HOLIDAY INN EXPRESS PROJECT

YPSILANTI CHARTER TOWNSHIP

Washtenaw County, MI

ANANT PATEL

Wetland Delineation Report

Prepared by:

merjent

January 2024

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF APPENDICES

1.0 INTRODUCTION

Merjent, Inc. (Merjent) performed field surveys to determine the presence and extent of wetlands and other surface water features for the Holiday Inn Express Project (Project) located in the Ypsilanti Township, Washtenaw County, Michigan (Figure 1). Other surface water features can include, but are not limited to, streams, ponds, and lakes. This wetland delineation report will be used to support future planning and permitting.

This report outlines the field survey methodology and findings, as completed by Merjent. This report has been compiled by the following staff that are trained and experienced in wetland delineation methodologies and applicable regulations:

- **Joe von Wahlde, PWS – Environmental Consultant; Project Manager**

  Mr. von Wahlde is a Senior Environmental Analyst in Merjent's West Michigan office with over 30 years of professional and local experience. His service expertise includes wetland delineation, threatened and endangered species reviews, critical dune permitting, wildlife investigations, surface resource permitting, mitigation design, construction oversight, and monitoring. Mr. von Wahlde is certified as Professional Wetland Scientist (PWS) by the Society of Wetland Scientists, and he is certified as storm water operator by the Michigan Department of Environment, Great Lakes, and Energy (EGLE). His responsibilities include client management, project management, business development, state and federal agency coordination, field work coordination and supervision, regulatory permitting, and technical report preparation. He has worked in Michigan, Ohio, Indiana, Illinois, Minnesota, and North Carolina.

- **Jason DeMoss, PWS – Environmental Consultant; Field Lead and Report Author**

  Jason DeMoss is a Professional Wetland Scientist with 10 years of experience in natural resources ecology. Mr. DeMoss has led wetland delineation field teams for a variety of projects throughout the Great Lakes Region and the northern Midwest, and he has collaborated with clients in renewable energy, utility, commercial and residential developments, oil & gas, remediation, and government. His expertise includes water resource delineations, threatened and endangered species habitat assessments, regulatory permitting, project siting, and GIS data management and map products.

- **Kigen Mares – Environmental Consultant; GIS Analyst**

  Mr. Kigen Mares is a GIS analyst with three years of experience in GIS, wetland determinations, and wetland restoration. His expertise includes geology and environmental science, in addition to GIS. He received his BS in Geology from Winona State University and Graduate Certificate in GIS from the University of Wisconsin – Milwaukee. Mr. Mares has worked with state and federal agencies to collect, process, and maintain data across several projects. Apart from his regular duties, Mr. Mares developed a database that represents data spatially, maintained the integrity of the data, and assisted with stewardship prioritization.

  .

2.0 METHODOLOGY

Merjent coordinated with Anant Patel to identify a 4.60-acre area to complete the wetland delineation field survey (Figure 1; Survey Area). The entire Survey Area may or may not be used for Project-related permitting and/or on-site construction activity.

Wetlands are defined by the presence of hydrophytic vegetation and wetland hydrology and soils indicators, as observed under normal circumstances and as described in the United States Army Corps of Engineers (USACE) Wetland Delineation Manual (Environmental Laboratory, 1987).

Streams are defined as any linear waterway otherwise referred to as, but not limited to, streams, creeks, rivers, or other local designations. Streams are characterized by a continuous bed and bank, bounded by observed and defined field indicators. For these features, the Ordinary High Water Mark (OHWM) width, substrate, and flow are recorded, along with the OHWM indicators and analysis found within the data sheets. The OHWM is not a direct in-field observation, but an assemblage of evidence in determining the shape of the channel of a linear feature that reflects the magnitudes and variety of flows necessary to define it based on indirect observations and indicators. The OHWM width is the result of the weight of evidence observed in-field (Gabrielle et. al., 2022).

Open waterbodies are defined as non-linear features that permanently hold water deeper than approximately six feet and of enough duration to preclude most aquatic vegetation or other wetland characteristics. These features include those commonly referred to as, but not limited to, ponds, lakes, or reservoirs. These features commonly have wetland fringe, which is assessed independently.

Under non-normal circumstances, indicators for a feature may be obscured, fully or in-part. In those cases, additional data and context may be needed in utilizing professional judgement to define the most appropriate extents and attributes for these features.

2.1 DESKTOP REVIEW METHODOLOGY

The following processes and procedures were followed to determine the potential presence of wetlands or other surface water features within the survey area prior to the site visit.

2.1.1 Previous Site Review

Previous site review can give biologists direct insight for current site conditions, providing them with an expectation of what features may be present and what site factors may influence how the site is assessed. In cases where previous field survey data are available, Merjent investigates and independently documents each previously identified feature. Where boundary data originating from a previous field survey do not match or corroborate Merjent's findings, the biologists collect additional data and photos, and they provide sufficient notes and detail to explain discrepancies.

2.1.2 Background Data Review

Prior to the survey, the biologists review all available desktop resources to identify suspected surface water features, and an in-office desktop review of available information is performed using these data, which advised the development and execution of the field investigation.

2.1.2.1 Topography

The United States Geological Survey (USGS) topographic map (Figure 2; USGS, 2019) shows general landscape relief in relation to municipal, private, and public landmarks such as towns, railroads, and roadways. It is useful in determining general locations of large surface water features and surface water flow across a landscape context within and surrounding the survey area.

2.1.2.2 Soil Survey

The U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) Soil Survey Geographic Database (Figure 3; SSURGO; Soil Survey Staff, USDA-NRCS, 2019) soils inventory describes the soils series for the survey area and surrounding landscape. Attributes within each soil series can provide evidence of potential for wetlands, most commonly the Hydric Soils classification attribute. While historical land use and common drainage practices have led to many of these areas no longer supporting any remaining indication of wetland conditions, hydric soils series are still useful in determining areas with which to focus survey effort.

2.1.2.3 Mapped Surface Water Features

The National Wetlands Inventory (Figure 4; NWI; United States Fish and Wildlife Service [USFWS], 2021) is a nation-wide layer developed locally to remotely identify wetland areas based on additional background information. Portions may be updated at the state or county level at various time intervals, and some may be field verified in select locations.

The USGS National Hydrography Dataset (Figure 4; NHD; USGS, 2004) is the most up-to-date and comprehensive nationwide dataset for rivers, streams, canals, lakes, ponds, coastline, dams, and stream gages. While originally developed by the Environmental Protection Agency (EPA) and USGS, it is now maintained and updated by multiple regulatory bodies.

2.1.3 Current, Historic, and High-Resolution Aerial Imagery

Aerial imagery provides site-wide observations within the context of the surrounding landscape. It is useful in estimating locations and extents of surface water features, especially in non-forested areas. Historic and recent imagery can be used to observe a site during different conditions, such as spring, summer, and fall, or wet, normal, and dry circumstances. A comparison of imagery is also useful in determining impacts or disturbances to a site through time that may affect the current locations and extents of surface water features. Merjent utilizes aerial imagery from a variety of sources including Environmental Systems Research Institute (ESRI, various), Google Earth™, and the National Agriculture Imagery Program (NAIP; USDA, various).

2.1.4 Recent Climatic Conditions and Precipitation Data

Because differences in annual precipitation can affect the size and extent of wetlands, precipitation amounts for the three months prior to the dates of the delineation were compared to long-term precipitation amounts. Each day was categorized as Normal, Wet, or Dry following results of the U.S. Environmental Protection Agency's (EPA) and USACE Antecedent Precipitation Tool (APT) results. Merjent determined precipitation amounts using the APT in lieu of Wetland Climate Tables (WETS tables) because the APT software pulls from more robust and additional data than WETS weather stations (USACE, 2023). Antecedent precipitation data

provide useful context for determining features and their extents. For example, wet conditions may explain upland vegetation in areas of high water table or surface water, or they may obscure or remove some ordinary high water mark (OHWM) indicators for some streams.

2.2 FIELD SURVEY METHODOLOGY

Merjent delineates wetlands based on the methodology described in the USACE Wetland Delineation Manual (Environmental Laboratory, 1987) and the applicable Regional Supplement to the Corps of Engineers Wetland Delineation Manual, for this Project, the Midwest Region (USACE, 2010). Biologists identify vegetative communities, streams, and open waterbodies according to the Cowardin Classification System (Cowardin et al., 1979).

Field documentation is recorded during survey for desktop-mapped resources that are determined to be absent. In areas of upland associated with hydric soils or linear stream features, representative photos are taken of upland conditions. In areas of upland conditions within NWI-mapped features, a data point, Wetland Determination Data Form, and photos are taken to document upland conditions, unless the area is significantly sloped or otherwise obviously upland; in those circumstances, representative photos may be deemed sufficient.

