u>Betula papyrifera</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Acer rubrum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
5. <u>Hamamelis virginiana</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>60</u>		=Total Cover		Prevalence Index worksheet: <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>35</u></td> <td>x 3 = <u>105</u></td> </tr> <tr> <td>FACU species <u>97</u></td> <td>x 4 = <u>388</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>132</u> (A)</td> <td><u>493</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.73</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>35</u>	x 3 = <u>105</u>	FACU species <u>97</u>	x 4 = <u>388</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>132</u> (A)	<u>493</u> (B)	Prevalence Index = B/A = <u>3.73</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>35</u>	x 3 = <u>105</u>																			
FACU species <u>97</u>	x 4 = <u>388</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>132</u> (A)	<u>493</u> (B)																			
Prevalence Index = B/A = <u>3.73</u>																				
Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)																				
1. <u>Hamamelis virginiana</u>	<u>50</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Carpinus caroliniana</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>60</u>		=Total Cover																		
Herb Stratum (Plot size: <u>5 ft</u>)																				
1. <u>Gaultheria procumbens</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Acer rubrum</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Nabalus albus</u>	<u>2</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>12</u>		=Total Cover																		
Woody Vine Stratum (Plot size: <u>15 ft</u>)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____		=Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) Hydrophytic vegetation is not present. Does not meet hydric soils criteria. About 15 ft separates this sampling point from its paired wetland sampling point (DP59) with 2 ft change in elevation. Little herbaceous cover due to shade. Acer rubrum shoots in herb stratum.																				

SOIL

Sampling Point DP 60

[illegible]

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix H Field Photographs



Photo 1. Wetland 1, general site. View to the southeast. (08-16-2022)



Photo 2. Wetland 1, general site. View to the southwest. (08-16-2022)



Photo 3. Wetland 1, Data Points 1 and 2. View to the east. (08-16-2022)



Photo 4. Wetland 1, Data Points 1 and 2. View to the west. (08-16-2022)



Photo 5. Wetland 1, Data Points 3 and 4. View to the southeast. (08-16-2022)



Photo 6. Wetland 1, Data Points 3 and 4. View to the northwest. (08-16-2022)



Photo 7. Wetland 2, general site. View to the east. (08-16-2022)



Photo 8. Wetland 2, general site. View to the northeast. (08-16-2022)



Photo 9. Wetland 3, general site. View to the north. (08-16-2022)



Photo 10. Wetland 3, general site. View to the northwest. (09-25-2023)



Photo 11. Wetland 3, general site. View to the southwest. (08-16-2022)



Photo 12. Wetland 4, general site. View to the northwest. (09-25-2023)



Photo 13. Wetland 4, general site. View to the northwest. (09-25-2023)



Photo 14. Wetland 5, general site. View to the southeast. (08-16-2022)



Photo 15. Wetland 5, general site. View to the north. (08-16-2022)



Photo 16. Wetland 5, Data Points 5 and 6. View to the southeast. (08-17-2022)



Photo 17. Wetland 5, Data Points 5 and 6. View to the north. (8-17-2022)



Photo 18. Wetland 6, general site. View to the northwest. (08-16-2022)



Photo 19. Wetland 6, general site. View to the northeast. (08-16-2022)



Photo 20. Wetland 6, general site. View to the east. (08-16-2022)



Photo 21. Wetland 6, Data Points 7 and 8. View to the west. (08-17-2022)



Photo 22. Wetland 6, Data Points 7 and 8. View to the east. (08-17-2022)



Photo 23. Wetland 7C, general site. Looking downstream. View to the south. (08-17-2022)



Photo 24. Wetland 7C, general site. Looking upstream . View to the north. (08-17-2022)



Photo 25. Wetland 7B, general site. View to the northeast. (10-04-2022)



Photo 26. Wetland 7B, general site. View to the northwest. (06-07-2023)



Photo 27. Wetland 7B, Data Points 21 and 22. View to the northeast. (10-04-2022)



Photo 28. Wetland 7B, Data Points 21 and 22. View to the northwest. (10-04-2022)



Photo 29. Wetland 7B, general site. View to the southwest. (10-04-2022)



Photo 30. Wetland 7C, general site. Ditch area. View to the southwest. (08-17-2022)



Photo 31. Wetland 7C ditch, general site. View to the northwest. (06-07-2023)



Photo 32. Wetland 7C, Data Point 20 (Upland) along ditch line. View to the northeast. (10-03-2022)



Photo 33. Wetland 7C, Data Point 20 (Upland). View to the southeast. (10-03-2022)



Photo 34. Wetland 7C, Data Point 19 (Wetland). View to the northeast. (10-03-2022)



Photo 35. Wetland 7C, ditch, general site. Looking downstream. View to the southwest. (08-17-2022)



Photo 36. Wetland 7C, ditch, general site. Looking upstream. View to the northeast. (08-17-2022)



Photo 37. Wetland 8A, interior general site. View to the north. (06-07-2023)



Photo 38. Wetland 8A, Data Point 18 (Upland) & boundary. View to the west. (10-03-2022)



Photo 39. Wetland 8A, Data Point 17 (Wetland). View to the west. (10-03-2022)



Photo 40. Wetland 8C, ditch, general site. Looking downstream. View to the east. (08-17-2022)



Photo 41. Wetland 8D, ditch, general site. Looking upstream. View to the north. (08-17-2022)



Photo 42. Wetland 9, culvert and roadside ditch. View to the west. (08-18-2022)



Photo 43. Wetland 9, Data Point 10 (Upland). View to the west. (08-18-2022)



Photo 44. Wetland 9, Data Point 9 (Wetland). View to the north. (08-18-2022)



Photo 45. Wetland 9, water-stained leaves and water marks. View to the north. (08-18-2022)



Photo 46. Wetland 10A, general site. View to the southeast. (08-19-2022)



Photo 47. Wetland 10A, general site. View to the northeast. (08-19-2022)



Photo 48. Wetland 10A, general site. View to the south. (08-19-2022)



Photo 49. Wetland 10A, Data Points 13 and 14. View to the east. (08-22-2022)



Photo 50. Wetland 10A, general site. View to the south. (08-22-2022)



Photo 51. Wetland 10A, swale to road. View to the west. (08-19-2022)



Photo 52. Wetland 10A, central depressional area. View to the north. (08-19-2022)



Photo 53. Wetland 10A, general site. View to the east. (08-23-2022)



Photo 54. Wetland 10A, Data Points 15 and 16. View to the south. (08-23-2022)



Photo 55. Wetland 10A, general site. View to the southwest. (08-23-2022)



Photo 56. Wetland 10A, general site. View to the north. (08-23-2022)



Photo 57. Wetland 10A, general site. View to the north. (06-12-2023)



Photo 58. Wetland 10A, general site. View to the southeast. (06-14-2023)



Photo 59. Wetland 10B, roadside ditch, standing water. View to the south. (09-25-2023)



Photo 60. Wetland 10B, roadside ditch. View to the south. (09-25-2023)



Photo 61. Wetland 11, general site. View to the west. (08-22-2022)



Photo 62. Wetland 11, general site. View to the east. (08-22-2022)



Photo 63. Wetland 12, general site. View to the northwest. (08-22-2022)



Photo 64. Wetland 12, general site. View to the northwest. (08-22-2022)



Photo 65. Wetland 13, general site. View to the east. (08-22-2022)



Photo 66. Wetland 13, general site. View to the east. (8-22-2022)



Photo 67. Wetland 15C, roadside ditch. View to the north. (10-03-2022)



Photo 68. Wetland 15C, roadside ditch. View to the south. (10-03-2022)



Photo 69. Wetland 15B, roadside ditch. View to the north. (10-03-2022)



Photo 70. Wetland 15B, roadside ditch. View to the north. (10-03-2022)



Photo 71. Wetland 16A, roadside ditch. View to the south. (10-03-2022)



Photo 72. Wetland 16C, roadside ditch. View to the south. (10-03-2022)



Photo 73. Wetland 16C, roadside ditch. View to the north. (10-03-2022)



Photo 74. Wetland 17, general site. View to the southwest. (06-07-2023)



Photo 75. Wetland 17, general site. View to the northeast. (06-07-2023)



Photo 76. Wetland 18A, general site. View to the northwest. (10-04-2022)



Photo 77. Wetland 18D, general site. View to the southwest. (10-04-2022)



Photo 78. Wetland 18B, general site. View to the northwest. (10-04-2022)



Photo 79. Wetland 18D, Data Point 30 (Upland) and boundary. View to the northwest. (10-05-2022)



Photo 80. Wetland 18D, Data Point 29 (Wetland) and boundary. View to the northwest. (10-05-2022)



Photo 81. Wetland 18C, general site. View to the west. (10-04-2022)



Photo 82. Wetland 18E, shrub fringe. View to the northwest. (10-04-2022)



Photo 83. Wetland 18E, Reed-dominated core. View to the northwest. (06-06-2023)



Photo 84. Wetland 18C, Data Points 27 and 28. View to the west. (10-05-2022)



Photo 85. Wetland 18C, Data Points 27 and 28. View to the north. (10-05-2022)



Photo 86. Wetland 18E, general site. View to the north. (06-07-2023)



Photo 87. Wetland 18G, general site. View to the southeast. (06-07-2023)



Photo 88. Wetland 18G, general site. View to the northeast. (06-13-2023)



Photo 89. Wetland 18H, general site. View to the north. (10-05-2022)



Photo 90. Wetland 18J, general site. View to the northeast. (10-05-2022)



Photo 91. Wetland 18J, Data Point 25 (Wetland). View to the southeast. (10-05-2022)



Photo 92. Wetland 18J, Data Point 26 (Upland). View to the northwest. (10-05-2022)



Photo 93. Wetland 18J, Data Points 23 and 24. View to the southeast. (10-05-2022)



Photo 94. Wetland 18J, Data Points 23 and 24. View to the northwest. (10-05-2022)



Photo 95. Wetland 18J, general site. View to the southeast. (10-05-2022)



Photo 96. Wetland 18J, general site. View to the southwest. (10-05-2022)



Photo 97. Wetland 18N, general site. View to the southwest. (10-06-2022)



Photo 98. Wetland 18N, general site. View to the north. (10-06-2022)



Photo 99. Wetland 18O, general site. View to the east. (10-07-2022)



Photo 100. Wetland 18O, Data Points 33 and 34. View to the northeast. (10-07-2022)



Photo 101. Wetland 18O, general site. View to the south. (10-06-2022)



Photo 102. Wetland 18O, general site. View to the north. (10-07-2022)



Photo 103. Wetland 18I, general site. View to the south. (09-30-2023)



Photo 104. Wetland 18I, Data Points 48 and 49. View to the southeast. (09-30-2023)



Photo 105. Wetland 181, general site. View to the south. (09-28-2023)



Photo 106. Wetland 181, general site, phragmites. View to the southeast. (09-28-2023)



Photo 107. Wetland 181, general site. View to the south. (09-28-2023)



Photo 108. Wetland 181, drainage general site. View to the southwest. (09-28-2023)



Photo 109. Wetland 181, general site. View to the north. (09-28-2023)



Photo 110. Wetland 181, ditch segment, narrow. View to the north. (06-09-2023)



Photo 111. Wetland 181, drainage ditch, general site. View to the west. (06-09-2023)



Photo 112. Wetland 181, algal mats. View to the north. (06-08-2023)



Photo 113. Wetland 18I, general site. View to the southeast. (06-09-2023)



Photo 114. Wetland 18I, Data Points 49 and 50. View to the north. (09-30-2023)



Photo 115. Wetland 18I, general site with young cottonwoods. View to the northwest. (09-30-2023)



Photo 116. General site upland area. View to the northeast. (09-28-2023)



Photo 117. Wetland 18Q, Data Points 57 and 58. View to the west. (10-04-2023)



Photo 118. Wetland 18Q, general site. View to the southwest. (09-29-2023)



Photo 119. Wetland 18Q, downed trees. View to the northwest. (10-04-2023)



Photo 120. Wetland 18Q, downed trees. View to the north. (06-09-2023)



Photo 121. Wetland 19, general site. View to the southeast. (06-08-2023)



Photo 122. Wetland 19, general site. View to the northeast. (06-08-2023)



Photo 123. Wetland 19, general site. View to the northwest. (06-08-2023)



Photo 124. Wetland 20, general site. View to the southwest. (06-08-2023)



Photo 125. Wetland 20, Data Points 37 and 38. View to the northwest. (6-8-2023)



Photo 126. Wetland 20, general site. View to the northeast. (06-08-2023)



Photo 127. Wetland 20, general site. View to the northeast. (06-07-2023)



Photo 128. Wetland 21, general site. View to the northwest. (10-06-2022)



Photo 129. Wetland 21, central core. View to the northwest. (10-07-2022)



Photo 130. Wetland 21, wooded depressional area outside fence. View to the southeast. (10-07-2022)



Photo 131. Wetland 21, Data Points 35 and 36. View to the east. (10-07-2022)



Photo 132. Wetland 22, general site. View to the northeast. (06-08-2023)



Photo 133. Wetland 22, general site. View to the northwest. (06-08-2023)



Photo 134. Wetland 22, general site. View to the northeast. (06-08-2023)



Photo 135. Wetland 22, general site. View to the south. (06-08-2023)



Photo 136. Wetland 23B, general site. View to the northeast. (10-07-2022)



Photo 137. Wetland 23B, Data Points 31 and 32. View to the northeast. (10-07-2022)



Photo 138. Wetland 23B, Data Points 31 and 32. View to the south. (10-07-2022)



Photo 139. Wetland 23B, general site along fence. View to the northeast. (10-07-2022)



Photo 140. Wetland 23A, general site. View to the northwest. (10-07-2022)



Photo 141. Wetland 23A, general site along fence. View to the northeast. (10-07-2022)



Photo 142. Wetland 23A, general site. View to the northeast. (10-07-2022)



Photo 143. Wetland 23A, general site. View to the southwest. (10-07-2022)



Photo 144. Wetland 25A, standing water in pockets, water stained leaves. View to the northwest. (10-04-2023)



Photo 145. Wetland 25A, Data Points 59 and 60. View to the northeast. (10-04-2023)



Photo 146. Wetland 25A, standing water. View to the west. (09-29-2023)



Photo 147. Wetland 25C, crossing at pipeline corridor. View to the west. (10-02-2023)



Photo 148. Wetland 25D, ditch floodplain. View to the south. (10-02-2023)



Photo 149. Wetland 25D, ditch with flowing water. View to the north. (10-02-2023)