2.2.1 Feature Naming

Features identified in associated figures and appendices are named in the following manner:

- Wetlands (w01, w02, etc.)
- Streams (s01, s02, etc.)
- Open waters (o01, o02, etc.)
- Wetland data points (dp01, dp02, etc.)
- Stream data points (sp01, sp02, etc.)
- Photo points (pp01, pp02, etc.)

Features are named consecutively, as encountered in the field, and may not follow a geographical spatial order.

2.2.2 Site Photographs

Photographs provided in Appendix A provide a visual representation of wetlands and other surface water features, as well as general site conditions, at the time of inspection. Photos are geospatially referenced by their associated photo point location and presented with direction taken (e.g., “pp01 view West,” “pp02 view Northeast”). Photo point locations are depicted on the wetland delineation figure (Figure 5).

Representative photos are collected for each wetland community and open water body identified. Photos are taken up, down, and across each linear stream feature. Site photos are collected throughout the survey area to demonstrate upland and transitional conditions. Additional photos not provided in Appendix A may be available upon request.

2.2.3 Wetland Determination Data Forms

Wetland Determination Data Forms are the written documentation of how representative data point locations meet or do not meet each of the wetland criteria (Appendix B). Plant species

nomenclature follows the Regional Wetland Plant List (USACE, 2020). Hydric soils were identified using the methods outlined in Field Indicators of Hydric Soils in the United States, Version 8.2 (USDA-NRCS, 2018).

2.2.4 Rapid Ordinary High Water Mark Field Identification Data Sheets

The Rapid OHWM Field Identification Data Sheets (Gabrielle et. al., 2022; Appendix C) are the written documentation of what indicators of the potential OHWM were observed, and how they are applied in determining the OHWM.

This data sheet was developed for the sole purpose of identifying the OHWM of linear features, and it does not apply to open waterbodies such as lakes or ponds. For open waterbodies, OHWM indicators are recorded and explained for each feature below.

2.2.5 Limitations of Survey Data

Merjent surveys all data point locations and boundaries of wetlands, streams, and open waterbodies using Global Positioning System (GPS) technology capable of sub-meter accuracy. The OHWM of the Saginaw River is an approximate boundary. As a part of civil survey and Project design, Spicer will collect a more defined and accurate OHWM to support site plans and permitting. While these surveys provide reasonably accurate and industry-standard spatial data, they do not provide the same level of accuracy as a professional land survey.

3.0 RESULTS

3.1 DESKTOP REVIEW RESULTS

3.1.1 Previous Site Review

Merjent is unaware of previous wetland delineation mapping at this site or associated regulatory review.

3.1.2 Background Data Review

3.1.2.1 Topography

The Ypsilanti East USGS 7.5-minute quadrangle topographic map (Figure 2) for this Project shows the area of investigation west of South Huron Street. Due to the relatively small size of the survey area, elevation resolution is reduced at the scale of the 7.5-minute quadrangle topographic map. The survey area is shown as approximately 750 feet above mean sea level on the topographic map. No other features are noted in the topographic map.

3.1.2.2 Soil Survey

The SSURGO soil map (Figure 3) identifies three soil types within the survey area, one of which is classified as hydric (Table 3-1).

TABLE 3-1

Mapped Soil Units

Symbol	Description	Hydric Soil Unit?	Acres
Sb	Sebewa loam, disintegration moraine, 0 to 2 percent slopes	Yes	2.91
OsB	Oshtemo loamy sand, 0 to 6 percent slopes	No	0.10
WaA	Wasepi sandy loam, 0 to 4 percent slopes	No	1.59
		TOTAL	**4.60**

Note: Source: Soil Survey Staff, USDA-NRCS, 2019

3.1.2.3 Mapped Surface Water Features

The hydrology map (Figure 4) displays no NWI or NHD features within the survey area. An excavated freshwater pond is located southeast of the survey area.

3.1.3 Current, Historic, and High-Resolution Aerial Imagery

Merjent reviewed multiple sources of historic aerial imagery to evaluate the survey area for wetland signatures. Based on this review, it is evident that a new hotel and stormwater basin was constructed northeast of the survey area between 2019 and 2020. Prior to 2019 there is evidence of potential saturation in the northeastern survey area and continues offsite to the north. However, upon construction of the stormwater basin in 2019 the saturation disappears in proceeding years. It is likely that the construction of the stormwater basin potentially affected the hydrology of the

northeastern survey area. Additionally, a stream appears to be present in the northern survey area and continues west directly north of the survey area.

3.1.4 Recent Climatic Conditions and Precipitation Data

Merjent utilized the APT to calculate antecedent precipitation conditions for the date of the survey. Conditions during the delineation were considered normal compared to long-term precipitation averages. APT results for the delineation date are provided in Appendix D.

3.2 FIELD SURVEY RESULTS

On December 19, 2023, Merjent Biologist Jason DeMoss, PWS conducted a general reconnaissance of the entire survey area to evaluate site conditions and determine boundaries of wetlands and other surface water features.

Land use within the survey area is predominantly undeveloped early successional forest. A maintained pipeline easement is located in the eastern portion of the survey area.

All soil excavations remained open for at least 10 minutes to allow any groundwater to fill the excavated soil pit in the event that heavy clay soils slowed groundwater movement. With the exception of the wetland datapoint, no soil pits had observable groundwater above 18 inches.

3.2.1 Uplands

Merjent reviewed the survey area for wetlands and recorded six separate datapoints. These datapoints were placed in areas where the landscape position was set the lowest in elevation, where natural vegetation was present, and where the presence of wetland was the most likely.

Five of the datapoints do not meet the criteria for having all three wetland criteria present. While some datapoints do meet hydrophytic vegetation criteria for wetlands, much of the survey area lacks hydric soil indicators and wetland hydrology. Additionally, while some datapoints have a dominance of mostly facultative-rated vegetation, most datapoints have a prevalence index above three. The survey area contains a mix of forest, shrub, and herbaceous vegetation. Common trees throughout the survey area are typical of early successional forests, such as eastern cottonwood (*Populus deltoides*), ash-leaf maple (*Acer negundo*), European buckthorn (*Rhamnus cathartica*), red oak (*Quercus rubra*), and slippery elm (*Ulmus rubra*). Shrubs throughout the survey area consist of gray dogwood (*Cornus racemosa*), autumn olive (*Elaeagnus umbellata*), and small saplings of the aforementioned tree species. Herbaceous vegetation in the southwest survey area consists of American pokeweed (*Phytolacca americana*), Canadian horseweed (*Erigeron canadensis*), garlic-mustard (*Alliaria petiolata*), reed canary grass (*Phalaris arundinacea*), sticky-willy (*Galium aparine*), and groundivy (*Glechoma hederacea*). Herbaceous vegetation in the northeastern and eastern survey area consists of Fuller's teasel (*Dipsacus fullonum*), common motherwort (*Leonurus cardiaca*), smooth brome (*Bromus inermis*), multiflora rose (*Rosa multiflora*), red fescue (*Festuca rubra*), reed canary grass, Allegheny blackberry (*Rubus allegheniensis*), lesser poverty rush (*Juncus tenuis*), and tall goldenrod (*Solidago altissima*).

Datapoint dp06 was placed in a location of historic aerial saturation (pre-2018). Recent aerial imagery show that since the construction of the stormwater basin northeast of the survey area has reduced or removed the saturation. Datapoint dp06 does not exhibit any visible signs of

wetland hydrology or indicators of hydric soil. Vegetation at datapoint dp06 is marginally hydrophytic, passing the dominance test but a has a prevalence index greater than three.

It is Merjent's professional opinion that due to the observed conditions within the survey area and lack of all three wetland criteria at each datapoint, the site is predominantly upland, with the exception of one wetland – described below.

3.2.2 Wetlands

Merjent identified one wetland totaling 0.04 acre to community type within the survey area according to Cowardin et al. (1979) classification (Figure 5). Representative photographs of the wetland are provided in Appendix A. More detailed information for the associated data point is found in the wetland determination data forms in Appendix B. A summary of the wetland is provided below.

3.2.2.1 Wetland w01 (0.04 acre)

Wetland w01 (0.04 acre) is a palustrine forested (PFO) wetland fed by groundwater and flood water from stream s01. The wetland is connected to stream s01 via a culvert at the northeast boundary. The wetland is located in a small ditch and is separated from stream s01 via a berm and continues offsite to the west. The wetland has a sparse herbaceous stratum that is predominantly fowl manna grass (*Glyceria striata*). Forested and shrub vegetation is predominantly eastern cottonwood and European buckthorn. Sparse river-bank grape (*Vitis riparia*) woody vines are also growing throughout the forest canopy. The soil profile meets the hydric soil criteria for Depleted Below Dark Surface (A11) and Thick Dark Surface (A12). Indicators of wetland hydrology observed include High Water Table (A2), Saturation (A3), Water Marks (B1), Water-stained Leaves (B9), Geomorphic Position (D2), and FAC-neutral Test (D5). According to the ORAM quantitative rating, wetland w02 scored 12 points and was determined to be a Category 1 wetland.

3.2.2.2 Naturally Problematic and Significantly Disturbed Datapoints

Naturally Problematic and Significantly Disturbed datapoints are those by which indicators of, or lack thereof, wetland conditions are obscured, and additional context may be needed in making accurate determinations. Commonly encountered Naturally Problematic conditions include hardpan, natural cobble or gravel, bedrock, and a dominance of upland and/or facultative upland plant species. Significantly Disturbed conditions relate specifically to the obscuring of indicators caused by anthropogenic influence or recent, catastrophic natural disturbances. Commonly encountered Anthropogenic Significantly Disturbed conditions include row crop agriculture, forestry practices, and site clearing or grading. Natural Significantly Disturbed conditions can include dam breaches or other major flooding and storm-related blowdown.

Depending upon site conditions and access to similar nearby features, varying approaches may be utilized in making final determinations. If possible, a similar, nearby feature that is determined not to be Naturally Problematic or Significantly Disturbed can be evaluated and used as reference for evaluating the target feature. In these cases, topography, proximity to target feature, size, and relation to other, nearby surface water features are considered. Where not possible, a conservative assumption may be made, and the feature is assumed to meet the anticipated indicators under normal circumstances. Additional desktop review after survey may also be utilized and can be useful, especially in agricultural settings.

Datapoint dp05 exhibits evidence of soil mixing or backfilling. This datapoint is located within an existing pipeline easement, and the soil was likely excavated and backfilled for the pipeline installation or maintenance. The soil does not meet any hydric soil criteria.

3.2.3 Streams

Merjent identified one stream totaling 0.02 acre within the survey area (Figure 5; Table 3-2). Representative photographs of the stream are provided in Appendix A. The completed Rapid OHWM Field Identification Data Sheets are provided in Appendix C.

TABLE 3-2

Summary of Delineated Streams

Stream ID	Name	OHWM Width (feet)	TOB Width (feet)	Flow Regime	Flow Direction	Size (acres) within Survey Area
s01	UNT to Paint Creek	12	21	Intermittent	South/West	0.02
					Total:	**0.02**

OHWM = ordinary high water mark; UNT = unnamed tributary; TOB = Top of bank

3.2.3.1 Stream s01 (0.02 acre)

Stream s01 (0.02 acre), an unnamed tributary (UNT) to Paint Creek, is an intermittent stream that flows north to south/west through the survey area. Stream s01 turns west and flows offsite to join Paint Creek approximately 1,200 feet west of the survey area. It flows through the northwestern portion of the survey area. Both banks are gently sloped, vegetated, and stable. North of the survey area boundary, the stream originates from a culvert south of James K. Hart Parkway. The stream has a clay, silt, and mucky substrate. At the time of survey, the stream contained standing water, was partially frozen, and was stagnant. Debris buildup on the streambanks and nearby shrubs show that the stream flows to the south and west toward Paint Creek.

Stream s01 has an OHWM width of 12 feet and an OHWM depth of two feet. The OHWM was determined by a combination of observations. Above the OHWM there is a gradual change in slope along both banks; the western bank has a higher elevation at the location of stream OHWM data recording. At the OHWM there is no vegetation and it transitions to deciduous trees, such as eastern cottonwood, then trees transition to shrubs. At the OHWM, there is evidence of debris buildup such as wood pieces, leaves, and other organic material.

4.0 SUMMARY AND CONCLUSION

Merjent performed a delineation of wetlands and other surface water features for the Holiday Inn Express Project in Washtenaw County, Michigan.

Wetlands are regulated in Michigan by the Michigan Department of Environment, Great Lakes, and Energy (EGLE) under the Natural Resources and Environmental Protection Act (NREPA, P.A. 451). Wetlands that meet one of the following are considered regulated: 1) wetlands within 500 feet of the OHWM of a river, stream, lake, or pond; or 2) wetlands that have a surface water connection to a river, stream, lake, or pond; or 3) wetlands that are five acres or greater in size. Wetlands are regulated under Part 303, Wetlands Protection of NREPA. As referenced in the methodology section, a stream is defined as any watercourses having a bed, banks, and evidence of flow or continued occurrence of water. Streams are regulated in Michigan under Part 301, Inland Lakes and Streams, of NREPA.

In our professional opinion, the wetland identified within the survey area is regulated under Part 303 of P.A. 451. Wetland w01 is within 500 feet of stream s01 which regulates the wetlands under Part 303. Any construction activities within the wetland will require a permit from EGLE under Part 303 of NREPA. This wetland delineation represents our professional opinion. EGLE is the final regulatory oversight on wetland delineations in Michigan. In Michigan, the USACE regulates wetland within certain defined limits of the Great Lakes. The survey area occurs outside of these defined limits, therefore the wetland and stream identified in the survey area will not fall under USACE jurisdiction.

The stream identified within the survey area is regulated under Part 301 of P.A. 451. Any construction activities proposed within the stream will require a permit from EGLE.

Although not part of our original scope for the survey area, Merjent reviewed the Floodplain Emergency Management Agency (FEMA) map source and identified that Paint Creek is the nearest stream with an associated floodplain, approximately 1,000 feet west of the survey area.

Any construction activities within 500 feet of a waterbody or stream or greater than one acre of earth disturbance will require a soil erosion and sedimentation control permit under Part 91 of NREPA. These permits can be obtained from the Washtenaw County Water Resources Commission.

Ypsilanti Charter Township's Zoning Ordinance Article XIV (Environmental Standards) lists natural feature setbacks for natural features such as streams and wetlands:

- A 25 foot non-disturbance setback from the boundary or edge of a protected wetland or county drain.
- A 50 foot non-disturbance setback from the ordinary high-water mark of any lake, pond, river, or stream, including, but not limited to the Huron River, Paint Creek, and their tributaries.

Additionally, under Article III (Woodlands Protection), Chapter 24 (Development) of Ypsilanti Charter Township's Code of Ordinances, any removal or alteration of tree larger than eight inches in diameter at breast height requires a Woodland Use Permit.

A full list of requirements for development within Ypsilanti Charter Township can be found on their website.

5.0 DISCLAIMER

The field survey results presented herein apply to the existing site conditions at the time of the survey. They do not apply to site changes of which Merjent is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to the natural processes or human impacts at the Project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of Merjent.

6.0 LITERATURE CITED

Cowardin, L.M., V. Carter, F.C. Golet, E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Department of the Interior, Fish and Wildlife Service, Washington, D.C. 131 pp.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Waterways Experiment Station, Vicksburg, MS.

Gabrielle, C. L. et al. 2022. National Ordinary High Water Mark Field Delineation Manual for Rivers and Streams. Technical Report ERDC/CRREL TR-22-16. Wetlands Regulatory Assistance Program. Vicksburg, MS.

Soil Survey Staff, USDA-NRCS. 2019. Web Soil Survey. Available online at: http://websoilsurvey.sc.egov.usda.gov/. Accessed December 2023.

USACE. 2020. National Wetland Plant List, version 3.5. USACE Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, NH. Available online at: http://wetland-plants.usace.army.mil/.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0), ed. J. S. Wakeley, 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.

USACE. 2023. “Antecedent Precipitation Tool (APT) – v2.0.0.” https://github.com/jDeters-USACE/Antecedent-Precipitation-Tool/releases/tag/v2.0.0.

USDA-NRCS. 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. Edited by L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA-NRCS, in cooperation with the National Technical Committee for Hydric Soils.

U.S. Environmental Protection Agency (USEPA). 2021. Antecedent Precipitation Tool. Available online at: https://www.epa.gov/wotus/antecedent-precipitation-tool-apt. Accessed December 2023.