Photo 150. Wetland 25E, general site. View to the south. (10-02-2023)



Photo 151. Wetland 25E, general site. View to the south. (10-02-2023)



Photo 152. Wetland 25E, narrow ditch flowing to larger constructed ditch. View to the southeast. (10-03-2023)



Photo 153. Wetland 25E, narrow ditch flowing to east. View to the northwest. (10-03-2023)



Photo 154. Wetland 26, general site. View to the east. (10-03-2023)



Photo 155. Wetland 27, ditch flowing to east under access road. View to the west. (10-02-2023)



Photo 156. Wetland 27, drainage from residences to west. View to the southeast. (10-03-2023)



Photo 157. Wetland 27, royal fern-dominated herbaceous layer. View to the southeast. (10-03-2023)



Photo 158. Wetland 27, drainage to north to access road. View to the north. (10-03-2023)



Photo 159. Wetland 28, general site, depressional basin. View to the southeast. (10-03-2023)



Photo 160. Wetland 29, general site. View to the west. (10-02-2023)



Photo 161. Wetland 29, general site. View to the west. (10-02-2023)



Photo 162. Wetland 30A, general site. View to the east. (06-13-2023)



Photo 163. Wetland 30A, general site. View to the northwest. (06-13-2023)



Photo 164. Wetland 30A, general site. View to the west. (10-06-2022)



Photo 165. Wetland 30A, Data Points 39 and 40. View to the southwest. (06-13-2023)



Photo 166. Wetland 30A, general site. View to the southwest. (06-13-2023)



Photo 167. Wetland 30A, shrubs along ditch. View to the south. (06-13-2023)



Photo 168. Wetland 30C, general site. View to the east. (06-13-2023)



Photo 169. Wetland 30A, Data Points 51 and 52. View to the east. (10-01-2023)



Photo 170. Wetland 30A, general site.. View to the northeast. (06-14-2023)



Photo 171. Wetland 30A, north of upland island. View to the north. (10-01-2023)



Photo 172. Wetland 30A, general site. View to the northwest. (06-14-2023)



Photo 173. Wetland 30D, shrubby area. View to the northeast. (10-01-2023)



Photo 174. Wetland 30(X)A, general site. View to the southwest. (09-26-2023)



Photo 175. Wetland 30B, general site. View to the northeast. (09-26-2023)



Photo 176. Wetland 30B, Data Point 43 (Wetland) and boundary. View to the south. (09-30-2023)



Photo 177. Wetland 30B, Data Points 43 and 44. View to the northwest. (09-30-2023)



Photo 178. Wetland 31, general site. View to the south. (10-01-2023)



Photo 179. Wetland 31, standing water. View to the southeast. (10-01-2023)



Photo 180. Wetland 31, sparsely vegetated concave surface. View to the north. (10-01-2023)



Photo 181. Wetland 31, Data Points 55 and 56. View to the northwest. (10-03-2023)



Photo 182. Wetland 32A, general site. View to the north. (09-26-2023)



Photo 183. Wetland 32B, general site. View to the northeast. (09-26-2023)



Photo 184. Wetland 32B, Data Points 45 and 46. View to the northeast. (09-30-2023)



Photo 185. Wetland 32B, drainageway. View to the southeast. (09-30-2023)



Photo 186. Wetland 33, beyond AOI. View to the southeast. (09-26-2023)

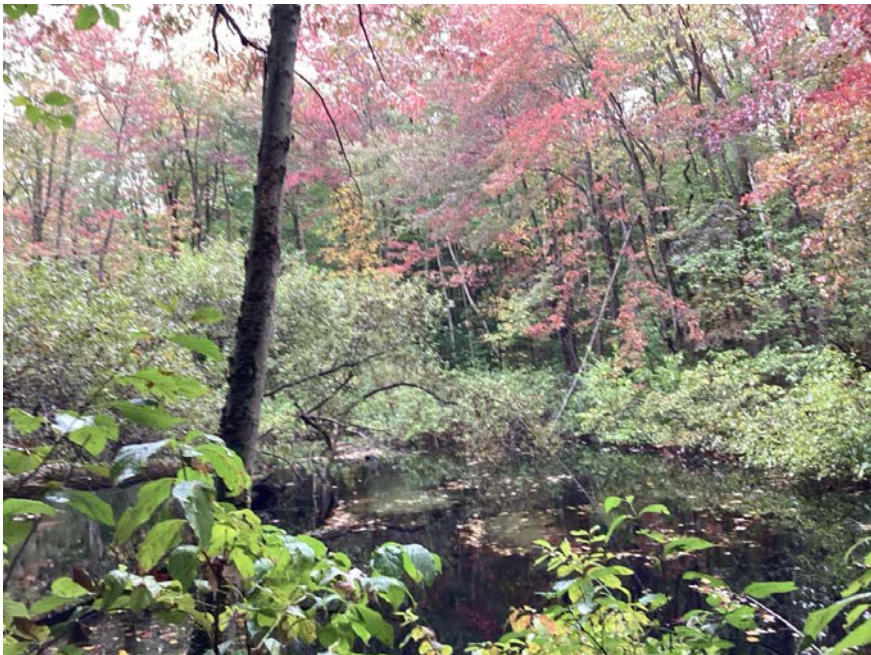


Photo 187. Wetland 33, general site. View to the southwest. (09-26-2023)



Photo 188. Wetland 33, Data Points 41 and 42. View to the north. (06-13-2023)



Photo 189. Wetland 33, under drier than normal conditions. View to the west. (10-06-2022)



Photo 190. Wetland 33, Water marks on trees under normal conditions. View to the north. (06-13-2023)



Photo 191. Wetland 35A, general site. View to the west. (10-02-2023)



Photo 192. Wetland 35A, general site. View to the northeast. (10-02-2023)



Photo 193. Wetland 35C at pipeline corridor . View to the east. (10-02-2023)



Photo 194. Wetland 35B, general site with standing water. View to the northwest. (10-02-2023)



Photo 195. Wetland 35B, Data Points 53 and 54. View to the northeast. (10-03-2023)



Photo 196. Wetland 35B, general site. View to the south. (10-01-2023)



Photo 197. Wetland 35B, general site. View to the south. (10-01-2023)



Photo 198. Wetland 35(X)C, pipeline corridor on private property . View to the west. (10-02-2023)



Photo 199. Wetland 36B, general site. View to the northwest. (10-01-2023)



Photo 200. Wetland 36A, general site. View to the northeast. (10-01-2023)



Photo 201. Wetland 37(X), ditch. View to the south. (10-02-2023)



Photo 202. Wetland 37(X), ditch. View to the south. (10-02-2023)

Appendix I Wetland Descriptions

Wetland 1	
Site Information	
Sampling Date	8/16/2022 (Normal Conditions)
Cowardin Class	PEM
Wetland Description	Wetland 1 is a shallow depression located within the Runway 22 RSA and is frequently mowed. The wetland is dominated by silky dogwood (<i>Cornus amomum</i> : FACW), meadow willow (<i>Salix petiolaris</i> : FACW), woolly sedge (<i>Carex pellita</i> : OBL), and yellow-green sedge (<i>Carex flava</i> : OBL) with some Virginia blueflag (<i>Iris virginica</i> : OBL), common reed (<i>Phragmites australis</i> : FACW), hop sedge (<i>Carex lupulina</i> : OBL), and soft rush (<i>Juncus effusus</i> : OBL). Growth of shrubby vegetation is kept in check by the frequent mowing; however, dogwood and willow were dominants in the shrub layer at wetland sampling points 1 and 3. Crayfish burrows were observed throughout the wetland. Wetland 1 appears to be internally drained with no apparent outlets and the majority of the wetland is underlain by fine sandy soils.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric); Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	Photos 1 - 6
Associated Data Pts***	DPs 1 - 4
Map Number(s)*	3
Comments	Shallow depression, mowed frequently
Wetland Criteria	
Dominant Vegetation	<i>Cornus amomum</i> (FACW), <i>Carex pellita</i> (OBL), <i>Carex flava</i> (OBL); <i>Salix petiolaris</i> (FACW), <i>Carex pellita</i> (OBL)
Hydric Soil Indicators	Depleted Below Dark Surface (A11), Depleted Matrix (F3), Redox Depressions (F8); Depleted Below Dark Surface (A11), Redox Dark Surface (F6)
Hydrology Indicators	Crayfish Burrows (C8), Geomorphic Position (D2), FAC-Neutral Test (D5); Crayfish Burrows (C8), Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, and distinct topographic changes along the depression.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 2	
Site Information	
Sampling Date	8/16/2022 (Normal Conditions)
Cowardin Class	PEM
Wetland Description	Wetland 2 is a shallow depression located within the Runway 22 RSA and is frequently mowed. It is dominated by sensitive fern (<i>Onoclea sensibilis</i> : FACW), wooly sedge (<i>Carex pellita</i> : OBL) along with some Virginia blueflag (<i>Iris virginica</i> : OBL). The wetland is entirely underlain by fine sandy soils and appears to be internally drained with no apparent outlets.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric)
Photo Numbers**	Photos 7 - 8
Associated Data Pts***	No DPs
Map Number(s)*	3
Comments	Shallow depression, mowed frequently
Wetland Criteria	
Dominant Vegetation	<i>Onoclea sensibilis</i> (FACW), <i>Carex pellita</i> (OBL)
Hydric Soil Indicators	Observed Depleted matrix
Hydrology Indicators	Observed Geomorphic Position, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, and distinct topographic changes along the depression.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 3	
Site Information	
Sampling Date	8/16/2022 (Normal Conditions), 9/25/2023 (Wetter than Normal)
Cowardin Class	PEM
Wetland Description	Wetland 3 is a shallow, broad drainageway located within the Runway 22 RSA and is infrequently mown due to the persistence of standing water over the growing season. Standing water was present on both site visits. Wetland 3 is dominated by common reed (<i>Phragmites australis</i> : FACW), sensitive fern (<i>Onoclea sensibilis</i> : FACW), and northern lady-fern (<i>Athyrium angustum</i> : FAC). This wetland is previously mapped as PEM5C on the NWI. Drainage appears to flow to the north outside of the AOI into a roadside ditch along Smith's Creek Road.
Mapped NWI Type	PEM5C
Mapped Soil Type/ Hydric Rating	Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric); Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric)
Photo Numbers**	Photos 9 - 11
Associated Data Pts***	No DPs
Map Number(s)*	3
Comments	Drainage swale, mowed periodically
Wetland Criteria	
Dominant Vegetation	<i>Phragmites australis</i> (FACW), <i>Onoclea sensibilis</i> (FACW), <i>Athyrium angustum</i> (FAC)
Hydric Soil Indicators	Observed Depleted matrix
Hydrology Indicators	Observed standing water to 2 inches in places, Saturation at the surface, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, and distinct topographic changes along the drainageway.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 4	
Site Information	
Sampling Date	8/16/2022 (Normal Conditions), 9/25/2023 (Wetter than Normal)
Cowardin Class	PEM
Wetland Description	Wetland 4 is a shallow drainageway located within the Runway 22 RSA and is infrequently mown due to the persistence of standing water over the growing season. Standing water was present on both field visits. It is dominated by common reed (<i>Phragmites australis</i> : FACW) with some purple loosestrife (<i>Lythrum salicaria</i> : OBL). This wetland is previously mapped as PEM1C on the NWI. Drainage appears to flow to the north outside of the AOI into a roadside ditch along Smith's Creek Road.
Mapped NWI Type	PEM1C
Mapped Soil Type/ Hydric Rating	Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric); Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric)
Photo Numbers**	Photos 12 - 13
Associated Data Pts***	No DPs
Map Number(s)*	3
Comments	Drainage swale, mowed periodically
Wetland Criteria	
Dominant Vegetation	<i>Phragmites australis</i> (FACW)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, and distinct topographic changes along the drainageway.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 5	
Site Information	
Sampling Date	8/17/2022 (Normal Conditions)
Cowardin Class	PEM
Wetland Description	Wetland 5 is a shallow depression located within the Runway 22 RSA and is frequently mowed. The wetland is dominated by green ash (<i>Fraxinus pennsylvanica</i> : FACW), gray dogwood (<i>Cornus racemosa</i> : FAC), hop sedge (<i>Carex lupulina</i> : OBL), and woolly sedge (<i>Carex pellita</i> : OBL) at wetland sampling point DP5. The eastern half of the wetland along an unpaved access road is dominated by yellow-green sedge (<i>Carex flava</i> : OBL) and variegated scouring-rush (<i>Equisetum variegatum</i> : FACW). Virginia blueflag (<i>Iris virginica</i> : OBL), fox sedge (<i>Carex vulpinoidea</i> : OBL), and ditch stone-crop (<i>Penthorum sedoides</i> : OBL) as well as variegated scouring-rush were also observed in the western half. Growth of shrubby vegetation is kept in check by the frequent mowing; however, dogwood and green ash were dominants in the shrub layer at wetland sampling point DP5. Crayfish burrows were observed throughout the wetland. Wetland 5 appears to be internally drained with no apparent outlets and the wetland is entirely underlain by fine sandy soils. The soil profile at DP 5 was found to consist of loamy soils, however.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric)
Photo Numbers**	Photos 14 - 17
Associated Data Pts***	DPs 5 - 6
Map Number(s)*	3
Comments	Shallow depression, mowed frequently
Wetland Criteria	
Dominant Vegetation	<i>Fraxinus pennsylvanica</i> (FACW), <i>Cornus racemosa</i> (FAC), <i>Carex lupulina</i> (OBL), <i>Carex pellita</i> (OBL)
Hydric Soil Indicators	Depleted Below Dark Surface (A11), Depleted Matrix (F3)
Hydrology Indicators	Crayfish Burrows (C8), Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, a lack of hydric soil indicators, and distinct topographic changes along the depression.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 6	
Site Information	
Sampling Date	8/17/2022 (Normal Conditions)
Cowardin Class	PEM
Wetland Description	Wetland 6 is a shallow depression located within the Runway 22 RSA and is frequently mowed. The wetland is dominated by common reed (<i>Phragmites australis</i> : FACW) along with ditch stone-crop (<i>Penthorum sedoides</i> : OBL), hop sedge (<i>Carex lupulina</i> : OBL), smooth saw-grass (<i>Cladium mariscoides</i> : OBL), and American water-plantain (<i>Alisma subcordatum</i> : OBL) as subdominants, seen at wetland sampling point DP7. Crayfish burrows were observed throughout the wetland along with water-stained leaves in some areas. Wetland 6 appears to be internally drained with no apparent outlets and the wetland is partially underlain by fine sandy soils. The soil profile at DP7 was found to consist of loamy soils, however.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric); Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric); Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric)
Photo Numbers**	Photos 18 - 22
Associated Data Pts***	DPs 7 - 8
Map Number(s)*	3
Comments	Shallow depression, mowed frequently
Wetland Criteria	
Dominant Vegetation	<i>Phragmites australis</i> (FACW)
Hydric Soil Indicators	Depleted Below Dark Surface (A11), Depleted Matrix (F3)
Hydrology Indicators	Water-Stained Leaves (B9), Crayfish Burrows (C8), Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping
 ** See Appendix H for Photos
 *** See Appendix G for Wetland Data Sheets