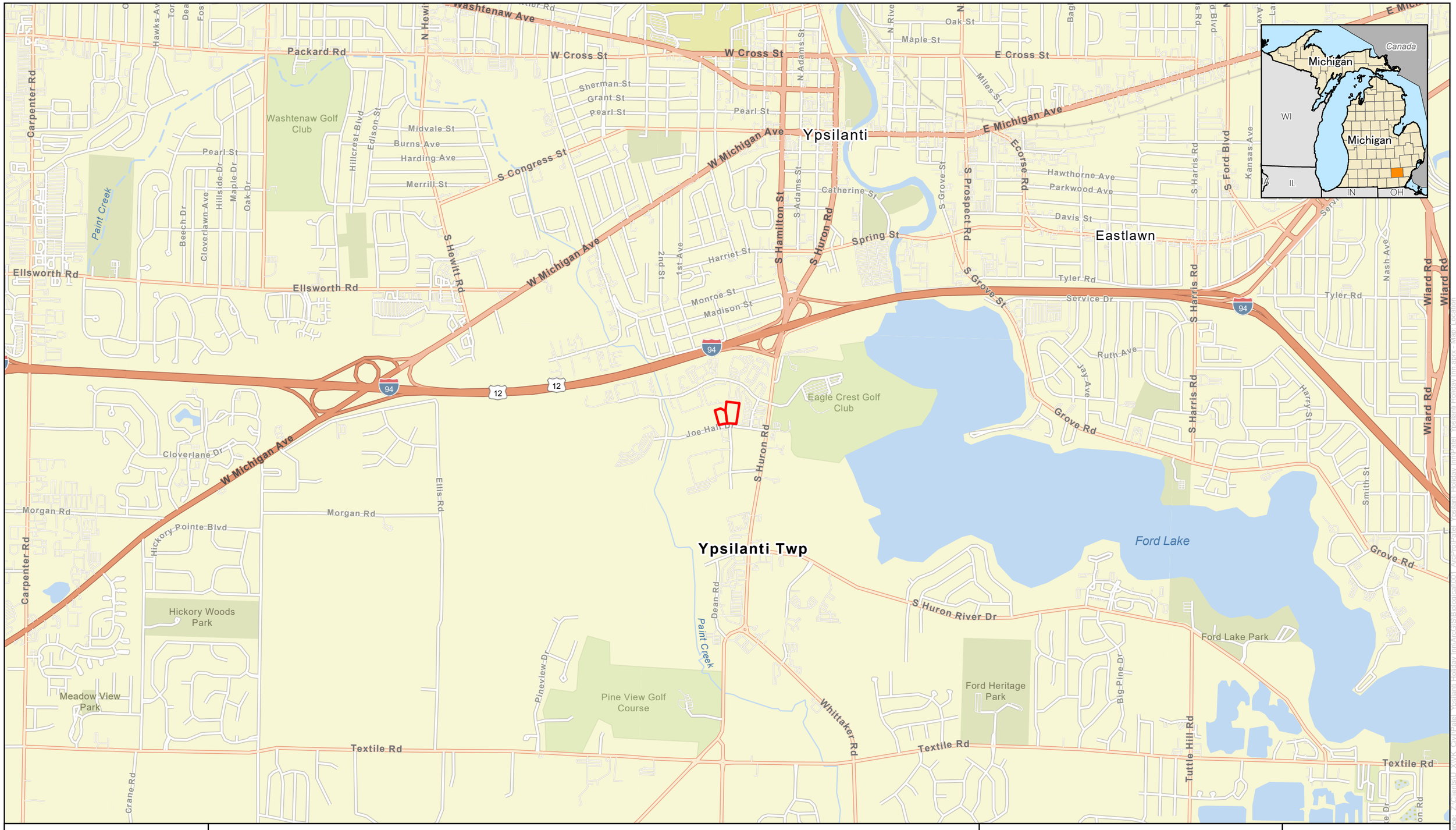
U.S. Fish and Wildlife Service (USFWS). 2021. National Wetlands Inventory. National Wetlands Inventory Data Mapper, updated May 3, 2021. Available online at: https://www.fws.gov/wetlands/Data/Mapper.html. Accessed December 2023.

U.S. Geological Survey (USGS). 2004. National Hydrography Dataset. Reston, Va. 2004.

USGS. 2019. The National Map. Available online at: https://www.usgs.gov/the-national-map-data-delivery/gis-data-download. Accessed December 2023.

Figure 1

Project Location



0 1,000 2,000

Feet

1 inch = 2,000 feet

N W E S

For Environmental Review Purposes Only

Figure 1: Project Location

Patel - Ypsilanti Holiday Inn

Anant Patel

Washtenaw County, Michigan

Survey Area

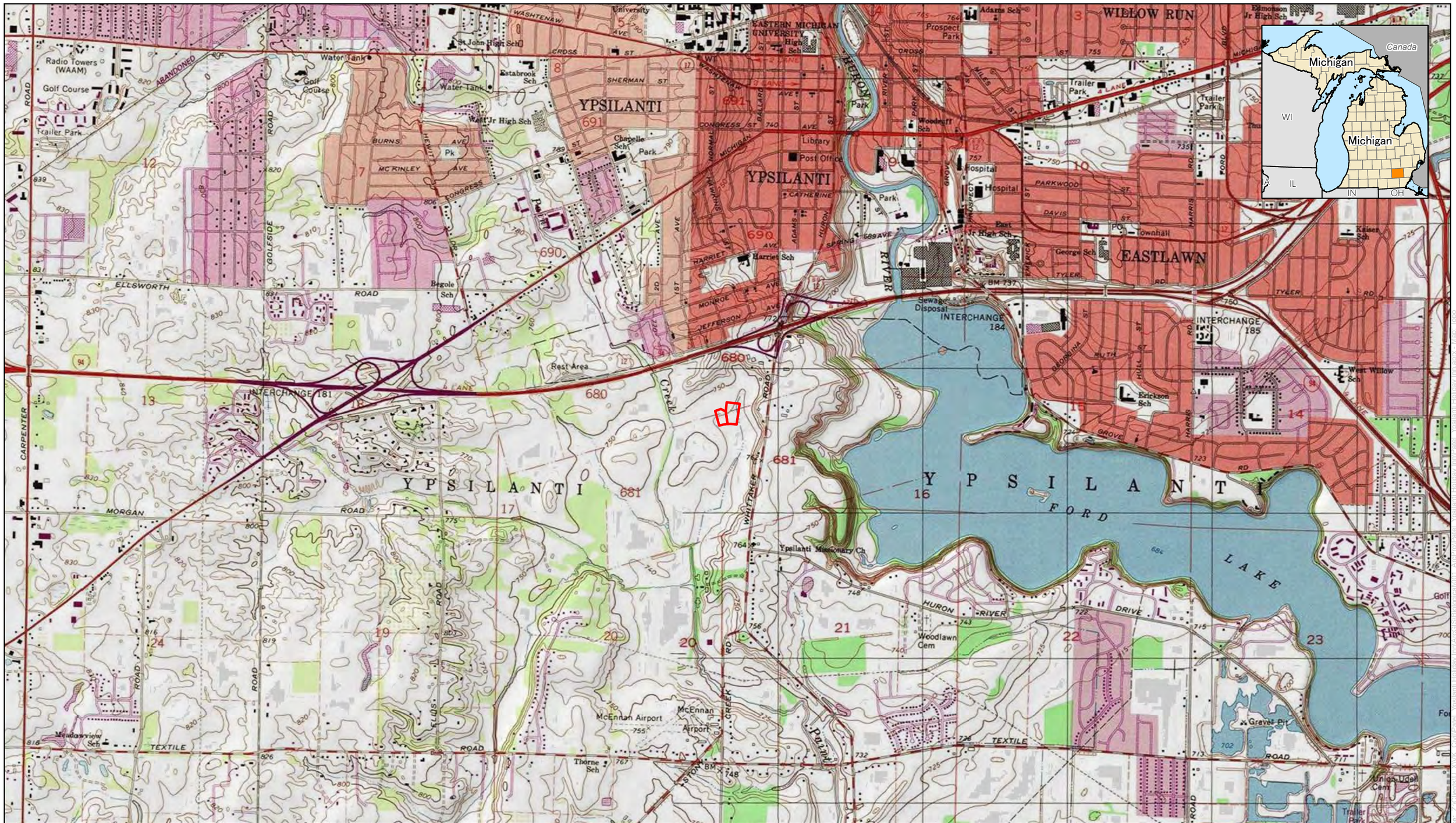
merjent

Source: Z:\Clients\IO_AVK_Civil\Patel_Ypsilanti Holiday Inn\ArcGIS\Biological\001_ArcFilePatel_Ypsilanti Holiday Inn.aprx - Map: Location

Date: (12/26/2023)

Figure 2

Topography



0 1,000 2,000

Feet

1 inch = 2,000 feet

N W E S

For Environmental Review Purposes Only

Figure 2: Topography

Patel - Ypsilanti Holiday Inn

Anant Patel

Washtenaw County, Michigan

Survey Area

merjent

Figure 3

SSURGO Soils

MdA
0% Hydr.

OsC
0% Hydr.

Sb
94% Hydr.

James L Hart

SfB
0% Hydr.

Anna J Stepp Dr

StC
0% Hydr.

Gf
95% Hydr.

WaA
2% Hydr.

Joe Hall Dr

OsB
0% Hydr.

Joe Hall Dr

Joe Hall Dr

0 50 100
Feet

1 inch = 100 feet

N
W E
S

For Environmental Review Purposes Only

Figure 3: SSURGO Soil Type

Patel - Ypsilanti Holiday Inn
Anant Patel
Washtenaw County, Michigan

Survey Area
Hydric Soil
Non-Hydric Soil

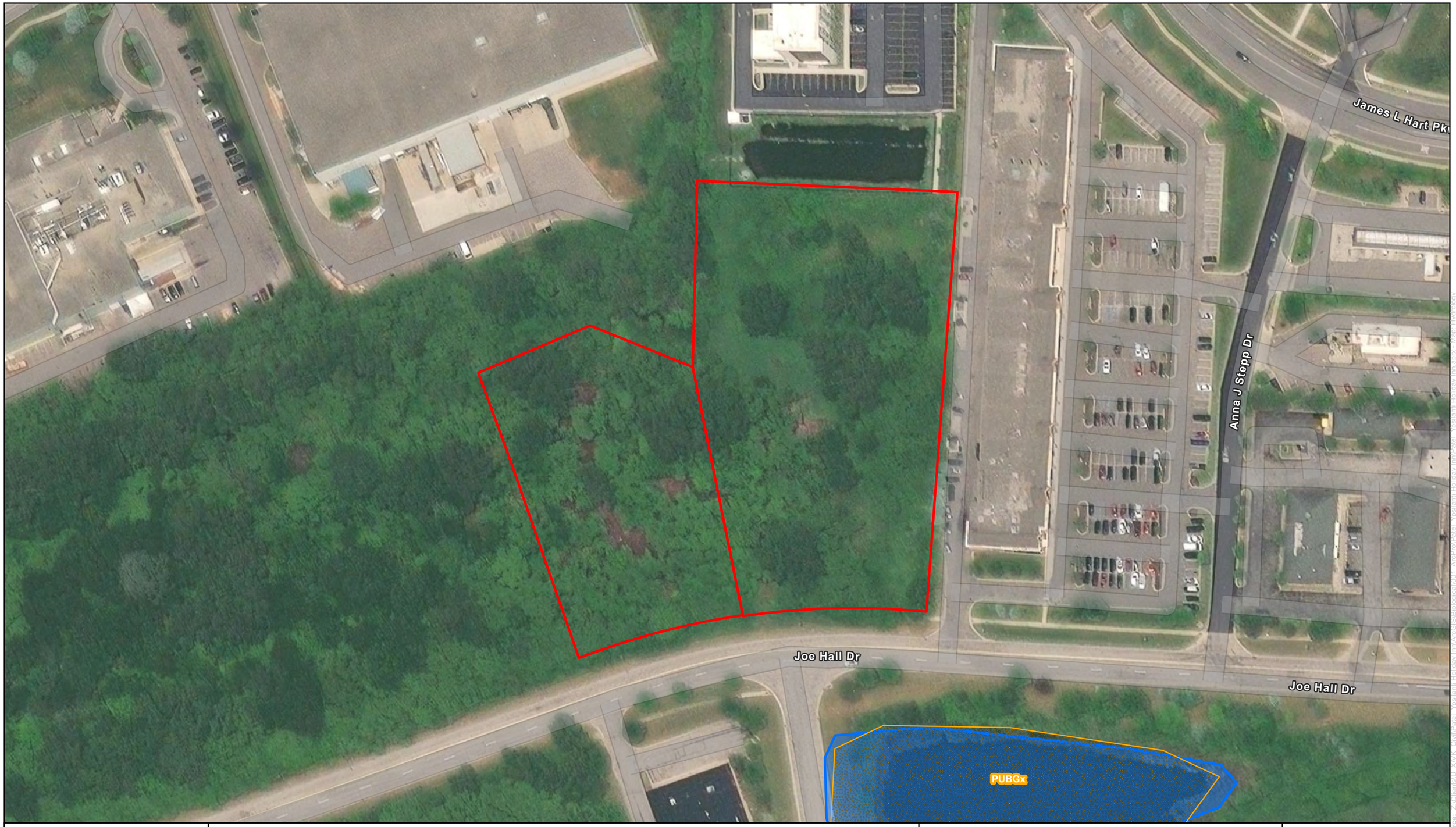
merjent

Source: Z:\Clients\D_X\VA_Civil\Patel_Ypsilanti Holiday Inn\ArcGIS\Biological\01_ArcPro\Patel_Ypsilanti Holiday Inn.aprx - Map: Soils

Date: (12/26/2023)

Figure 4

Hydrology



0 50 100
Feet
1 inch = 100 feet

N
W E
S

For Environmental Review Purposes Only

Figure 4: Hydrology
Patel - Ypsilanti Holiday Inn
Anant Patel
Washtenaw County, Michigan

Survey Area
Mapped Wetland (NWI)
*Mapped Waterway (NHD)
Mapped Waterbody (NHD)

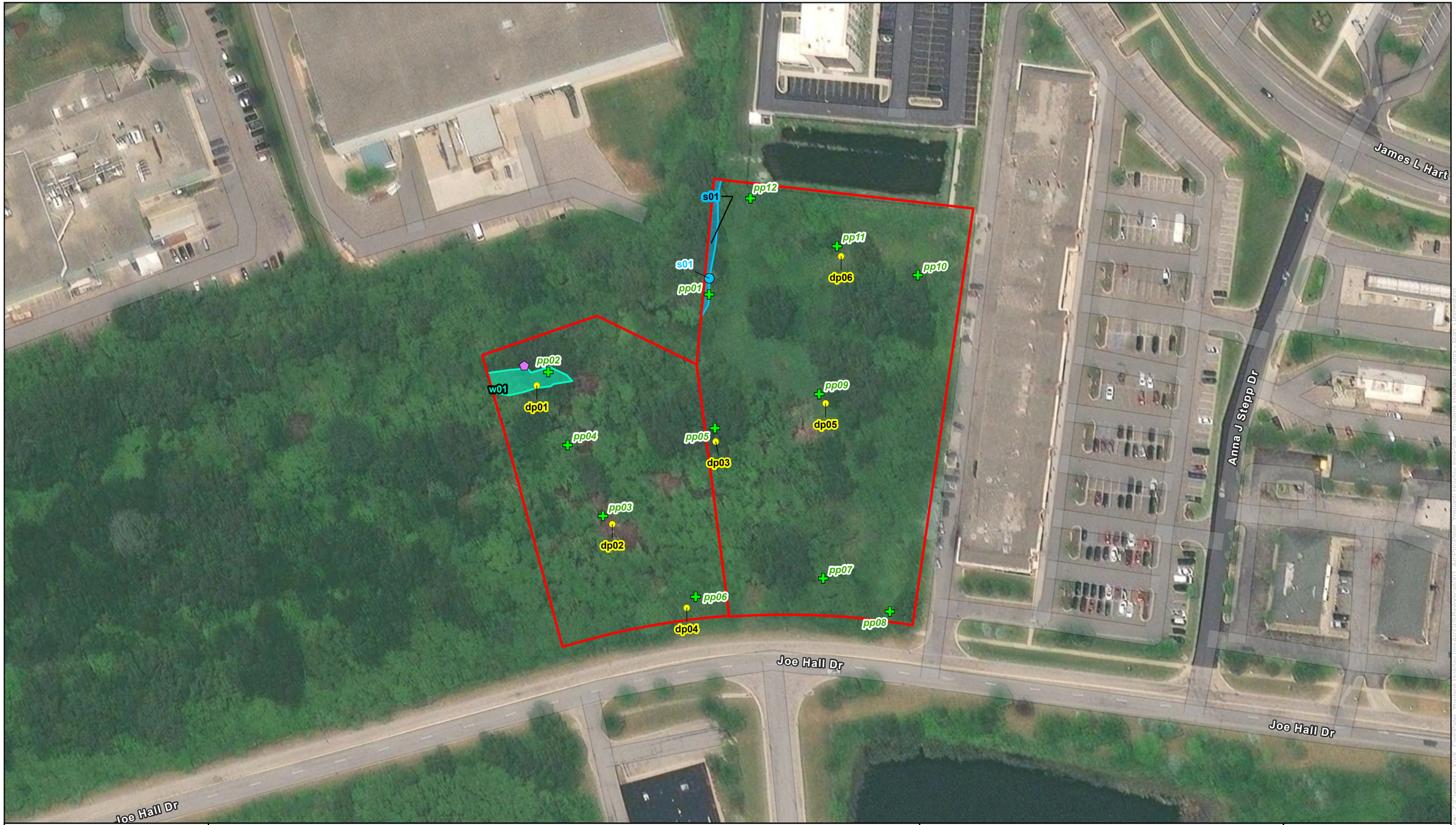
Not present in extent

merjent®

Source: Z:\Clients\D_AVK_CivilPatel_Ypsilanti Holiday Inn\ArcGIS\Biological\001_ArcPro\Patel_Ypsilanti Holiday Inn.aprx - Map: Hydrology
Date: (12/26/2023)