Wetland 7 (A, B, C)	
Site Information	
Sampling Date	8/17/2022 (Normal Conditions), 10/4/2022 (Drier than Normal), 6/7/2023 (Normal Conditions)
Cowardin Class	RUBx/PEM/PFO
Wetland Description	Wetland 7 is located near the Runway 4 end and consists of a deep, steep-sided constructed ditch (7C) and a connected area of emergent (7B) and forested wetland (7A) to the west. The ditch portion is part of drainage network that drains the western side of the runway and carries flows to the south. This ditch connects to the ditch portion of Wetland 8D to the east via a culvert under a crossing point and a connecting ditch contributes flows from the north. At wetland sampling point DP19, taken within the ditch, wetland hydrology was directly observed as standing water, a high water table, and saturation. Within the ditch, vegetation was dominated by shrubs alder (<i>Alnus incana</i> : FACW) and glossy buckthorn (<i>Frangula alnus</i> : FAC) and the herb layer was dominated by smooth saw-grass (<i>Cladium mariscoides</i> : OBL), Dudley's rush (<i>Juncus dudleyi</i> : FACW), and wrinkle-leaf goldenrod (<i>Solidago rugosa</i> : FAC) along with soft-stem rush (<i>Schoenoplectus tabernaemontani</i> : OBL), boneset (<i>Eupatorium perfoliatum</i> : FACW), and common reed (<i>Phragmites australis</i> : FACW) as subdominants. Standing water to about 4 - 5 inches deep was present throughout the ditch. Connected to this ditch via a narrow swale is a large expanse of wetland along the western side of the AOI consisting of emergent and forested sections. The emergent portion occupies the lowest landscape positions while the forested fringe occupies somewhat higher elevations along the western edge. At wetland sampling point DP21 taken along the emergent edge, common reed (<i>Phragmites australis</i> : FACW) and reed canary grass (<i>Phalaris arundinacea</i> : FACW) were co-dominants in the herb stratum, buttonbush (<i>Cephalanthus occidentalis</i> : OBL) dominated the shrub layer, and red maple (<i>Acer rubrum</i> : FAC) and paper birch (<i>Betula papyrifera</i> : FACU) were co-dominants in the tree stratum. Red maple and aspen (<i>Populus tremuloides</i> : FAC) were dominant within the forested portion with a sparse ground layer mostly dominated by ferns.
Mapped NWI Type	PEM5C (7A, B); R2UBFx (7C)
Mapped Soil Type/ Hydric Rating	Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric); Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric); Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric)
Photo Numbers**	Photos 23 - 36
Associated Data Pts***	DPs 19 - 22
Map Number(s)*	5, 7
Comments	Drainage swale
Wetland Criteria	
Dominant Vegetation	<i>Alnus incana</i> (FACW), <i>Frangula alnus</i> (FAC), <i>Cladium mariscoides</i> (OBL), <i>Juncus dudleyi</i> (FACW), <i>Solidago rugosa</i> (FAC), <i>Vitis riparia</i> (FAC); <i>Acer rubrum</i> (FAC), <i>Betula papyrifera</i> (FACU), <i>Cephalanthus occidentalis</i> (OBL), <i>Phragmites australis</i> (FACW), <i>Phalaris arundinacea</i> (FACW)
Hydric Soil Indicators	Sandy Redox (S5), High Chroma Sands (S11), Depleted Matrix (F3); Redox Dark Surface (F6)
Hydrology Indicators	Surface Water (A1), High Water Table (A2), Saturation (A3), Geomorphic Position (D2), FAC-Neutral Test (D5); Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary along the ditch was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, and distinct topographic changes along the steep-sided ditch. The boundary along the emergent/forested section was determined by a lack of wetland hydrology indicators, an absence of hydric soil indicators, and a more gradual topographic change along the boundary.

* See Appendix F for Wetland Mapping
 ** See Appendix H for Photos
 *** See Appendix G for Wetland Data Sheets

Wetland 8 (A, B, C, D)	
Site Information	
Sampling Date	8/17/2022, 6/7/2023 (Normal Conditions)
Cowardin Class	RUBx/PEM/PSS/PUB
Wetland Description	Wetland 8 consists of several wetland types and is dominated by a ditch section (8D) and a shallow marsh section (8A) connected by shrub (8B) and emergent (8C) sections. The ditch portion is part of the large drainage system draining the western side of Runway 4/22. Common reed (<i>Phragmites australis</i> : FACW) filled the ditch bottom and willows and red osier occupied the ditch slopes. The emergent section is a narrow swale connecting the shallow marsh to the main ditch and was formerly covered by shrubs but was cleared fairly recently; vegetative growth was dominated by reed canary grass (<i>Phalaris arundinacea</i> : FACW). A small area of shrubs occupies the area between the shallow marsh and the narrow swale. The shallow marsh (PUB) is mapped as PUBH on the NWI with a fringe of mapped PEM5C. At wetland sampling point DP17 taken along the edge of the marsh area, the herb layer was dominated by common reed with buttonbush (<i>Cephalanthus occidentalis</i> : OBL) and glossy buckthorn (<i>Frangula alnus</i> : FAC) in the shrub layer and red maple (<i>Acer rubrum</i> : FAC) dominating the tree-covered fringe of the marsh.
Mapped NWI Type	PUBH, PEM5C (8A);R2UBFx (8D)
Mapped Soil Type/ Hydric Rating	Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric); Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric)
Photo Numbers**	Photos 37 - 41
Associated Data Pts***	DPs 17 - 18
Map Number(s)*	5
Comments	Drainage swale and shallow marsh
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Cephalanthus occidentalis</i> (OBL), <i>Frangula alnus</i> (FAC), <i>Phragmites australis</i> (FACW)
Hydric Soil Indicators	Sandy Redox (S5), High Chroma Sands (S11)
Hydrology Indicators	Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the edge of the shallow marsh.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 9, 9(X)	
Site Information	
Sampling Date	8/18/2022 (Normal Conditions)
Cowardin Class	PFO
Wetland Description	Wetland 9 is a hardwood swamp located at the intersection of Smiths Creek and Allen roads, west of Allen Road. The wetland is dominated by red maple (<i>Acer rubrum</i> : FAC), elm (<i>Ulmus americana</i> : FACW), and glossy buckthorn (<i>Frangula alnus</i> : FAC). Other species observed included swamp white oak (<i>Quercus bicolor</i> : FACW), cottonwood (<i>Populus deltoides</i> : FAC), and quaking aspen (<i>Populus tremuloides</i> : FAC). The sparse herbaceous layer was dominated by crested sedge (<i>Carex cristatella</i> : FACW) with some fowl manna grass (<i>Glyceria striata</i> : OBL). Water-stained leaves, water marks, and sparsely vegetated concave surfaces were observed in several areas of the wetland, especially at the north end. The southern end of the wetland appears to be more impacted by invasive species such as oriental bittersweet (<i>Celastrus orbiculatus</i> : UPL) and common reed (<i>Phragmites australis</i> : FACW), especially along the Allen Road side of the wetland. The wetland continues beyond the project AOI. Wetland 9(X) is the portion of the wetland on private land estimated on the basis of contours, soils, and historic aeriels.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	Photos 42 - 45
Associated Data Pts***	DPs 9 - 10
Map Number(s)*	3
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Ulmus americana</i> (FACW), <i>Frangula alnus</i> (FAC), <i>Carex cristatella</i> (FACW)
Hydric Soil Indicators	Depleted Below Dark Surface (A11)
Hydrology Indicators	Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, lack of wetland hydrology indicators, and slight topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 10 (A, B)	
Site Information	
Sampling Date	8/19/2022 (Normal Conditions), 6/15/2023 (Normal Conditions), 9/25/2023 (Wetter than Normal)
Cowardin Class	PFO
Wetland Description	Wetland 10A is a hardwood swamp located at the intersection of Smiths Creek and Allen roads, east of Allen Road. The wetland was visited on three site visits under both normal and wetter than normal conditions. The wetland is dominated by red maple (<i>Acer rubrum</i> : FAC), elm (<i>Ulmus americana</i> : FACW), green ash (<i>Fraxinus pennsylvanica</i> : FACW), swamp white oak (<i>Quercus bicolor</i> : FACW), American hornbeam (<i>Carpinus caroliniana</i> : FAC), and cottonwood (<i>Populus deltoides</i> : FAC). Quaking aspen was also seen as an important sub-dominant in some areas. The herbaceous layer consists of crested sedge (<i>Carex cristatella</i> : FACW), fowl manna grass (<i>Glyceria striata</i> : OBL), flat-top white aster (<i>Doellingeria umbellata</i> : FACW), and fox sedge (<i>Carex vulpinoidea</i> : OBL). A fairly diverse plant community is supported within this wetland's pit-and-mound topography. Several large upland islands were delineated. Hydrophytic vegetation often crossed the boundary in this moist wooded environment. Water-stained leaves, water marks, moss trim lines, and sparsely vegetated concave surfaces were observed in several areas within the wetland. Drainage through this relatively flat area generally flows to the south within broad shallow depressional swales where under wetter conditions standing water and saturated conditions were observed. At the northern end, a constructed shallow swale brings drainage from the west along Allen Road where it collects in a large shallow depression. The southern end of the wooded area was being overtaken by oriental bittersweet (<i>Celastrus orbiculatus</i> : UPL), especially in more disturbed areas near the road intersection where some previous tree clearing has occurred. The wetland continues beyond the project AOI to the north. Wetland 10B is a roadside drainage along Allen Road that connects to the constructed swale within Wetland 10A.
Mapped NWI Type	PFO1A (10A)
Mapped Soil Type/ Hydric Rating	Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	Photos 46 - 60
Associated Data Pts***	DPs 11 -16
Map Number(s)*	1, 2, 4
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Ulmus americana</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Quercus bicolor</i> (FACW), <i>Carex cristatella</i> (FACW), <i>Glyceria striata</i> (OBL); <i>Acer rubrum</i> (FAC), <i>Tilia americana</i> (FACU), <i>Fraxinus pennsylvanica</i> (FACW), <i>Carpinus caroliniana</i> (FAC), <i>Ribes cynosbati</i> (FACU), <i>Doellingeria umbellata</i> (FACW), <i>Fragaria virginiana</i> (FACU); <i>Acer rubrum</i> (FAC), <i>Populus deltoides</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Glyceria striata</i> (OBL), <i>Carex vulpinoidea</i> (OBL)
Hydric Soil Indicators	Depleted Below Dark Surface (A11); Depleted Below Dark Surface (A11); Depleted Matrix (F3)
Hydrology Indicators	Water Marks (B1), Water-Stained Leaves (B9), Moss Trim Lines (B16), Geomorphic Position (D2), FAC-Neutral Test (D5); Water Marks (B1), Sparsely Vegetated Concave Surface (B8), Water-Stained Leaves (B9), Geomorphic Position (D2); Water Marks (B1), Sparsely
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators, a lack of hydric soils indicators at most sampling points, and slight topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 11	
Site Information	
Sampling Date	8/22/2022 (Normal Conditions)
Cowardin Class	PFO
Wetland Description	Wetland 11 is a depressional basin in the wooded area north of Smiths Creek Road and east of Allen Road. It is dominated by green ash saplings (<i>Fraxinus pennsylvanica</i> : FACW) along with elm (<i>Ulmus americana</i> : FACW), and swamp white oak (<i>Quercus bicolor</i> : FACW). The depression exhibited water-stained leaves, water marks, and a sparsely vegetated concave surface.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	Photos 61 - 62
Associated Data Pts***	No DPs
Map Number(s)*	2
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Fraxinus pennsylvanica</i> (FACW), <i>Ulmus americana</i> (FACW), <i>Quercus bicolor</i> (FACW)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and slight topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 12	
Site Information	
Sampling Date	8/22/2022 (Normal Conditions)
Cowardin Class	PFO
Wetland Description	Wetland 12 is a narrow depressional drainage dominated by elm (<i>Ulmus americana</i> : FACW) and fowl manna grass (<i>Glyceria striata</i> : OBL). Red maple (<i>Acer rubrum</i> : FAC), green ash (<i>Fraxinus pennsylvanica</i> : FACW), and swamp white oak (<i>Quercus bicolor</i> : FACW) were also present in the tree stratum as were sensitive fern (<i>Onoclea sensibilis</i> : FACW) and slender wood-reed (<i>Cinna latifolia</i> : FACW) in the herb stratum. Drainage appears to flow to the west-southwest towards Wetland 10. The wetland is located in the wooded area north of Smiths Creek Road and east of Allen Road.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	Photos 63 - 64
Associated Data Pts***	No DPs
Map Number(s)*	2
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Ulmus americana</i> (FACW), <i>Glyceria striata</i> (OBL)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and slight topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 13, 13(X)A -C	
Site Information	
Sampling Date	8/22/2022 (Normal Conditions)
Cowardin Class	PFO
Wetland Description	Wetland 13 is a narrow depressional drainage at the southeast corner of airport property in the wooded area east of Allen Road. It is dominated by green ash (<i>Fraxinus pennsylvanica</i> : FACW) and fowl manna grass (<i>Glyceria striata</i> : OBL), along with Virginia blueflag (<i>Iris virginica</i> : OBL), sensitive fern (<i>Onoclea sensibilis</i> : FACW), crested sedge (<i>Carex cristatella</i> : FACW), jumpseed (<i>Persicaria virginiana</i> : FAC), mad dog skullcap (<i>Scutellaria lateriflora</i> : OBL), and swamp agrimony (<i>Agrimonia parviflora</i> : FAC). The wetland continues beyond the project AOI. Wetland 13(X)A, B, and C is a portion of the wetland on private land estimated on the basis of contours, soils, NWI, and historic aerials.
Mapped NWI Type	PUBHx (13(X)C)
Mapped Soil Type/ Hydric Rating	Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	Photos 65 - 66
Associated Data Pts***	No DPs
Map Number(s)*	2, 4
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Fraxinus pennsylvanica</i> (FACW), <i>Glyceria striata</i> (OBL)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and slight topographic changes along the boundary. Estimated wetland areas were determined using contours, soils, NWI, and historic aerials.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 14	
Site Information	
Sampling Date	9/25/2023 (Normal Conditions)
Cowardin Class	PSS
Wetland Description	Wetland 14 is a scrub-shrub dominated wetland just south of Smiths Creek Road in a wooded area on airport property. It was previously delineated in 2012. This shallow depressional basin is dominated by gray dogwood (<i>Cornus racemosa</i> : FAC), red osier (<i>C. alba</i> : FACW), and silky dogwood (<i>C. amomum</i> : FAC). The basin uplands are dominated by red pine (<i>Pinus resinosa</i> : FACU). Water-stained leaves were seen in the central part of the wetland. Drainage appears to come from the infield to the west through a narrow ditch on the west side and finds an exit on the north side to a roadside ditch along Smiths Creek Road.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	No photos
Associated Data Pts***	No DPs
Map Number(s)*	4
Comments	Scrub-shrub
Wetland Criteria	
Dominant Vegetation	<i>Cornus racemosa</i> (FAC), <i>C. alba</i> (FACW), <i>C. amomum</i> (FAC)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, Water-stained leaves, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and slight topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 15 (A, B, C)	
Site Information	
Sampling Date	10/3/2022 (Drier than Normal)
Cowardin Class	PEM
Wetland Description	Wetland 15 is a roadside ditch on the east side of Allen Road, separated into three sections by driveway culvert crossings (A, B, and C). The relatively narrow steep-sided ditch segments contained standing water and were saturated at the surface. The emergent vegetation was dominated by reed canary grass (<i>Phalaris arundinacea</i> : FACW) and green ash saplings (<i>Fraxinus pennsylvanica</i> : FACW) along with common reed (<i>Phragmites australis</i> : FACW), white-panicked American aster (<i>Symphiotrichum lanceolatum</i> : FACW), New England aster (<i>Symphiotrichum novae-angliae</i> : FACW), and some iris (<i>Iris</i> sp.). Crayfish burrows were noted throughout the segments of this wetland. The ditch segments are periodically mowed.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	Photos 67 - 70
Associated Data Pts***	No DPs
Map Number(s)*	1, 3
Comments	Roadside ditch
Wetland Criteria	
Dominant Vegetation	<i>Phalaris arundinacea</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Phragmites australis</i> (FACW), <i>Symphiotrichum lanceolatum</i> (FACW), <i>Symphiotrichum novae-angliae</i> (FACW)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and distinct topographic changes along the ditch profile.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 16 (A, B, C)	
Site Information	
Sampling Date	10/3/2022 (Drier than Normal)
Cowardin Class	PEM
Wetland Description	Wetland 16 is a roadside ditch on the west side of Allen Road, separated into three sections by driveway culvert crossings (A, B, and C). The emergent vegetation was dominated by reed canary grass (<i>Phalaris arundinacea</i> : FACW), common reed (<i>Phragmites australis</i> : FACW), and white-panicked American aster (<i>Symphotrichum lanceolatum</i> : FACW). The ditch segments are periodically mowed.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	Photos 71 - 73
Associated Data Pts***	No DPs
Map Number(s)*	3
Comments	Roadside ditch
Wetland Criteria	
Dominant Vegetation	<i>Phalaris arundinacea</i> (FACW), <i>Phragmites australis</i> (FACW), <i>Symphotrichum lanceolatum</i> (FACW)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and distinct topographic changes along the ditch profile.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 17	
Site Information	
Sampling Date	6/7/2023 (Normal Conditions)
Cowardin Class	PEM
Wetland Description	Wetland 17 is a small shallow depression along the perimeter access road near the western fence line in the Rwy 4 End AOI. Standing water to approximately 12 - 15 inches deep was present and appears to be a closed depression. The wetland appears to retain water for a majority of the season since the perimeter access track was rerouted to higher ground on the south and east sides. The wetland was dominated by common reed (<i>Phragmites australis</i> : FACW). The wetland continues beyond the project AOI.
Mapped NWI Type	PEM5C
Mapped Soil Type/ Hydric Rating	Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric)
Photo Numbers**	Photos 74 - 75
Associated Data Pts***	No DPs
Map Number(s)*	5
Comments	Depression
Wetland Criteria	
Dominant Vegetation	<i>Phragmites australis</i> (FACW)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, Standing water, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 18 (A-S)	
Site Information	
Sampling Date	10/4/2022 (Drier than Normal), 6/8/2023 (Normal Conditions), 9/29/2023 (Wetter than Normal)
Cowardin Class	PUB, PEM, PFO, PSS
Wetland Description	Wetland 18 is large wetland complex located within the Runway 4 project AOI and consists of forested, scrub-shrub, emergent, and shallow marsh components. The perimeter fence splits the wetland into periodically maintained and more natural areas. On airport property, a large shallow marsh area, dominated by common reed (<i>Phragmites australis</i>: FACW), occupies the central core surrounded by a mix of shrub-dominated and forested areas. Mowed areas within the infield maintain the vegetation in a wet meadow plant community dominated by common reed, reed canary grass (<i>Phalaris arundinacea</i>: FACW), lady fern (<i>Athyrium angustum</i>: FAC), woolly sedge (<i>Carex pellita</i>: OBL), smooth saw-grass (<i>Cladium mariscoides</i>: OBL), rosette grass (<i>Dichanthelium clandestinum</i>: FACW). Shrubby areas surrounding the shallow marsh are dominated by alder (<i>Alnus incana</i>: FACW) and quaking aspen (<i>Populus tremuloides</i>: FAC) along with a variety of willows, dogwoods, and glossy buckthorn (<i>Frangula alnus</i>: FAC). Within the shallow marsh, standing water was encountered at all three field visits. A drainage ditch paralleling the perimeter fence on the west side carries flows from the northeast to southwest before angling to the southeast. This ditch was covered by a woody mix of alder and quaking aspen; standing water was present within the ditch at all three field visits. South of the perimeter fence, a complex of swales generally carry water to the south from areas within the infield. The vegetation is not maintained in this portion of the project AOI. The swales are covered by a mix of shrubs and smaller trees consisting of alder, meadow, pussy, and sandbar willow (<i>Salix petiolaris</i>: FACW, <i>S. discolor</i>: FACW, <i>S. interior</i>: FACW), gray dogwood (<i>Cornus racemosa</i>: FAC), buttonbush (<i>Cephalanthus occidentalis</i>: OBL), cottonwood (<i>Populus deltoides</i>: FAC), and green ash (<i>Fraxinus pennsylvanica</i>: FACW). Standing water was encountered within the swales at all three field visits. Several large patches of common reed were also present. At the southern end of the wetland, a large expanse of common reed transitions to a hardwood swamp which terminates just south of the pipeline corridor. The hardwood swamp had experienced tree clearing or perhaps a blow-out event as many downed trees were observed. Cottonwood, red maple (<i>Acer rubrum</i>: FAC), green ash, and American hornbeam (<i>Carpinus caroliniana</i>: FAC) were dominants in the tree and shrub strata. Standing water was present and high water tables were present at the time of the field visit.
Mapped NWI Type	PEM1C (18B); PEM5C (18D,C); PUBH and PEM5C (18E); PEM5C and PFO1C (18G); PFO1/EM1C (18J, K, L); PSS1/EM5C, R2UBFx, PEM5C (18I); PEM5C
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric); Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric); Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric); Rousseau fine sand, 6
Photo Numbers**	Photos 76 - 115, 117-120
Associated Data Pts***	DPs 23 - 30, 33 - 34, 47 - 50, 57 - 58
Map Number(s)*	6, 7, 9, 10
Comments	Shallow marsh, Emergent, Forested, and Scrub-shrub
Wetland Criteria	
Dominant Vegetation	<i>Phalaris arundinacea</i> (FACW), <i>Athyrium angustum</i> (FAC), <i>Dichanthelium clandestinum</i> (FACW), <i>Phragmites australis</i> (FACW); <i>Phalaris arundinacea</i> (FACW), <i>Phragmites australis</i> (FACW); <i>Cladium mariscoides</i> (OBL), <i>Phalaris arundinacea</i> (FACW); <i>Populus tremuloides</i> (FAC), <i>Alnus incana</i> (FACW), <i>Onoclea sensibilis</i> (FACW), <i>Solidago rugosa</i> (FAC), <i>Pteridium aquilinum</i> (FACU); <i>Cornus alba</i> (FACW), <i>Carex pellita</i> (OBL); <i>Populus deltoides</i> (FAC), <i>Fraxinus</i>

	pennsylvanica (FACW), Cornus racemosa (FAC), Cephalanthus occidentalis (OBL), Salix interior (FACW), Poa pratensis (FACU), Solidago gigantea (FACW), S. canadensis (FACU); Populus deltoides (FAC), Salix discolor (FACW), Phragmites australis (FACW), Poa palustris (FACW), Equisetum hyemale (FAC); Populus deltoides (FAC), Acer rubrum (FAC), Carpinus caroliniana (FAC), Fraxinus pennsylvanica (FACW), Calamagrostis canadensis (OBL), Symphyotrichum lanceolatum (FACW), Ranunculus hispidus (FAC)
Hydric Soil Indicators	Redox Dark Surface (F6); Depleted Below Dark Surface (A11), Sandy Redox (S5); Sandy Mucky Mineral (S1), Dark Surface (S7); Depleted Below Dark Surface (A11);
Hydrology Indicators	Geomorphic Position (D2), FAC-Neutral Test (D5); Crayfish Burrows (C8), Geomorphic Position (D2), FAC-Neutral Test (D5); Geomorphic Position (D2), FAC-Neutral Test (D5); Water Marks (B1), Geomorphic Position (D2), FAC-Neutral Test (D5); Crayfish Burrows (
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the boundary.

- * See Appendix F for Wetland Mapping
 ** See Appendix H for Photos
 *** See Appendix G for Wetland Data Sheets