Figure 5

Wetland Delineation



0 50 100

Feet

1 inch = 100 feet

N W E S

For Environmental Review Purposes Only

Figure 5: Wetland Delineation

Patel - Ypsilanti Holiday Inn

Anant Patel

Washtenaw County, Michigan

- Survey Area
- Culvert Point
- Photo Point
- Wetland Data Point
- Stream Point
- Delineated Waterway
- Delineated Wetland
- PFO

merjent

Source: Z:\Clients\0_XNK_Civil\Patel_Ypsilanti Holiday Inn\ArcGIS\Biological\001_ArcPro\Patel_Ypsilanti Holiday Inn.aprx - Map: Delineation

Date: (12/26/2023)

Appendix A

Survey Photographs

Photograph pp01 view North

Photograph pp01 view Southwest

Photograph pp02 view East

Photograph pp02 view Soil

Photograph pp02 view West

Photograph pp03 view East

Photograph pp03 view North

Photograph pp03 view Soil

Photograph pp03 view South

Photograph pp03 view West

Photograph pp04 view East

Photograph pp04 view West

Photograph pp05 view East

Photograph pp05 view North

Photograph pp05 view Soil

Photograph pp05 view South

Photograph pp05 view West

Photograph pp06 view East

Photograph pp06 view North

Photograph pp06 view Soil

Photograph pp06 view West

Photograph pp07 view North

Photograph pp08 view North

Photograph pp09 view East

Photograph pp09 view North

Photograph pp09 view Soil

Photograph pp09 view South

Photograph pp09 view West

Photograph pp10 view South

Photograph pp11 view East

Photograph pp11 view North

Photograph pp11 view Soil

Photograph pp11 view South

Photograph pp11 view West

Photograph pp12 view South

Appendix B

Wetland Determination Data Forms –

Midwest Region

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; 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: Ypsilanti Holiday Inn Express City/County: Ypsilant; Washtenaw Sampling Date: 12/19/2023
Applicant/Owner: Anant Patel State: MI Sampling Point: dp01
Investigator(s): J. DeMoss Section, Township, Range: Section 17 T03S R07E
Landform (hillside, terrace, etc.): Ditch/toeslope at base of berm Local relief (concave, convex, none): None
Slope (%): 0 Lat: 42.223461 Long: -83.622229 Datum: WGS 84
Soil Map Unit Name: Sebewa loam, disintegration moraine, 0 to 2 percent slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	35	Yes	FAC
2. *Rhamnus cathartica*	20	Yes	FAC
3. *Acer negundo*	10	No	FAC
4.			
5.			
	65	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	15	Yes	FAC
2.			
3.			
4.			
5.			
	15	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Glyceria striata*	10	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	15	Yes	FACW
2.			
	15	=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	10	x 1 =	10
FACW species	15	x 2 =	30
FAC species	80	x 3 =	240
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	105 (A)		280 (B)

Prevalence Index = B/A = 2.67

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Bidens cernua located outside of sample plot radius

SOIL

Sampling Point: dp01

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 2/1	100					Loamy/Clayey	clay loam
12-18	10YR 6/1	90	7.5YR 4/6	10	C	M	Loamy/Clayey	sandy loam

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- X Depleted Below Dark Surface (A11)
- X Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 4

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

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

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; 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: Ypsilanti Holiday Inn Express City/County: Ypsilant; Washtenaw Sampling Date: 12/19/2023

Applicant/Owner: Anant Patel State: MI Sampling Point: dp02

Investigator(s): J. DeMoss Section, Township, Range: Section 17 T03S R07E

Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): None

Slope (%): 0 Lat: 42.223037 Long: -83.621896 Datum: WGS 84

Soil Map Unit Name: WaA: Wasepi sandy loam, 0 to 4 percent slopes (191687) NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	25	Yes	FAC
2. *Rhamnus cathartica*	10	Yes	FAC
3. *Populus deltoides*	5	No	FAC
4.			
5.			
	40	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phytolacca americana*	30	Yes	FACU
2. *Erigeron canadensis*	25	Yes	FACU
3. *Alliaria petiolata*	20	Yes	FAC
4. *Hackelia virginiana*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1. *Vitis riparia*	10	Yes	FACW
2.			
	10	=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: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 71.4% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	70	x 3 =	210
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column Totals:	140 (A)		470 (B)
Prevalence Index = B/A =			3.36

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Quercus rubra located nearby but outside of sample plot

SOIL

Sampling Point: dp02

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-11	10YR 3/1	100					Loamy/Clayey	clay loam
11-18	10YR 3/1	95	10YR 4/4	5	C	M	Loamy/Clayey	clay loam

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

No hydrology identified. Left soil pit open for 10 minutes and no water table was identified

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; 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: Ypsilanti Holiday Inn Express City/County: Ypsilant; Washtenaw Sampling Date: 12/19/2023

Applicant/Owner: Anant Patel State: MI Sampling Point: dp03

Investigator(s): J. DeMoss Section, Township, Range: Section 17 T03S R07E

Landform (hillside, terrace, etc.): toeslope (base of berm) Local relief (concave, convex, none): None

Slope (%): 0 Lat: 42.223304 Long: -83.621474 Datum: WGS 84

Soil Map Unit Name: Sb: Sebewa loam, disintegration moraine, 0 to 2 percent slopes (191668) NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	30	Yes	FAC
2. *Acer negundo*	20	Yes	FAC
3. *Rhamnus cathartica*	20	Yes	FAC
4.			
5.			
	70	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Rhamnus cathartica*	15	Yes	FAC
2.			
3.			
4.			
5.			
	15	=Total Cover	
Herb Stratum (Plot size: 5)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
		=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
		=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: 4 (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	0	x 2 =	0
FAC species	85	x 3 =	255
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	85 (A)		255 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: dp03

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-13	10YR 3/1	100					Loamy/Clayey	clay loam
13-18	10YR 5/3	80	10YR 5/6	20	C	M	Loamy/Clayey	sandy loam

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

Left soil pit open for 10 minutes and no water table was identified

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; 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: Ypsilanti Holiday Inn Express City/County: Ypsilant; Washtenaw Sampling Date: 12/19/2023

Applicant/Owner: Anant Patel State: MI Sampling Point: dp04

Investigator(s): J. DeMoss Section, Township, Range: Section 17 T03S R07E

Landform (hillside, terrace, etc.): Footslope Local relief (concave, convex, none): None

Slope (%): 2 Lat: 42.222785 Long: -83.621574 Datum: WGS 84

Soil Map Unit Name: WaA: Wasepi sandy loam, 0 to 4 percent slopes (191687) NWI classification: None

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

Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____

Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

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

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus racemosa*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	45	Yes	FACW
2. *Galium aparine*	30	Yes	FACU
3. *Glechoma hederacea*	25	Yes	FACU
4. *Solidago altissima*	15	No	FACU
5. *Cirsium arvense*	5	No	FACU
6.			
7.			
8.			
9.			
10.			
	120	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	20	x 3 =	60
FACU species	75	x 4 =	300
UPL species	0	x 5 =	0
Column Totals:	140 (A)		450 (B)
Prevalence Index = B/A =			3.21

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

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

SOIL

Sampling Point: dp04

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/1	100					Loamy/Clayey	sandy loam
5-7	10YR 4/1	90	7.5YR 4/6	10	C	M	Loamy/Clayey	sandy loam
7-18	10YR 3/1	100					Loamy/Clayey	clay loam

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: ___

Depth (inches): ___

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

No hydrology identified. Left soil pit open for 10 minutes and no water table was identified

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; 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: Ypsilanti Holiday Inn Express City/County: Ypsilant; Washtenaw Sampling Date: 12/19/2023

Applicant/Owner: Anant Patel State: MI Sampling Point: dp05

Investigator(s): J. DeMoss Section, Township, Range: Section 16 T03S R07E

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

Slope (%): 0 Lat: 42.223434 Long: -83.621019 Datum: WGS 84

Soil Map Unit Name: Sb: Sebewa loam, disintegration moraine, 0 to 2 percent slopes (191668) NWI classification: None

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

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

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

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

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

Remarks:
Area is a maintained water/sewer pipeline (YCUA Water/Sewer signs). Soil showing sings of being backfilled/mixed and vegetation is regularly mowed on aerial imagery and on street view imagery.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Sapling/Shrub Stratum (Plot size: 15)			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
Herb Stratum (Plot size: 5)			
1. *Phalaris arundinacea*	70	Yes	FACW
2. *Leonurus cardiaca*	20	Yes	UPL
3. *Cirsium arvense*	15	No	FACU
4. *Glechoma hederacea*	15	No	FACU
5. *Rubus allegheniensis*	15	No	FACU
6. *Apocynum cannabinum*	10	No	FAC
7. *Arctium minus*	10	No	FACU
8. *Dipsacus fullonum*	5	No	FACU
9.			
10.			
	160 =Total Cover		
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
	=Total Cover		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	10	x 3 =	30
FACU species	60	x 4 =	240
UPL species	20	x 5 =	100
Column Totals:	160 (A)		510 (B)
Prevalence Index = B/A =			3.19

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.

Hydrophytic Vegetation Present? **Yes** ____ **No** X

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse Ulmus rubra and Elaeagnus umbellata identified nearby/outside of sample plot radius. Dipsacus more dominant to southeast.

SOIL

Sampling Point: dp05

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-9	10YR 3/1	100					Loamy/Clayey	clay loam
9-11	10YR 3/1	90	10YR 5/2	5	D	M	Loamy/Clayey	clay loam
			7.5YR 5/8	5	C	M		
11-18	10YR 2/1	100					Loamy/Clayey	clay loam

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Soil shows signs of mixing or backfilling. Surface layer has very small pieces of 10YR 2/1 clods as well as small sandy clods of 7.5YR 4/4. Also evidence of potentially buried soil by the 10YR 2/1 starting at 11 inches

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

Left soil pit open for 10 minutes and no water table was identified

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Midwest Region
See ERDC/EL TR-10-16; 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: Ypsilanti Holiday Inn Express | City/County: Ypsilant; Washtenaw | Sampling Date: 12/19/2023
Applicant/Owner: Anant Patel | State: MI | Sampling Point: dp06
Investigator(s): J. DeMoss | Section, Township, Range: Section 16 T03S R07E
Landform (hillside, terrace, etc.): Flat | Local relief (concave, convex, none): None
Slope (%): 0 | Lat: 42.223892 | Long: -83.620973 | Datum: WGS 84
Soil Map Unit Name: Sb: Sebewa loam, disintegration moraine, 0 to 2 percent slopes (191668) | NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation____, Soil____, or Hydrology____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation____, Soil____, or Hydrology____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes ____ No X
Wetland Hydrology Present? Yes ____ No X

Is the Sampled Area within a Wetland? **Yes** ____ **No** X

Remarks:
Area shows historic signs of rutting on aerial imagery (potentially from previous logging/tree clearing). Area may have historically been a wetland (saturation visible in 4/2017 imagery) but construction of SW basin to the north may have hydrologically altered this area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Populus deltoides*	10	Yes	FAC
2.			
3.			
4.			
5.			
	10	=Total Cover	
Sapling/Shrub Stratum (Plot size: 15)			
1. *Cornus amomum*	15	Yes	FACW
2. *Rhamnus cathartica*	10	Yes	FAC
3. *Elaeagnus umbellata*	10	Yes	UPL
4. *Salix interior*	2	No	FACW
5.			
	37	=Total Cover	
Herb Stratum (Plot size: 5)			
1. *Juncus tenuis*	55	Yes	FAC
2. *Festuca rubra*	25	Yes	FACU
3. *Daucus carota*	10	No	UPL
4. *Solidago altissima*	10	No	FACU
5. *Prunella vulgaris*	10	No	FAC
6.			
7.			
8.			
9.			
10.			
	110	=Total Cover	
Woody Vine Stratum (Plot size: 30)			
1.			
2.			
		=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: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	17	x 2 =	34
FAC species	85	x 3 =	255
FACU species	35	x 4 =	140
UPL species	20	x 5 =	100
Column Totals:	157 (A)		529 (B)
Prevalence Index = B/A =			3.37

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ____

Remarks: (Include photo numbers here or on a separate sheet.)
Nearby vegetation outside of sample plot: Multiflora rose and smooth brome. Further west Solidago and rubus allegh. dominant.

SOIL

Sampling Point: dp06

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/1	100					Loamy/Clayey	sandy loam
5-18	10YR 6/4	95	10YR 5/8	5	C	M	Loamy/Clayey	sandy loam

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 5 cm Mucky Peat or Peat (S3)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ Coast Prairie Redox (A16)
- ___ Iron-Manganese Masses (F12)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Excavated multiple soil pits in 30 foot radius (both inside tire ruts and outside tire ruts) and all soil nearby did not have any hydric soil indicators

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

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

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

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

Remarks:

No hydrology identified. Left soil pit open for 10 minutes and no water table was identified

Appendix C

OHWM Data Sheets

U.S. Army Corps of Engineers (USACE)

RAPID ORDINARY HIGH WATER MARK (OHWM) FIELD IDENTIFICATION DATA SHEET

The proponent agency is Headquarters USACE CECW-CO-R.

From Approved -
OMB No. 0710-0025
Expires: 01-31-2025

AGENCY DISCLOSURE NOTICE

The public reporting burden for this collection of information, 0710-OHWM, is estimated to average 30 **minutes** per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

Project ID #: s01	Site Name: Ypsilanti Holiday Inn Express	Date and Time: 12/19/2023 10:00AM
Location (lat/long): 42.224040, -83.621494	Investigator(s): J. DeMoss	

Step 1 Site overview from remote and online resources

Check boxes for online resources used to evaluate site:

- [ ] gage data
- [ ] LiDAR
- [ ] geologic maps
- [ ] climatic data
- [x] satellite imagery
- [ ] land use maps
- [x] aerial photos
- [ ] topographic maps
- [x] Other: Field survey

Describe land use and flow conditions from online resources.
Were there any recent extreme events (floods or drought)?
No recent flood events. Area is industrial/commercially developed. A recent hotel construction and stormwater basin (with emergency overflow into stream) was constructed to northeast/east of stream in 2019-2020.

Step 2 Site conditions during field assessment. First look for changes in channel shape, depositional and erosional features, and changes in vegetation and sediment type, size, density, and distribution. Make note of natural or man-made disturbances that would affect flow and channel form, such as bridges, riprap, landslides, rockfalls etc.

Stream is generally channelized and flows from north to south/southwest. At the time of the survey water was stagnant, but flow direction evidence was visible via scouring and debris deposition. Substrate was clay/silt. As mentioned above, stormwater basin has a riprap overflow into stream northeast of sampling location. A culvert was identified northeast of w01 that connects to s01 offsite.

Step 3 Check the boxes next to the indicators used to identify the location of the OHWM.

OHWM is at a transition point, therefore some indicators that are used to determine location may be just below and above the OHWM. From the drop-down menu next to each indicator, select the appropriate location of the indicator by selecting either just below `b', at `x', or just above `a' the OHWM.

Go to page 2 to describe overall rationale for location of OHWM, write any additional observations, and to attach a photo log.

Geomorphic indicators

- [x] **Break in slope:** a
  - [x] *on the bank:* a
  - [ ] *undercut bank:*
  - [x] *valley bottom:* b
  - [ ] Other: _____
- [x] **Shelving:** a
  - [ ] *shelf at top of bank:*
  - [ ] *natural levee:*
  - [x] *man-made berms or levees:* a
  - [ ] *other berms:* _____
- [x] **Channel bar:** b
  - [ ] *shelving (berms) on bar:*
  - [x] *unvegetated:* x
  - [x] *vegetation transition (go to veg. indicators)* a
  - [ ] *sediment transition (go to sed. indicators)*
  - [ ] *upper limit of deposition on bar:*
- [ ] **Instream bedforms and other bedload transport evidence:**
  - [ ] *deposition bedload indicators (e.g., imbricated clasts, gravel sheets, etc.)*
  - [ ] *bedforms (e.g., pools, riffles, steps, etc.):*
- [ ] *erosional bedload indicators (e.g., obstacle marks, scour, smoothing, etc.)*
- [ ] **Secondary channels:**

Sediment indicators

- [ ] **Soil development:**
- [ ] **Changes in character of soil:**
- [ ] **Mudcracks:**
- [ ] **Changes in particle-sized distribution:**
  - [ ] *transition from* _____ to _____
  - [ ] *upper limit of sand-sized particles*
  - [ ] *silt deposits:*

Vegetation Indicators

- [x] **Change in vegetation type and/or density:** x

  Check the appropriate boxes and select the general vegetation change *(e.g., graminoids to woody shrubs).* ***Describe the vegetation transition looking from the middle of the channel, up the banks, and into the floodplain.***

  - [x] *vegetation absent to:* deciduous trees
  - [ ] *moss to:*
  - [ ] *forbs to:*
  - [ ] *graminoids to:*
  - [ ] *woody shrubs to:*
  - [x] *deciduous trees to:* woody shrubs
  - [ ] *coniferous trees to:*
- [ ] **Vegetation matted down and/or bent:**
- [ ] **Exposed roots below intact soil layer:**

Ancillary indicators

- [x] **Wracking/presence of organic litter:** x
- [x] **Presence of large wood:** x
- [x] **Leaf litter disturbed or washed away:** x
- [x] **Water staining:** x
- [ ] **Weathered clasts or bedrock:**

Other observed indicators? Describe:

Project ID #: s01

Step 4 Is additional information needed to support this determination? ☐ Yes ☒ No If yes, describe and attach information to datasheet:

Step 5 Describe rationale for location of OHWM

OHWM was determined primarily based on absence of vegetation and debris placement on downed limbs showing the direction of water flow.