Wetland 19	
Site Information	
Sampling Date	6/8/2023 (Normal Conditions)
Cowardin Class	PFO
Wetland Description	Located along the eastern project AOI boundary at the Runway 4 end, this hardwood swamp is dominated by swamp white oak (<i>Quercus bicolor</i> : FACW), green ash (<i>Fraxinus pennsylvanica</i> : FACW), cottonwood (<i>Populus deltoides</i> : FAC), and silver maple (<i>Acer saccharinum</i> : FACW). Standing water was present in the central depressional core of the wetland which continues beyond the project AOI. Water-stained leaves and crayfish burrows were observed throughout the wetland. The northern end of the wetland receives drainage from the airport side and drainage generally flows to the south to the Moak Drain.
Mapped NWI Type	PFO1A, R2UBFx
Mapped Soil Type/ Hydric Rating	Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric)
Photo Numbers**	Photos 121 - 123
Associated Data Pts***	No DPs
Map Number(s)*	7, 8
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Quercus bicolor</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Populus deltoides</i> (FAC), <i>Acer saccharinum</i> (FACW)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, Standing water, Water-stained leaves, Crayfish Burrows, FAC-Neutral Test,
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 20	
Site Information	
Sampling Date	6/8/2023 (Normal Conditions)
Cowardin Class	PFO
Wetland Description	Wetland 20 straddles the eastern project AOI boundary at the Runway 4 end and appears to be a closed depression. This hardwood swamp is dominated by silver maple (<i>Acer saccharinum</i> : FACW), green ash (<i>Fraxinus pennsylvanica</i> : FACW), cottonwood (<i>Populus deltoides</i> : FAC), and swamp white oak (<i>Quercus bicolor</i> : FACW) in the tree stratum and sensitive fern (<i>Onoclea sensibilis</i> : FACW) in the herb stratum. The central core of the wetland is a closed depressional basin which had standing water in it at the time of the field visit (Photo 127). Within this sparsely vegetated concave surface water-stained leaves were abundant as were water marks on the surrounding fringe of trees. The wetland continues beyond the project AOI.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric)
Photo Numbers**	Photos 124 - 127
Associated Data Pts***	DPs 37 - 38
Map Number(s)*	7, 8
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer saccharinum</i> (FACW), <i>Populus deltoides</i> (FAC), <i>Quercus bicolor</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Onoclea sensibilis</i> (FACW)
Hydric Soil Indicators	Depleted Below Dark Surface (A11)
Hydrology Indicators	Saturation (A3), Water Marks (B1), Dry-Season Water Table (C2), Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the depressional basin.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 21	
Site Information	
Sampling Date	10/6/2022 (Drier than Normal)
Cowardin Class	PFO
Wetland Description	Wetland 21 is located within the Runway 4 end of the AOI just west of the large airfield ditch. The wetland is situated within a shallow depression with a fringe of dominated by cottonwood (<i>Populus deltoides</i> : FAC) and green ash (<i>Fraxinus pennsylvanica</i> : FACW) in a relatively sparse canopy; quaking aspen (<i>Populus tremuloides</i> : FAC) was an important sub-dominant in the canopy. At wetland sampling point DP35, bladder sedge (<i>Carex intumescens</i> : FACW), calico aster (<i>Symphyotrichum lateriflorum</i> : FAC), and common reed (<i>Phragmites australis</i> : FACW) were dominant in the herb stratum. Within the central core, common reed dominates. The wetland continues to the south of the perimeter fence where cottonwood and glossy buckthorn (<i>Frangula alnus</i> : FAC) were dominant.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric)
Photo Numbers**	Photos 128 - 131
Associated Data Pts***	DPs 35 - 36
Map Number(s)*	7
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Populus deltoides</i> (FAC), <i>Fraxinus pennsylvanica</i> (FACW), <i>Carex intumescens</i> (FACW), <i>Symphyotrichum lateriflorum</i> (FAC), <i>Phragmites australis</i> (FACW)
Hydric Soil Indicators	Depleted Below Dark Surface (A11), Depleted Matrix (F3)
Hydrology Indicators	Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the depressional basin.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 22	
Site Information	
Sampling Date	6/8/2023 (Normal Conditions)
Cowardin Class	PFO
Wetland Description	Wetland 22 is located along the eastern project AOI boundary at the Runway 4 end. It is dominated by silver maple (<i>Acer saccharinum</i> : FACW) along with red maple (<i>A. rubrum</i> : FAC), elm (<i>Ulmus americana</i> : FAC), swamp white oak (<i>Quercus bicolor</i> : FACW), and green ash (<i>Fraxinus pennsylvanica</i> : FACW) in the tree stratum. Ferns present in the understory included sensitive fern (<i>Onoclea sensibilis</i> : FACW) and royal fern (<i>Osmunda spectabilis</i> : OBL) and slender wood-reed (<i>Cinna latifolia</i> : FACW) and bladder sedge (<i>Carex intumescens</i> : FACW) were also observed. Drainage appears to flow to the southwest towards the large ditch which also drains the central airfield area. The sparsely vegetated concave depression exhibited numerous crayfish burrows as well. The wetland extends beyond the project AOI to the east.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric)
Photo Numbers**	Photos 132 - 135
Associated Data Pts***	No DPs
Map Number(s)*	7
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer saccharinum</i> (FACW), <i>A. rubrum</i> (FAC), <i>Ulmus americana</i> (FAC), <i>Quercus bicolor</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, Standing water, Water-stained leaves, Water marks, FAC-Neutral Test, Crayfish burrows, Sparsely vegetated concave surface
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 23 (A, B)	
Site Information	
Sampling Date	10/7/2022 (Drier than Normal)
Cowardin Class	PEM/PFO
Wetland Description	Wetland 23 is located just east of the main ditch draining the southern end of the airfield. Most of the wetland is regularly mowed and is covered by a wet meadow plant community consisting of common reed (<i>Phragmites australis</i> : FACW), woolly sedge (<i>Carex pellita</i> : OBL), Virginia blueflag (<i>Iris virginica</i> : OBL), smartweed (<i>Persicaria</i> sp.), and New England aster (<i>Symphotrichum novae-angliae</i> : FACW). Crayfish burrows were present and saturated areas are visible on recent aerial photography. This part of the wet meadow wetland continues to the north inside the fence. The wetland extends to the east outside of the perimeter fence and becomes dominated by a forested community consisting of red maple (<i>Acer rubrum</i> : FAC), red oak (<i>Quercus rubra</i> : FACU), and green ash (<i>Fraxinus pennsylvanica</i> : FACW). Water marks and water-stained leaves were observed on the sparsely vegetated concave surface at wetland sampling point DP31 where no herbaceous layer was present. Along the fence line, several areas of inundation/standing water were noted as well as crayfish burrows.
Mapped NWI Type	PEM5C (23A)
Mapped Soil Type/ Hydric Rating	Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric)
Photo Numbers**	Photos 136 - 143
Associated Data Pts***	DPS 31 - 32
Map Number(s)*	7
Comments	Wet meadow/hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Quercus rubra</i> (FACU), <i>Fraxinus pennsylvanica</i> (FACW)
Hydric Soil Indicators	Depleted Below Dark Surface (A11), Sandy Redox (S5)
Hydrology Indicators	Water Marks (B1), Sparsely Vegetated Concave Surface (B8), Water-Stained Leaves (B9), Geomorphic Position (D2)
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 24(X)	
Site Information	
Sampling Date	N/A
Cowardin Class	RUBx
Wetland Description	Wetland 24X is a constructed steep-sided ditch located outside the airfield fence and is estimated on the basis of contours, soils, National Wetland Inventory mapping (R2UBFx), and historic aerals. This is part of the main drainage feature in the southern portion of the AOI. It receives flows from the north from areas on the airfield and ultimately flows to the Moak Drain through private property.
Mapped NWI Type	R2UBFx
Mapped Soil Type/ Hydric Rating	Allendale-Lenawee-Toledo complex, 0 to 3 percent slopes (AtA) (Partially Hydric)
Photo Numbers**	No Photos
Associated Data Pts***	No DPs
Map Number(s)*	7
Comments	Ditch (Estimated)
Wetland Criteria	
Dominant Vegetation	
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic position
Boundary Determination	
Description	The boundary is estimated on the basis of contours, soils, National Wetland Inventory mapping (R2UBFx), and historic aerals.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 25, 25F(X) (A - F)	
Site Information	
Sampling Date	10/2/2023 (Wetter than Normal)
Cowardin Class	PEM/PFO/RUBx
Wetland Description	Wetland 25 is located in the southern part of the Rwy 4 End AOI and consists of two forested areas (PFO) that drain to the south, each containing drainage ditches that connect to the Moak Drain (R2UBFx). A maintained pipeline corridor approximately 45 feet wide divides Wetland 25 in two segments - Wetlands 25A and 25B to the north of the corridor and Wetland 25D to the south of the corridor. The corridor segment (25C) is covered by emergent vegetation (PEM). The pipeline corridor both crosses the Moak Drain and bisects the larger part of Wetland 25. This corridor segment is covered by wet meadow vegetation mown recently. Standing water was present in the lowest section of the pipeline corridor (Photo 147). The Moak Drain (R2UBFx) is a constructed narrow steep-sided ditch approximately 8 – 10 feet deep which flows to the south under Gratiot Avenue. Standing water was present in the ditch at the time of the field visit (25F). Narrow interior drainage ditches flow through both forested sections of Wetland 25, connecting to Wetlands 18I to the north and Wetland 27 to the west via culverts. The forested northern arm of Wetland 25 is dominated by a woody mix consisting of American hornbeam (<i>Carpinus caroliniana</i>: FAC), red maple (<i>Acer rubrum</i>: FAC), red oak (<i>Quercus rubra</i>: FACU), and witch-hazel (<i>Hamamelis virginiana</i>: FACU) with a sparse herbaceous stratum dominated by cinnamon fern (<i>Osmundastrum cinnamomeum</i>: FACW), green ash saplings (<i>Fraxinus pennsylvanica</i>: FACW), and marsh fern (<i>Thelypteris palustris</i>: FACW) as seen at wetland sampling point DP59. Alder (<i>Alnus incana</i>: FACW) was also noted along more open areas adjacent to the interior drainage ditches. The western arm of Wetland 25(E), drained by a shallow ditch/swale to the east, was more open with red maple, red oak, elm (<i>Ulmus americana</i>: FACW), and American hornbeam in the tree stratum. This section of the wetland could be a former house site as vinca and day lilies were observed. The internal shallow ditch/swale flows to the east and connects to the Moak Drain. Outside of airport property, the Moak drain (Wetland 25F(X)) was estimated. This estimated portion of the ditch as made on the basis of contours and historic aerials.
Mapped NWI Type	PEM5C (25A); R2UBFx (25A, C, D, F, F(X))
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric); Latty complex, 0 to 3 percent slopes (LhA) (Partially Hydric); Borrow pits (Bp) (Non-hydric)
Photo Numbers**	Photos 144 - 153
Associated Data Pts***	DPs 59 - 60
Map Number(s)*	10
Comments	Hardwood swamp and drain
Wetland Criteria	
Dominant Vegetation	<i>Carpinus caroliniana</i> (FAC), <i>Acer rubrum</i> (FAC), <i>Quercus rubra</i> (FACU), <i>Hamamelis virginiana</i> (FACU), <i>Osmundastrum cinnamomeum</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW), <i>Thelypteris palustris</i> (FACW)
Hydric Soil Indicators	Depleted Below Dark Surface (A11), Sandy Mucky Mineral (S1), Sandy Redox (S5), Dark Surface (S7)
Hydrology Indicators	High Water Table (A2), Saturation (A3), Geomorphic Position (D2), FAC-Neutral Test (D5)

Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 26	
Site Information	
Sampling Date	10/3/2023 (Wetter than Normal)
Cowardin Class	PFO
Wetland Description	Wetland 26 is a shallow sparsely vegetated concave surface covered by red maple (Acer rubrum: FAC), green ash saplings (Fraxinus pennsylvanica: FACW), and elm (Ulmus americana: FACW).
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Latty complex, 0 to 3 percent slopes (LhA) (Partially Hydric)
Photo Numbers**	Photo 154
Associated Data Pts***	No DPs
Map Number(s)*	10
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	Acer rubrum (FAC), Fraxinus pennsylvanica (FACW), Ulmus americana (FACW)
Hydric Soil Indicators	Observed Depleted Below Dark Surface and Sandy Mucky Mineral
Hydrology Indicators	Observed Geomorphic Position, Sparsely Vegetated Concave Surface
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 27	
Site Information	
Sampling Date	10/3/2023 (Wetter than Normal)
Cowardin Class	PFO
Wetland Description	Wetland 27 is a depressional area that receives drainage from residences beyond airport property via two tile drains exiting at the base of a slope. An internal ditch carries flows to the east, under a two-track road via a culvert and connects to Wetland 25E where drainage eventually flows to the Moak Drain. Additional runoff flows from the south join the internal drainage ditch. The wetland is dominated by green ash (<i>Fraxinus pennsylvanica</i> : FACW), red maple (<i>Acer rubrum</i> : FAC), royal fern (<i>Osmunda spectabilis</i> : OBL), and fringed sedge (<i>Carex crinita</i> : OBL). Also present were cinnamon fern (<i>Osmundastrum cinnamomeum</i> : FACW) and sensitive fern (<i>Onoclea sensibilis</i> : FACW).
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric); Borrow pits (Bp) (Non-hydric)
Photo Numbers**	Photos 155 - 158
Associated Data Pts***	No DPs
Map Number(s)*	10
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Fraxinus pennsylvanica</i> (FACW), <i>Acer rubrum</i> (FAC), <i>Osmunda spectabilis</i> (OBL), <i>Carex crinita</i> (OBL)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic position, Standing water
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 28	
Site Information	
Sampling Date	10/3/2023 (Wetter than Normal)
Cowardin Class	PFO
Wetland Description	Wetland 28 is located just south of the pipeline corridor and is a small shallow closed depressional hardwood swamp. Water-stained leaves were observed in the depression dominated by royal fern (<i>Osmunda spectabilis</i> : OBL) in the herb layer and red maple (<i>Acer rubrum</i> : FAC) and elm (<i>Ulmus americana</i> : FACW) in the tree stratum.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric)
Photo Numbers**	Photos 159
Associated Data Pts***	No DPs
Map Number(s)*	10
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Ulmus americana</i> (FACW), <i>Osmunda spectabilis</i> (OBL)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, Water-stained leaves, FAC-Neutral Test
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 29	
Site Information	
Sampling Date	10/2/2023 (Wetter than Normal)
Cowardin Class	PFO
Wetland Description	Wetland 29 is located just west of Wetland 30A, separated by a two-track road, and is a small shallow closed depressional hardwood swamp. Water-stained leaves were observed in the depression dominated by red maple (<i>Acer rubrum</i> : FAC), green ash (<i>Fraxinus pennsylvanica</i> : FACW), and swamp white oak (<i>Quercus bicolor</i> : FACW) in the tree stratum. A small pocket of standing water was present as well. Little herbaceous cover was present in the understory .
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric)
Photo Numbers**	Photos 160 - 161
Associated Data Pts***	No DPs
Map Number(s)*	9
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Quercus bicolor</i> (FACW), <i>Fraxinus pennsylvanica</i> (FACW)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Positions, Water-stained leaves, Standing water
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 30, 30(X) (A - D)	
Site Information	
Sampling Date	6/14/2023 (Normal Conditions), 9/26/2023 (Wetter than Normal)
Cowardin Class	PFO/PSS/PEM
Wetland Description	Wetland 30A is a large depressional hardwood swamp located north of the pipeline corridor that extends off airport property. The central core of Wetland 30A contains a scrub-shrub component (30C). More open areas support scrub-shrub wetlands (30D). Red maple (<i>Acer rubrum</i>: FAC) and American hornbeam (<i>Carpinus caroliniana</i>: FAC) are dominants in the tree stratum along with swamp white oak (<i>Quercus bicolor</i>: FACW) and red oak (<i>Quercus rubra</i>: FACU) as sub-dominants. The generally sparse herbaceous stratum was dominated by cinnamon fern (<i>Osmundastrum cinnamomeum</i>: FACW) and Virginia blueflag (<i>Iris virginica</i>: OBL) although fowl manna grass (<i>Glyceria striata</i>: OBL), ferns, and sedges were often seen under less closed canopy. The scrub-shrub plant community was dominated by alder (<i>Alnus incana</i>: FACW), red osier (<i>Cornus alba</i>: FACW), gray dogwood (<i>Cornus racemosa</i>: FAC), and willows (<i>Salix</i> sp.). Water-stained leaves were observed throughout the forested sections of the wetland and saturation was seen on both field visits. High water tables were also noted at the second field visit under wetter than normal conditions. The eastern side of the wetland receives drainage from the north via a culvert under a two-track and is connected to Wetland 18I. The northern extent of Wetland 30B continues beyond the project AOI. Wetland 30X, divided into five sections by wetland type, is the portion on private land estimated on the basis of contours, soils, NWI, field observations from adjacent property, and historic aerials. A large emergent area dominated by common reed (<i>Phragmites australis</i>: FACW) is outside of airport property (30(X)B) and the plant community transitions to hardwood swamp to the west (30(X)A). The pipeline corridor splits this large swamp in two with an emergent component (30(X)D) along the corridor and a smaller forested component (30(X)E) to the south of the pipeline.
Mapped NWI Type	PSS1/EM5C (30A, C); PFO1C and PSS1C (30(X)A); PEM5C (30(X)B, C); PFO1C (30B, 30(X)D); PSS1C (30(X)E)
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric); Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric)
Photo Numbers**	Photos 162 - 177
Associated Data Pts***	DPs 39 - 40, 43 - 44, 51 - 52
Map Number(s)*	6, 9
Comments	Hardwood swamp, scrub-shrub; emergent (estimated)
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Populus deltoides</i> (FAC), <i>Iris virginica</i> (OBL); <i>Acer rubrum</i> (FAC), <i>Carpinus caroliniana</i> (FAC), <i>Hamamelis virginiana</i> (FACU), <i>Osmundastrum cinnamomeum</i> (FACW); <i>Populus tremuloides</i> (FAC), <i>Salix nigra</i> (OBL), <i>Poa pratensis</i> (FACU), <i>Doellingeria umbellata</i> (FACW), <i>Vitis riparia</i> (FAC)
Hydric Soil Indicators	Sandy Mucky Mineral (S1), Dark Surface (S7); Sandy Mucky Mineral (S1), Dark Surface (S7); Depleted Below Dark Surface (A11), Depleted Matrix (F3)
Hydrology Indicators	Saturation (A3), Water-Stained Leaves (B9), Dry-Season Water Table (C2), Geomorphic Position (D2), FAC-Neutral Test (D5); High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9), Geomorphic Position (D2), FAC-Neutral Test (D5); High Water Table

Boundary Determination	
Description	Where delineated, the boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the boundary. Where estimated, the boundary is based on contours, soils, field observations from adjacent property, and historic aerial photos.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 31	
Site Information	
Sampling Date	10/1/2023 (Wetter than Normal)
Cowardin Class	PFO
Wetland Description	Wetland 31 is a depressional hardwood swamp located at the southern extent of the Rwy 4 End AOI just north of Gratiot Avenue. In the lowest section of the wetland, standing water was present to about 2 inches deep, and in other areas the concave surface was sparsely vegetated. At wetland sampling point DP55, red maple (<i>Acer rubrum</i> : FAC) dominated the tree stratum while green ash (<i>Fraxinus pennsylvanica</i> : FACW) and cherry (<i>Prunus serotina</i> : FACU) dominated the shrub stratum. The relatively sparse herbaceous layer was dominated by wrinkle-leaf goldenrod (<i>Solidago rugosa</i> : FAC) and flat-top American aster (<i>Doellingeria umbellata</i> : FACW). Royal fern (<i>Osmunda spectabilis</i> : OBL) as also present in the wetland. A high water table and saturation were observed at the sampling point. An excavated ditch (Wetland 37(X)) just to the west of the wetland likely impacts internal hydrology in this wetland. The western wetland boundary along the ditch is formed by the spoil pile left by the construction of the ditch. The wetland likely outlets at the south end to a roadside ditch.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric)
Photo Numbers**	Photos 178 - 181
Associated Data Pts***	DPs 55 - 56
Map Number(s)*	9
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Prunus serotina</i> (FACU), <i>Fraxinus pennsylvanica</i> (FACW), <i>Solidago rugosa</i> (FAC), <i>Doellingeria umbellata</i> (FACW)
Hydric Soil Indicators	Depleted Below Dark Surface (A11), Sandy Mucky Mineral (S1), Dark Surface (S7)
Hydrology Indicators	High Water Table (A2), Saturation (A3), Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 32 (A, B)	
Site Information	
Sampling Date	9/26/2023 (Wetter than Normal)
Cowardin Class	PFO/PSS
Wetland Description	Wetland 32 consists of forested hardwood swamp and scrub-shrub sections. Within the hardwood swamp area on the western edge of the Rwy 4 End AOI (Wetland 32A), a large inundated area with standing water to about 12 inches covered most of the wooded area. This part of the wetland continues beyond the project AOI to the west. Red maple (<i>Acer rubrum</i> : FAC) and a variety of ferns were present. East of the tree line, Wetland 32 transitions to a shrub community (32B) dominated by young cottonwoods (<i>Populus deltoides</i> : FAC) and black willows (<i>Salix nigra</i> : FACW). The herbaceous stratum was dominated by field horsetail (<i>Equisetum pratense</i> : FACW), sensitive fern (<i>Onoclea sensibilis</i> : FACW), common reed (<i>Phragmites australis</i> : FACW), flat-top American aster (<i>Doellingeria umbellata</i> : FACW), and bracken fern (<i>Pteridium aquilinum</i> : FACU). Drainage appears to flow to the east; this wetland connects to Wetland 18I via a culvert under a two-track. Several large stands of common reed (<i>Phragmites australis</i> : FACW) were found within this portion of the wetland. Red osier (<i>Cornus alba</i> : FACW) and meadow willow (<i>Salix petiolaris</i> : FACW) were also common along the drainageways. The shrub community is confined to narrow drainages between higher parallel sand ridges.
Mapped NWI Type	PFO1C (32A), PEM5C (32B)
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric); Wainola-Deford fine sands, 0 to 2 percent slopes (WdA) (Partially Hydric)
Photo Numbers**	Photos 182 - 185
Associated Data Pts***	DPs 45 - 46
Map Number(s)*	6
Comments	Hardwood swamp, scrub-shrub
Wetland Criteria	
Dominant Vegetation	<i>Populus deltoides</i> (FAC), <i>Salix nigra</i> (OBL), <i>S. discolor</i> (FACW), <i>Equisetum pratense</i> (FACW), <i>Onoclea sensibilis</i> (FACW), <i>Phragmites australis</i> (FACW), <i>Doellingeria umbellata</i> (FACW), <i>Pteridium aquilinum</i> (FACU)
Hydric Soil Indicators	Sandy Redox (S5), High Chroma Sands (S11), Depleted Below Dark Surface (A11)
Hydrology Indicators	High Water Table (A2), Saturation (A3), Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 33	
Site Information	
Sampling Date	6/13/2023 (Normal Conditions), 9/26/2023 (Wetter than Normal)
Cowardin Class	PFO
Wetland Description	Wetland 33 is a depressionnal hardwood swamp along the western boundary of the Rwy 4 End AOI. It is dominated by red maple (<i>Acer rubrum</i> : FAC) in the tree stratum and crested sedge (<i>Carex crinita</i> : OBL), hop sedge (<i>C. lupulina</i> : OBL), and green ash saplings (<i>Fraxinus pennsylvanica</i> : FACW) in a sparse herbaceous layer. At the wetland sampling point DP41, saturation was encountered with a dry-season water table. However, the lower portions of the wetland contained standing water at the second field visit in September. Water marks were observed on many trees around inundated areas. The north portion of the wetland is connected to a larger area to the south via a narrow swale where another large area of standing water was observed. The wetland continues beyond the project AOI.
Mapped NWI Type	PFO1C
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric)
Photo Numbers**	Photos 186 - 190
Associated Data Pts***	DPs 41 - 42
Map Number(s)*	6
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Carex crinita</i> (OBL), <i>C. lupulina</i> (OBL), <i>Fraxinus pennsylvanica</i> (FACW)
Hydric Soil Indicators	Sandy Mucky Mineral (S1), Dark Surface (S7)
Hydrology Indicators	Saturation (A3), Water-Stained Leaves (B9), Dry-Season Water Table (C2), Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 34(X)	
Site Information	
Sampling Date	N/A
Cowardin Class	PUBHx
Wetland Description	Field observations indicate this wetland was filled with standing water. Wetland 34(X) is located on private land and is estimated on the basis of contours, soils, National Wetland Inventory mapping (PUBHx), and historic aerials.
Mapped NWI Type	PUBHx
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric)
Photo Numbers**	No photos
Associated Data Pts***	No DPs
Map Number(s)*	9
Comments	Excavated pond
Wetland Criteria	
Dominant Vegetation	
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic position
Boundary Determination	
Description	The boundary is estimated on the basis of contours, soils, National Wetland Inventory mapping (PUBHx), and historic aerials.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 35, 35(X) (A - D)	
Site Information	
Sampling Date	10/2/2023 (Wetter than Normal)
Cowardin Class	PFO/PEM
Wetland Description	Wetland 35 is a large expanse of hardwood swamp (35A, 35B) dominated by red maple (<i>Acer rubrum</i> : FAC) with cottonwood (<i>Populus deltoides</i> : FAC) and american hornbeam (<i>Carpinus caroliniana</i> : FAC) as sub-dominants. Fowl manna grass (<i>Glyceria striata</i> : OBL), sensitive fern (<i>Onoclea sensibilis</i> : FACW), and bladder sedge (<i>Carex intumescens</i> : FACW) dominated the herb stratum. Wetland 35 spans the pipeline corridor where vegetation is maintained on a periodic basis. These two areas within the pipeline corridor (35C, 35D) are dominated by common reed (<i>Phragmites australis</i> : FACW) and sedges (<i>Carex</i> sp.). Wetland 35 continues north of the pipeline corridor and then off airport property. Under wetter than normal conditions, pockets of standing water were seen throughout the wetland and in the pipeline corridor. However, the deep excavated ditch (Wetland 37(X)) to the west of the wetland likely affects the internal hydrology of the wetland. The spoils pile from the construction at lines formed the western wetland boundary. Wetland 35 continues to the east onto private property. Wetland 35(X), divided into three sections (A, B, and C) by wetland type, is the portion on private land estimated on the basis of contours, soils, field observations, and historic aerals.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric); Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric)
Photo Numbers**	Photos 191 - 198
Associated Data Pts***	DPs 53 - 54
Map Number(s)*	9
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Prunus serotina</i> (FACU), <i>Hamamelis virginiana</i> (FACU), <i>Glyceria striata</i> (OBL), <i>Onoclea sensibilis</i> (FACW), <i>Carex intumescens</i> (FACW)
Hydric Soil Indicators	Depleted Below Dark Surface (A11), Sandy Mucky Mineral (S1), Dark Surface (S7)
Hydrology Indicators	High Water Table (A2), Saturation (A3), Water-Stained Leaves (B9), Geomorphic Position (D2), FAC-Neutral Test (D5)
Boundary Determination	
Description	Where delineated, the boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, an absence of hydric soil indicators, and distinct topographic changes along the boundary. Where estimated, the boundary is based on contours, soils, field observations from adjacent property, and historic aerial photos.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 36, 36(X) (A, B)	
Site Information	
Sampling Date	10/1/2023 (Wetter than Normal)
Cowardin Class	PFO
Wetland Description	Wetland 36 consists of two lobes (36A and 36B) that connect outside western airport property line. The wetland is a hardwood swamp dominated by red maple (<i>Acer rubrum</i> : FAC), American hornbeam (<i>Carpinus caroliniana</i> : FAC), and royal fern (<i>Osmunda spectabilis</i> : OBL). A small excavated pond sits just outside of airport property and drains the northern lobe of the wetland. Wetland 36(X) is the portion of the wetland on private land estimated on the basis of contours, soils, and historic aerals.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (A1A) (Partially Hydric); Rousseau fine sand, 0 to 6 percent slopes (RuB) (Predominantly Non-hydric)
Photo Numbers**	Photos 199 - 200
Associated Data Pts***	No DPs
Map Number(s)*	9
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Caprinus caroliniana</i> (FAC), <i>Osmunda spectabilis</i> (OBL)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, Water-stained leaves, Sparsely vegetated concave surface, Standing water
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, and distinct topographic changes along the boundary. Where estimated, the boundary is based on contours, soils, field observations from adjacent property, and historic aerial photos.

* See Appendix F for Wetland Mapping
 ** See Appendix H for Photos
 *** See Appendix G for Wetland Data Sheets

Wetland 37, 37(X)	
Site Information	
Sampling Date	10/3/2023 (Wetter than Normal)
Cowardin Class	RUBX
Wetland Description	Wetland 37, delineated on airport property, is relatively shallow drainage swale that carries flows from the north. A shallow swale brings flows from the west off airport property as well. The portion of the ditch outside of airport property is a deep, 10 - 15 feet wide excavated ditch flowing from north to south. The ditch was filled with standing water on the north end (Wetland 37(X)). Much junk and debris was also present in the ditch. The spoils pile from the ditch construction forms a berm along the east side of the ditch. This ditch also affects the internal drainage of Wetlands 35B and 31. Wetland 37(X) is the portion of wetland on private land estimated on the basis of contours, soils, field observations, and historic aerals.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Latty complex, 0 to 3 percent slopes (AIA) (Partially Hydric)
Photo Numbers**	Photos 201 - 202
Associated Data Pts***	No DPs
Map Number(s)*	9
Comments	Ditch
Wetland Criteria	
Dominant Vegetation	Acer rubrum (FAC), Fraxinus pennsylvanica (FACW), Solidago rugosa (FAC), Doellingeria umbellata (FACW)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, Water-stained leaves, Standing water
Boundary Determination	
Description	Where delineated, the boundary was determined by a lack of wetland hydrology indicators and distinct topographic changes along the ditch profile. Where estimated, the boundary is based on contours, soils, field observations from adjacent property, and historic aerial photos.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Wetland 38	
Site Information	
Sampling Date	6/15/2023 (Normal Conditions)
Cowardin Class	PFO
Wetland Description	Located at the northern extent of the Rwy 22 End AOI, this hardwood swamp is a shallow depression dominated by red maple (<i>Acer rubrum</i> : FAC), fowl manna grass (<i>Glyceria striata</i> : OBL) and star sedge (<i>Carex radiata</i> : FAC). Multiple dead ashes were also noted.
Mapped NWI Type	N/A
Mapped Soil Type/ Hydric Rating	Allendale-Hoytville complex, 0 to 6 percent slopes (AhB) (Partially Hydric)
Photo Numbers**	No Photos
Associated Data Pts***	No DPs
Map Number(s)*	2
Comments	Hardwood swamp
Wetland Criteria	
Dominant Vegetation	<i>Acer rubrum</i> (FAC), <i>Glyceria striata</i> (OBL), <i>Carex radiata</i> (FAC)
Hydric Soil Indicators	N/A
Hydrology Indicators	Observed Geomorphic Position, Water-stained leaves
Boundary Determination	
Description	The boundary was determined by a transition to upland vegetation, a lack of wetland hydrology indicators, and distinct topographic changes along the boundary.

* See Appendix F for Wetland Mapping

** See Appendix H for Photos

*** See Appendix G for Wetland Data Sheets

Appendix J Delineator Qualifications

BRAUNA HARTZELL, GISP, PWS
GEOGRAPHIC INFORMATION SYSTEM (GIS) ANALYST/
WETLANDS SCIENTIST
EXPERIENCE (GIS)

Brauna Hartzell has more than 20 years of experience applying GIS software and database design techniques to support wetlands and water resources, historic preservation, community planning, transportation, aviation and military planning, and municipal infrastructure and storm water management. She has worked extensively with GIS and mapping software including ArcGIS desktop and ARC/INFO workstation and has specialized experience with 3D Analyst, Network Analyst and Spatial Analyst. She also collects environmental field data using hand-held GPS units and post-processes information for inclusion in databases and use in spatial analyses. Brauna collaborates with personnel from multiple disciplines to solve complex spatial problems through scripting and spatial analysis to deliver results and data for project-specific needs. She utilizes geoprocessing models, Python, and VBA to meet analytical needs of projects.

Brauna is experienced with GIS-related data submittal requirements associated with the Federal Energy Regulatory Commission (FERC) and the Federal Aviation Administration (FAA) data standardization initiatives. She has extensive experience developing Geodatabases with the Spatial Data Standards for Facility, Infrastructure, and Environment (SDSFIE) standard and creating Federal Geographic Data Committee (FGDC)-compliant metadata.

Brauna has specialized experience with using 3D data formats for spatial analysis, contour generation and manipulation, and geospatial modeling. She is adept in the use of LiDAR-derived data and DTMs in support of hydrology and hydraulic analyses. Additionally, she has extensive experience with SSURGO databases and the National Hydrography Dataset.

EXPERIENCE (WETLAND/ENVIRONMENTAL)

Brauna Hartzell has more than twenty years of experience in wetland delineation, wetland permitting, and restoration projects. She performs wetland and field delineations conforming to current United States Army Corps of Engineers (USACE) guidance including the Midwest and Northcentral and Northeast Regional Supplements and State standards, designs custom field data collection applications, collects field data using hand-held Global Positioning Systems (GPS) data collectors and tablets, and prepares National Environmental Policy Act (NEPA) documentation. Brauna has successfully guided numerous projects through the Section 404 permitting process.

Brauna has performed numerous wetland delineations in Wisconsin, Minnesota, and Michigan since 2002. Work included conducting the delineation, documenting field investigations and site conditions, creating wetland boundary maps, and report writing. She conducts wetland mitigation site monitoring according to established site-specific assessment protocols, performs vegetation surveys, and analyzes and presents field collected data in graphical and tabular form. She also assists in mitigation site design and construction specifications development.



Areas of Expertise

- Geographic Information Systems (GIS)
- Remote-sensing image processing
- Digital mapping
- Database design
- Wetland delineation and permitting

Education

- MS, Environmental Monitoring, 1994, University of Wisconsin, Madison
- BS, Biological Science, 1982, Florida State University, Tallahassee, Florida

Certificates

- Ecological Restoration Certificate (5-3.0 CEU classes), Restoring Minnesota Ecological Restoration Training Cooperative program, 2020

Registration/Certification

- Certified GIS Professional (GISP), GIS Certification Institute
- Professional Wetland Scientist (PWS), Society of Wetland Scientists Professional Certification Program (SWSPCP)

Training and Seminars

- Critical Methods in Delineation, University of Wisconsin-LaCrosse, 2007, 2008, 2009, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024
- Conservation Biology, University of Wisconsin-Madison, Spring 2021
- Grasses, Sedges, and Rushes Workshop, University of Wisconsin-LaCrosse, 2017
- Wildlife Inventory and Monitoring Workshop, University of Wisconsin – Milwaukee, 2015
- Advanced Wetland Delineation Workshop, University of Wisconsin – LaCrosse, 2007
- Basic Hydric Soil Identification Workshop, University of Wisconsin – LaCrosse, 2005
- Wetlands Ecology, University of Wisconsin – Madison, Spring 2003
- Vascular Flora of Wisconsin, University of Wisconsin – Madison, Spring 2002

BRAUNA HARTZELL, GISP, PWS (CONTINUED)

RELATED PROJECTS (WETLANDS)

Wetland Delineation, Oakland Southwest Airport, Oakland County, 2023

Michigan Bureau of Aeronautics

New Hudson, Michigan

Lead Wetland Delineator. Brauna served as lead wetland delineator in support of an environmental assessment of proposed obstructions clearing to facilitate clear approach and departure paths, and to enhance safety at the airport. Brauna completed a wetland delineation and biological resources survey in support of environmental documentation for the proposed project. The area of interest is approximately 45 acres and resulted in the delineation of four wetlands on Airport property. Additional areas outside of Airport property were examined where access permission was received. One additional wetland and four estimated wetlands were mapped. Wetland types encountered include fresh wet meadow, shrub-scrub, and forested wetland. Brauna also completed NEPA documentation for wetlands.

Wetland Delineation, Airlake Airport Dakota County, 2022

Metropolitan Airports Commission

Lakeville, Minnesota

Lead Wetland Delineator. Brauna served as lead wetland delineator in support of an environmental assessment for proposed airfield improvements at the Airport that include modifying the location of the runway ends to increase the existing declared distances, reconstructing the existing runway, and extending the runway and associated taxiways. The area of interest is approximately 164 acres in size and resulted in the delineation of twelve wetlands. An ordinary high water mark determination was completed for a previously re-aligned segment of tributary on the airfield. Wetland types encountered include emergent seasonally-flooded basins, fresh (wet) meadows, and shallow marsh. An off-site hydrology assessment using historic aerial photographs supported field assessment of farm fields within the study area. Brauna also completed NEPA documentation for wetlands.

Wetland Delineation, Chippewa Valley Regional Airport, 2022

Wisconsin Bureau of Aeronautics

Eau Claire, Wisconsin

Lead Wetland Delineator. Brauna served as lead wetland delineator in support of environmental documentation for a proposed wildlife perimeter fence replacement/extension and selective clearing project on Airport owned lands in the city of Eau Claire. The existing perimeter fence will be replaced with USDA-APHIS-WS/FAA recommended 10-foot chain link wildlife exclusion fencing. The Airport will also clear several areas of brush and stumps to establish turf vegetation to more easily maintain the area and to enhance wildlife control. The proposed fence corridor was surveyed for wetlands and streams and areas proposed for clearing were examined. Twelve wetlands were identified within the project AOI. Wetland types encountered include forested, fresh wet meadow and shrub-scrub wetlands.

Conservation Easement Baseline Biological Survey, 2021

Houghton County Airport

Calumet, Michigan

Lead Environmental Scientist. To mitigate for wetland impacts relating to a clearing project at the Airport, the Houghton County Memorial Airport will create a conservation easement for a 40-acre parcel owned by Houghton County. Brauna was lead environmental scientist responsible for overseeing and assisting with field work by a botanist and report and map creation. A Floristic Quality Assessment was performed by conducting a meander survey and collecting species cover data at eight permanent quadrat locations. The baseline report detailed field work to assess and document the 40-acre parcel as a high-quality Wooded Dune and Swale complex for creation of a conservation easement. Brauna coordinated with

- Grasses: Identification and Ecology Workshop, University of Wisconsin – Milwaukee workshop, 2002
- Basic Wetland Delineation Workshop, University of Wisconsin–LaCrosse, 2002

Training and Seminars

- GPS Field Collection Techniques Training Workshop for Trimble GeoXH, Seiler Instruments

Past Employment

- Information Management Systems, Inc.
- Adult Communities Total Services, Inc.
- Archeological Assessments, Inc.
- University of Wisconsin – Madison

No. of Years With Mead & Hunt

- Hired 08/28/1992

No. of Years With Other Firms

- Four

BRAUNA HARTZELL, GISP, PWS (CONTINUED)

the Michigan Office of Environment, Great Lakes, and Energy (EGLE) to complete all necessary field requirements for the preservation of this rare plant community type.

Wetland Delineation, STH 162 Vernon and La Crosse Counties, 2021

Wisconsin Department of Transportation

Madison, Wisconsin

Lead Wetland Delineator. Brauna was lead wetland delineator in support of culvert, beam guard, and surface upgrades for a 5.6 mile stretch of State Trunk Highway (STH) 162 in Vernon and LaCrosse Counties. The project corridor extended from Coon Valley to STH 33. The area of interest consisted of the full length of the project corridor and selected areas requiring culvert and beam guard upgrades. The delineation resulted in the delineation of four wetlands. Stream assessments and Ordinary High Water Mark (OHWM) determinations were completed at two bridges within the Coon Valley municipal limits. Wetland types encountered include fresh wet meadow and shrub-scrub wetlands delineated in association with stream crossings or adjacent floodplains.

Wetland Delineation, STH 162 Vernon County, 2021

Wisconsin Department of Transportation

Madison, Wisconsin

Lead Wetland Delineator. Brauna was lead wetland delineator in support of culvert, beam guard, and surface upgrades for a 6.9 mile stretch of State Trunk Highway (STH) 162 in Vernon County. The project corridor extended from Stoddard to Chaseburg. The area of interest consisted of the full length of the project corridor and selected areas requiring culvert and beam guard upgrades. The delineation resulted in the delineation of nine wetlands. Stream assessments for five streams were completed. Wetland types encountered include fresh wet meadow wetlands delineated in association with stream crossings or adjacent floodplains.

Wetland Delineation, STH 29 Clark County, 2021

Wisconsin Department of Transportation

Madison, Wisconsin

Lead Wetland Delineator. Brauna was lead wetland delineator in support of proposed culvert and beam guard upgrades for a 15.1 mile stretch of State Trunk Highway (STH) 29 in Clark County. The area of interest consisted of separate investigation areas at selected culvert and beam guard locations and all local road intersections which resulted in the delineation of 104 wetlands. Wetland types encountered include fresh wet meadows, forested wetlands, and riparian wetlands associated with four major stream crossings.

Wetland Delineation, 2020

Rochester International Airport

Rochester, Minnesota

Lead Wetland Delineator. Brauna served as lead wetland delineator in support of an environmental assessment for a proposed extension of Runway 2/20 and associated Taxiway A, along with other connected actions including the realignment of navigational equipment. The area of interest is approximately 712 acres in size and resulted in the delineation of thirty-eight wetlands. Wetland types encountered include emergent seasonally-flooded basins, and forested and fresh (wet) meadows. An off-site hydrology assessment using historic aerial photographs supported field assessment of farm fields within the study area. Agricultural areas were examined resulting in the delineation of two farmed wetlands. Brauna also completed NEPA documentation for wetlands and lead wetland permitting efforts.

BRAUNA HARTZELL, GISP, PWS (CONTINUED)

Wetland Delineation, W.K. Kellogg Airport, 2020

W.K. Kellogg Airport

Battle Creek, Michigan

Lead Wetland Delineator. Brauna served as lead wetland delineator in support of an environmental documentation for a proposed road realignment to facilitate hangar development and other support services at the airport. The area of interest is approximately 52 acres in size and resulted in the delineation of six wetlands. Wetland types encountered include emergent seasonally-flooded basins and one emergent/forested wetland.

Joint Individual Permit – USACE Approval, 2019

Reconstruction and Extension of Runway 7L/25R and Taxiway A

Kenosha Regional Airport

Kenosha, Wisconsin

The proposed project includes the reconstruction and extension of Runway 7L/25R and Taxiway A at the Airport. Other actions proposed include improving the approach minimums to Runway 25R, bringing the geometries of these pavements into conformance with current standards, acquiring land and performing obstruction removal to provide clear approach and departure operations, and relocating navigational instruments and edge lighting / signage to correspond with the proposed pavement limits. Approximately 2.5 acres of wetland fill are necessary to achieve project needs. Brauna served as the lead preparer of the individual permit application which included a Practicable Alternatives Analysis.

Wetland Delineation and Biological Resources Survey, 2019

Ann Arbor Municipal Airport

Ann Arbor, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for a proposed extension of Runway 6/24 and associated Taxiway A, along with other connected actions including the removal of decommissioned navigational equipment. The area of interest is approximately 82 acres in size and resulted in the delineation of three wetlands and one stream. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include emergent seasonally-flooded basins and one stream approximately 300 ft long within the project area of interest.

Wetland Delineation and Biological Resources Survey, 2019

Kalamazoo-Battle Creek International Airport

Kalamazoo, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for a proposed extension of Runway 17/35 and improvement of airfield movement by correcting geometry deficiencies associated with the intersection of Taxiway C and Runway 17. The area of interest is approximately 246 acres in size and resulted in the delineation of seven wetlands. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include emergent seasonally-flooded basins and a large complex with multiple community types within the project area of interest.

Wetland Delineation and Biological Resources Survey, 2019

Ontonagon County Airport

Ontonagon, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for a proposed obstruction clearing for Runway 17/35. The area of interest is approximately 127

BRAUNA HARTZELL, GISP, PWS (CONTINUED)

acres is size and resulted in the delineation of thirty-one new wetlands and re-examination of seven previously delineated wetlands. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include emergent seasonally-flooded basins, forested and scrub-shrub wetlands within the project area of interest.

Wetland Delineation and Biological Resources Survey, 2019

Houghton County Airport

Calumet, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for obstruction clearing for the Runway 25 approach and RPZ, removal of an existing farm pond, and reestablishment of a regulated stream. The parcel was recently acquired by the Airport. The area of interest is approximately 23 acres is size and resulted in the delineation of four wetlands, one stream, and one small pond. Habitat for identified threatened and endangered species was assessed during field work. Wetland types encountered include an emergent seasonally-flooded basin, three forested wetlands, and a 1-acre pond with multiple community types within the project area of interest.

Joint Individual Permit – USACE Approval, 2018

Construction of Production and Logistics Facility

Haribo of America

Pleasant Prairie, Wisconsin

The proposed project includes construction of a production and logistics facility with visitor and employee parking, warehousing capability, and other amenities. 0.6 acres of wetland fill will be necessary to achieve project needs. Brauna served as the lead preparer of the individual permit application which included a Practicable Alternatives Analysis.

Wetland Delineation, W.K. Kellogg Airport, 2018

W.K. Kellogg Airport

Battle Creek, Michigan

Brauna served as lead wetland delineator in support of an environmental assessment for proposed grading and site improvements to facilitate hangar development and other support services at the airport. The area of interest is approximately 180 acres is size and resulted in the delineation of six wetlands. Wetland types encountered include emergent seasonally-flooded basins and aquatic bed wetlands.

Wetland Delineation, Crystal Airport, 2018

Metropolitan Airports Commission

Brooklyn Center, Minnesota

Brauna served as lead wetland delineator in support of alternatives analysis for an environmental assessment for proposed airfield improvements. The area of interest is approximately 50 acres is size spread over eight areas and resulted in the delineation of seven wetlands. Wetland delineated consisted of emergent Type 1 seasonally-flooded basins.



CAROLINE BRUCHMAN

GIS ANALYST

Areas of Expertise

- Geographic Information Systems (GIS)
- Environmental and cultural resources mapping and data analysis
- NEPA Compliance
- Transportation planning
- Web based mapping

Education

- MS, Geographical Sciences, University of Maryland, 2018
- BS, Geographical Sciences, University of Maryland, 2017

Past Employment

- Sabra & Associates, Inc.
- University of Maryland, College Park

Training and Seminars

- Basic Wetland Delineation Online with Field Practicum, Wetland Training Institute (WTI) – 2020

No. of Years with

Mead & Hunt

- Hired 08/01/2019

No. of Years with Other Firms

- 1

Caroline Bruchman specializes in Geographic Information Systems (GIS) mapping and environmental resource inventories through GIS desktop and/or field reviews. She coordinates with resource and regulatory agencies, preparing technical reports, identifying avoidance, minimization, and mitigation strategies. She also assists in coordinating with the public and other stakeholders and preparing environmental documentation to obtain location approval. Caroline is experienced with National Environmental Policy Act (NEPA)/ Massachusetts Environmental Policy Act (MEPA), Section 4(f) of the Department of Transportation Act, Section 106 of the National Historic Preservation Act, and Section 7 of the Endangered Species Act (ESA). Aside from her environmental experience, she is skilled in various GIS and analysis programs including the ESRI software suite, QGIS, and Tableau. She is detail-oriented implementing quality control and quality assurance workflows and in creating strong cartographic designs for paper, digital, and online mapping platforms including ArcGIS Online web mapping.

PROJECT EXPERIENCE (CULTURAL RESOURCES)

Rochester Bus Rapid Transit (BRT) Phase I and II Survey and Evaluation City of Rochester

Rochester, Minnesota

GIS Analyst. Mead & Hunt is completing cultural resources studies for the proposed Rochester BRT project in Olmsted County. Work completed to date includes defining the architecture/history area of potential effect (APE); developing a historic context that covers themes along the corridor; Phase I reconnaissance-level architecture/history survey of over 70 resources; and Phase II Evaluations for five resources. Caroline set up the GIS-based field survey application, prepared survey report maps, and compiled GIS deliverables.

Reconnaissance and Intensive Historic Resources Surveys, Section 4(f) Evaluations, Interstate Highway 35, Capital Express Central

Texas Department of Transportation (TxDOT) Environmental Affairs Division Austin, Texas

GIS Analyst. TxDOT's Environmental Affairs Division retained Mead & Hunt to complete historic resources surveys for the Interstate Highway (I-) 35 Capital Express Central project in Austin, Texas. The project area comprises of an eight-mile corridor along I-35 through central Austin and a two-mile segment along East Cesar Chavez Street. Caroline set up the GIS-based field survey application, prepared survey report maps, and compiled GIS deliverables.

Section 106 Compliance US Highway 6 and Heritage Parkway

City of Golden

Golden, Colorado

GIS Analyst. The Colorado Department of Transportation (CDOT) required determinations of National Register of Historic Places (National Register) eligibility and effects for the U.S. Highway 6 and Heritage Road interchange improvements project. Because of federal funding, the project qualifies as a federal undertaking and therefore requires compliance with Section 106 of the National Historic Preservation Act of 1966. Caroline completed site form maps and APE maps.

**Historic Context Latino/Mexican American/Chicano History of Denver
City and County of Denver Community Planning and Development
Denver, Colorado**

GIS Analyst. The City and County of Denver Community Planning and Development hired Mead & Hunt to develop the first historic context for underrepresented groups in Denver, focused upon the city's Latino/Mexican American/Chicano history. Caroline performed GIS mapping of historical research and assisted with the online mapping tool for community input.

**State Highway (SH) 115 Colorado Springs to Penrose Reconstruction
Colorado Department of Transportation (CDOT) Region 2
El Paso and Fremont Counties, Colorado**

GIS Analyst. Mead & Hunt completed Office of Archaeology and Historic Preservation (OAHP) linear site forms for two segments along State Highway (SH) 115, one in El Paso County and one in Fremont County, as well as area of potential effect (APE) maps for two project areas along SH 115. Caroline completed APE maps for both projects, as well as linear site form maps for SH 115 in El Paso and Fremont Counties.

**US 401 Interchange Section 106
North Carolina Department of Transportation (NCDOT)
Fuquay-Varina, North Carolina**

GIS Analyst. Caroline served as the GIS technician and oversaw production of GIS and mapping deliverables for the project corridor and specific historic property boundaries. The project included proposed improvements to the existing intersection of U.S. Highway (US) 401, North Carolina (NC) 42, and NC 55 in the City of Fuquay-Varina, North Carolina, located in the southwestern part of Wake County. As a continuation of a previous Building Inventory completed in 2020, Mead & Hunt carried out intensive historical architectural evaluations of five properties that were either listed in the National Register of Historic Places (National Register), previously determined eligible, or had been recommended for further study.

**Historic Properties Geographic Information Systems (GIS) Database Development
Minnesota Department of Transportation (MnDOT) Cultural Resources Unit (CRU)
Statewide, Minnesota**

GIS Analyst. Caroline developed a historic properties GIS database of approximately 85,000 properties from MnDOT historic properties shapefiles and a Microsoft Access database of historic properties provided by the State Historic Preservation Office (SHPO). Geospatial data was created through geocoding and XY events using UTM coordinates.

**Phase IA Survey, Osceola Bridge Replacement Project
Minnesota Department of Transportation (MnDOT) Cultural Resources Unit (CRU)
Osceola, Minnesota**

GIS Analyst. Caroline was responsible developing Area of Potential Effect (APE) mapping for the proposed Osceola Bridge replacement project. The bridge spans the St. Croix River and connects Wisconsin and Minnesota. Caroline used relevant parcel and historic property data, and the APE was delineated based on proposed environmental activities.

**Riverview Corridor Modern Streetcar
Ramsey County
Ramsey and Hennepin Counties, Minnesota**

GIS Analyst. Caroline compiled a list of historic properties with National Register of Historic Places (NRHP) eligible, NRHP listed, locally listed, CEF, or SEF historic status in the Riverview Streetcar study area. She created a map series highlighting properties inside of Fort Snelling and in Hennepin County.

Section 106 Compliance, STH 60

Wisconsin Department of Transportation (WisDOT)

Lodi, Wisconsin

GIS Analyst. Caroline was responsible for creating a mapping for the Lodi Canning Company Determination of Eligibility (DOE), which identifies individual buildings within the overall complex in relation to the project corridor. She also digitized existing buildings and land cover; and created the survey and United States Geological Survey (USGS) maps for project submittal.

Louisiana Historic Bridge Survey

Louisiana Department of Transportation and Development (LADOTD)

Statewide, Louisiana

GIS Analyst. Caroline was responsible for cleaning and organizing historic bridge data in Louisiana. She formatted an ArcGIS Collector application to collect data and photographs for historic bridges in Louisiana.

Section 106 Compliance, STH 33

Wisconsin Department of Transportation (WisDOT)

Baraboo, Wisconsin

GIS Analyst. Caroline geolocated recent and newly surveyed properties along the STH 33 corridor in Baraboo, Wisconsin. The properties and corridor were mapped in a series at a low scale to enhance aerial photography and included in the Architecture/History Survey Report (A/HSR).

PROJECT EXPERIENCE (TRANSPORTATION)

Total Maximum Daily Load

Maryland Department of Transportation (DOT) State Highway Administration (SHA)

Maryland

GIS Analyst. Caroline was responsible for mapping, data analysis, and documentation of environmental impacts related to the TMDL program, highway design projects, system preservation program, major capital projects, and other programs.

Environmental Impacts Analysis and Mapping

Maryland DOT SHA

Maryland

GIS Analyst. Caroline provided project mapping, analysis, and documentation for environmental compliance, including categorical exclusions, wetland impacts, and historic preservation. Tasks also included GIS data analysis and mapping in SHA's E-GIS system.

KIMBERLY SHANNON ENVIRONMENTAL SCIENTIST

Kimberly Shannon is an environmental scientist with over 14 years of experience. Over the years she has gained professional experience in coordinating and completing a variety of project types including transportation, oil and gas, commercial development, local government, and nuclear. She has honed her regulatory and technical skills while providing excellent service to diverse clients. Her technical expertise and strongest skills as a consultant include the identification, mapping, and delineation of streams and wetlands; 404 permitting and compensatory mitigation; United States Army Corps of Engineers (USACE) regulatory coordination and assisting various clients through the 404 permitting process. Kimberly also has professional experience in the preparation and coordination of environmental assessment and categorical exclusion documents in support of the National Environmental Policy Act (NEPA) process, habitat evaluation for threatened and endangered species, bird surveys, proposal writing and pricing, technical writing and editing, training junior staff, and working with other project managers, colleagues and clients to achieve project goals and objectives in a timely and cost-effective manner.

Her professional experience prior to consulting includes working for a non-profit conservation organization and running the Oklahoma Natural Areas Registry program. She worked with private landowners throughout Oklahoma to identify and evaluate rare and protected species and their habitat so that voluntary protection agreements could be established.

CURRENT PROJECTS

Biological Assessment and Mitigation Planning for 404 Permit Private Client Atoka County, OK

Kimberly and other staff are assisting a client with the 404 permit comments from state and federal agencies by undertaking and coordinating an alternatives analysis, a mitigation plan for multiple miles of stream impacts, an adaptive management plan for the mitigation site, surveys for threatened and endangered species, a biological assessment report and agency coordination.

Delineation of Waters of the U.S. and 404 Permit City of Atoka Atoka, OK

Kimberly and staff are delineating streams and wetlands at a 300+ acre commercial site for a pending project. A delineation report will be prepared and used to complete a general 404 permit for the client. Mitigation may also be required.

PAST PROJECTS

Wetland Delineations Ontonagon County Airport - Schuster Field Ontonagon County, MI

Kimberly assisted with the assessment of potentially jurisdictional wetlands at Schuster Field during June 2019 and August 2016. Wetlands were assessed for hydrology, hydrophytic vegetation and hydric soils based on USACE guidelines and the



Areas of Expertise

- Stream and wetland delineation
- Permitting and licensing
- NEPA
- Project management
- Regulatory compliance
- Environmental Assessments
- Environmental Reports

LinkedIn url

- <https://www.linkedin.com/pub/kimberly-shannon/29/412/a38>

Education

- MS, Applied and Natural Science, Oklahoma State University, 1997
- BS, Biology, Oklahoma State University, 1994
- Certificate, GIS, Tulsa Community College, 2010

No. of Years with Mead & Hunt

- Hired 05/04/2015

No. of Years with Other Firms

- 10

KIMBERLY SHANNON (CONTINUED)

Northcentral and Northeast supplement to the 1987 guidelines. Boundaries of wetlands were mapped using sub-meter accurate GPS technology.

Oka' Yanahli Preserve Waters of the U.S. Delineations

Oklahoma Chapter of The Nature Conservancy

Johnston County, OK

Kimberly and other staff completed the identification and delineation of multiple intermittent and ephemeral streams, ponds and wetlands within The Nature Conservancy's eastern portion of the Oka' Yanahli preserve. Within a 575-acre portion of the larger 3,120 acre preserve, over 17,000 linear feet of potentially jurisdictional streams were delineated and mapped using sub-meter accurate Trimble GPS technology. A report with figures and shapefiles were included in the deliverables for this project. The delineation was performed in support of The Nature Conservancy's stream enhancement and restoration efforts as part of ongoing mitigation projects for ODOT and future mitigation projects.

Threatened & Endangered Species Surveys, EC 1923

Oklahoma Department of Transportation

Statewide, Oklahoma

Kimberly and a subconsultant will be completing Bald Eagle surveys for ODOT at 90+ project sites in 29 eastern Oklahoma counties during January 2018. Specific reports will be prepared and provided to ODOT.

Mitigation Coordination for Oklahoma Department of Transportation with Multiple Agencies, EC 1660, 2015-2016

Oklahoma Department of Transportation

Statewide, Oklahoma

Kimberly assisted ODOT with the coordination of various mitigation projects across Oklahoma. As part of this contract she is working directly with the USACE, other consultants, and the Oklahoma Chapter of The Nature Conservancy.

Mitigation Plan, Durant Bypass, May 2010-2015

Oklahoma Department of Transportation

Durant, Oklahoma

Kimberly prepared a compensatory mitigation plan for a 404 permit in support of ODOT's bypass loop around US70 in Durant, Oklahoma. She coordinated with the United States Army Corps of Engineers, ODOT, subcontractors, and the City of Durant during the project.

Delineation, Reporting, and 404 Permitting, November 2011-September 2012

QuikTrip Corporation

Muskogee, OK and Dallas/Fort Worth Metroplex

Kimberly led and completed multiple delineations, protected species habitat evaluations, reporting efforts, and 404 permitting (NWP39) including mitigation bank and agency coordination for the client.

Local Government Contract for Statewide County Road and Bridge Projects

Oklahoma Department of Transportation

Statewide Oklahoma

These similar county-level projects included the delineation of potentially jurisdictional waterbodies, assessment of potential habitat for federally protected species, reporting efforts, the completion of project specific NEPA clearance documents, tribal coordination, and coordination with ODOT contacts and county commissioners.

KIMBERLY SHANNON (CONTINUED)

Chitwood/Sholem Lateral Pipeline Right-of-Way Assessments, Reports and 404 Permitting, April-August 2012

DCP Midstream, LLC

Jefferson County, Oklahoma and Clay and Jack Counties, Texas

Kimberly classified over 189 waterbodies along 31.5 miles of pipeline ROW. She reviewed all ROW feature maps and coordinated field data for the presence of potentially jurisdictional waters and potential threatened and endangered species habitat. Kimberly classified and coordinated mapping efforts with GIS professionals and the client to assist with horizontal directional drilling (HDD) boring locations to avoid or minimize impacts to waterbodies. These data were used to complete delineation reports, 404 permitting (NWP12) and to prepare engineering alignment sheets. As appropriate, Kimberly coordinated directly with the Tulsa and Fort Worth District Regulatory Branch of the USACE for the timely completion and issuance of NWP12. She worked directly with the client's environmental project manager to assist with reroutes and attended alignment sheet review meetings.

Southern Hills Natural Gas Liquids Trunk Line ROW Assessments, Reports and 404 Permitting, December 2011-July 2012

DCP Midstream, LLC

Multiple Oklahoma Counties

Kimberly reviewed and classified over 500 waterbodies along approximately 260 miles of pipeline right-of-way. This project scope was comparable to the project above.

Pipeline Project Coordination and Reporting, August 2014

DCP Midstream, LLC

Ozona, Texas

This was a very fast-paced project for a natural gas gathering pipeline project in Crockett County, Texas in which Kimberly coordinated field work and reporting and completed 404 and floodplain permitting with state and federal agencies for the client.

Comanche Peak Nuclear Power Plant, 2006-2008

Luminant Generation Company

Glen Rose, Texas

Kimberly was part of a terrestrial ecology team that conducted field surveys and wrote sections of an environmental report (ER) in support of a combined license application (COL). She performed habitat assessments for federal and state threatened and endangered (T&E) species, vegetation mapping and calculation of percent cover by plant species, and wetland delineations both at the power plant and along water pipeline ROWs. She assisted the aquatic ecology team with fish surveys, water data, and invertebrate surveys. Kimberly participated in two Nuclear Regulatory Commission site audits and performed quality control of references for the ER and Final Safety Analysis Report (FSAR). ■