Additional observations or notes

Attach a photo log of the site. Use the table below, or attach separately.

Photo log attached? ☐ Yes ☒ No If no, explain why not: Found in Wetland Delineation Report

List photographs and include descriptions in the table below.

Number photographs in the order that they are taken. Attach photographs and include annotations of features.

Photo Number	Photograph description

OHWM Field Identification Datasheet Instructions and Field Procedure

Step 1 Site overview from remote and online resources **Complete Step 1 prior to site visit.**

Online Resources: Identify what information is available for the site. Check boxes on datasheet next to the resources used to assess this site.

a. gage data
b. aerial photos
c. satellite imagery
d. LiDAR
e. topographic maps
f. geologic maps
g. land use maps
h. climatic data (precipitation and temperature)

Landscape context: Use the online resources to put the site in the context of the surrounding landscape.

a. **Note on the datasheet under Step 1:**
   i. Overall land use and change if known
   ii. Recent extreme events if known (e.g., flood, drought, landslides, debris flows, wildfires)
b. Consider the following to inform weighting of evidence observed during field visit.
   i. What physical characteristics are likely to be observed in specific environments?
   ii. Was there a recent flood or drought? Are you expecting to see recently formed or obscured indicators?
   iii. How will land use affect specific stream characteristics? How natural is the hydrologic regime? How stable has the landscape been over the last year, decade, century?

Step 2 Site conditions during the field assessment (assemble evidence)

a. Identify the assessment area.
b. Walk up and down the assessment area noting all the potential OHWM indicators.
c. Note broad trends in channel shape, vegetation, and sediment characteristics.
   i. Is this a single thread or multi-thread system? Is this a stream-wetland complex?
   ii. Are there any secondary and/or floodplain channels?
   iii. Are there obvious man-made alterations to the system?
   iv. Are there man-made (e.g., bridges, dams, culverts) or natural structures (e.g., bedrock outcrops, Large Wood jams) that will influence or control flow?
d. Look for signs of recurring fluvial action.
   i. Where does the flow converge on the landscape?
   ii. Are there signs of fluvial action (sediment sorting, bedforms, etc.) at the convergence zone?
e. Look for indicators on both banks. If the opposite bank is not accessible, then look across the channel at the bank.
f. **In Step 2 of the datasheet** describe any adjacent land use or flow conditions that may influence interpretation of each line of evidence.
   i. What land use and flow conditions may be affecting your ability to observe indicators at the site?
   ii. What recent extreme events may have caused changes to the site and affected your ability to observe indicators?

Step 3a List evidence

Assemble evidence by checking the boxes next to each line of evidence:

a. If needed, use a separate scratch datasheet to check boxes next to possible indicators, or check boxes of possible indicators in pencil and use pen for final decision.
b. If using fillable form, then follow the instructions for filling in the fillable form.

Context is important when assembling evidence. For instance, pool development may be an indicator of interest on the bed of a dry stream, but may not be a useful indicator to take note of in a flowing stream. On the other hand, if the pool is found in a secondary channel adjacent to the main channel, it could provide a line of evidence for a minimum elevation of high flows. Therefore, consider the site context when deciding which indicators provide evidence for identifying the OHWM. Explain reasoning in Step 5.

Questions to consider while making observations and listing evidence at a site:

Geomorphic indicators	**Sediment and soil indicators**	**Vegetation Indicators**	**Ancillary indicators**
Where are the breaks in slope?	Where does evidence of soil formation appear?	Where are the significant transitions in vegetation species, density, and age?	Is there organic litter present?
Are there identifiable banks?		Is there vegetation growing on the channel bed?	
Is there an easily identifiable top of bank?	Are there mudcracks present?	If no, how long does it take for the non-tolerant vegetation to establish relative to how often flows occur in the channel?	Is there any leaf litter disturbed or washed away?
Are the banks actively eroding?			
Are the banks undercut?	Is there evidence of sediment sorting by grain size?	Where are the significant transitions in vegetation?	Is there large wood deposition?
Are the banks armored?			
Is the channel confined by the surrounding hillslopes?		Is the vegetation tolerant of flowing water?	Is there evidence of water staining?
Are there natural or man-made berms and levees?		Has any vegetation been flattened by flowing water?	
Are there fluvial terraces?			
Are there channel bars?			

Are the following features of fluvial transport present?
Evidence of erosion: obstacle marks, scour, armoring
Bedforms; riffles, pools, steps, knickpoints/headcuts
Evidence of deposition: imbricated clasts, gravel sheets, etc.

In some cases, it may be helpful to explain why an indicator was NOT at the OHWM elevation, but found above or below. It can also be useful to note if specific indicators (e.g., vegetation) are NOT present. For instance, note if the site has no clear vegetation zonation.

Step 3b **Weight each line of evidence and weigh body of evidence**

Weight each indicator by considering its importance based upon:

a. Relevance:

i. Is this indicator left by low, high, or extreme flows?

Tips on how to assess the indicator relative to type of flow:

Consider the elevation of the indicator relative to the channel bed. What is the current flow level based on season or nearby gages? Consider the elevation of the indicator relative to the current flow. If the stream is currently at baseflow and indicator is adjacent to that, then it is likely a low flow indicator. The difference between high and extreme flow indicators can sometimes be difficult to determine.

***Landscape context from Step 1 can help determine the relevance, strength, and reliability of the indicators observed in the field.**

***Information in Chapter 2 of the OHWM field manual provides information on specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.**

ii. Did recent extreme events and/or land use affect this indicator?

1. Recent floods may have left many extreme flow indicators, or temporarily altered channel form. Other resources will likely be needed to support any OHWM identification at this site. Field evidence of the OHWM may have to wait for the site to recover from the recent flood.
2. Droughts may cause field evidence of OHWM to be obscured, because there has been an extended time since the last high flow event. There can be overgrowth of vegetation or deposition of material from surrounding landscape that can obscure indicators.
3. Both man-made (e.g., dams, construction, mining activities, urbanization, agriculture, grazing) and natural (e.g., fires, floods, debris flows, beaver dams) disturbances can all alter how indicators are expected to appear at a site. Chapter 6 and Chapter 7 of the OHWM field manual provides specific case-studies that can help in interpreting evidence at these sites.

b. Strength:

i. Is this indicator persistent across the landscape?

1. Look up and downstream and across the channel to see if you see the same indicator at multiple locations.
2. Does the indicator occur at the same elevation as other indicators?

c. Reliability:

i. Is this indicator persistent on the landscape over time? Will this indicator still persist across seasons?

1. This can be difficult to determine for some indicators and may be specific to climatic region (in terms of persistence of vegetation) and history of land use or other natural disturbances.
2. Chapter 2, Chapter 6, and Chapter 7 of the OHWM field manual describes each indicator in detail and provides examples of areas where indicators are difficult to interpret.

d. Weigh body of evidence:

i. Combine weights: integrate the weighted line of evidence (relevance, strength, reliability) of each indicator.

ii. For each of the observed indicators, which are more heavily weighted? Where do high value indicators co-occur along the stream reach? Do they co-occur at a similar elevation along the banks relative to water surface (or channel bed if there is no water).

iii. On datasheet, select the indicators used to identify the OHWM. Information in Chapter 2 of the OHWM field manual provides descriptions of specific indicators which can assist in putting these in context and determining relevance, strength, and reliability.

e. Take photographs of indicators and attach a log using either page 2 of datasheet or another method of logging photos.

i. Annotate photos with descriptions of indicators.

Step 4 **Is additional information needed? Are other resources needed to support the lines of evidence observed in the field?**

a. If additional resources are needed, then repeat steps 3a and 3b for the resources selected in Step 1 of assembling, weighting, and weighing evidence collected from online resources. Chapter 5 of the OHWM field manual provides information on using online resources.

b. Any data collected from online tools have strengths and weaknesses. Make sure these are clear when determining relevance, strength, and reliability of the remotely collected data. Clearly describe why other resources were needed to support the lines of evidence observed in the field, as well as the relevance, strength, and reliability of the supporting data and/or resources.

c. Attach any remote data and data analysis to the datasheet.

Step 5 **Describe rationale for location of OHWM:**

a. Why do the combination of indicators represent the OHWM?

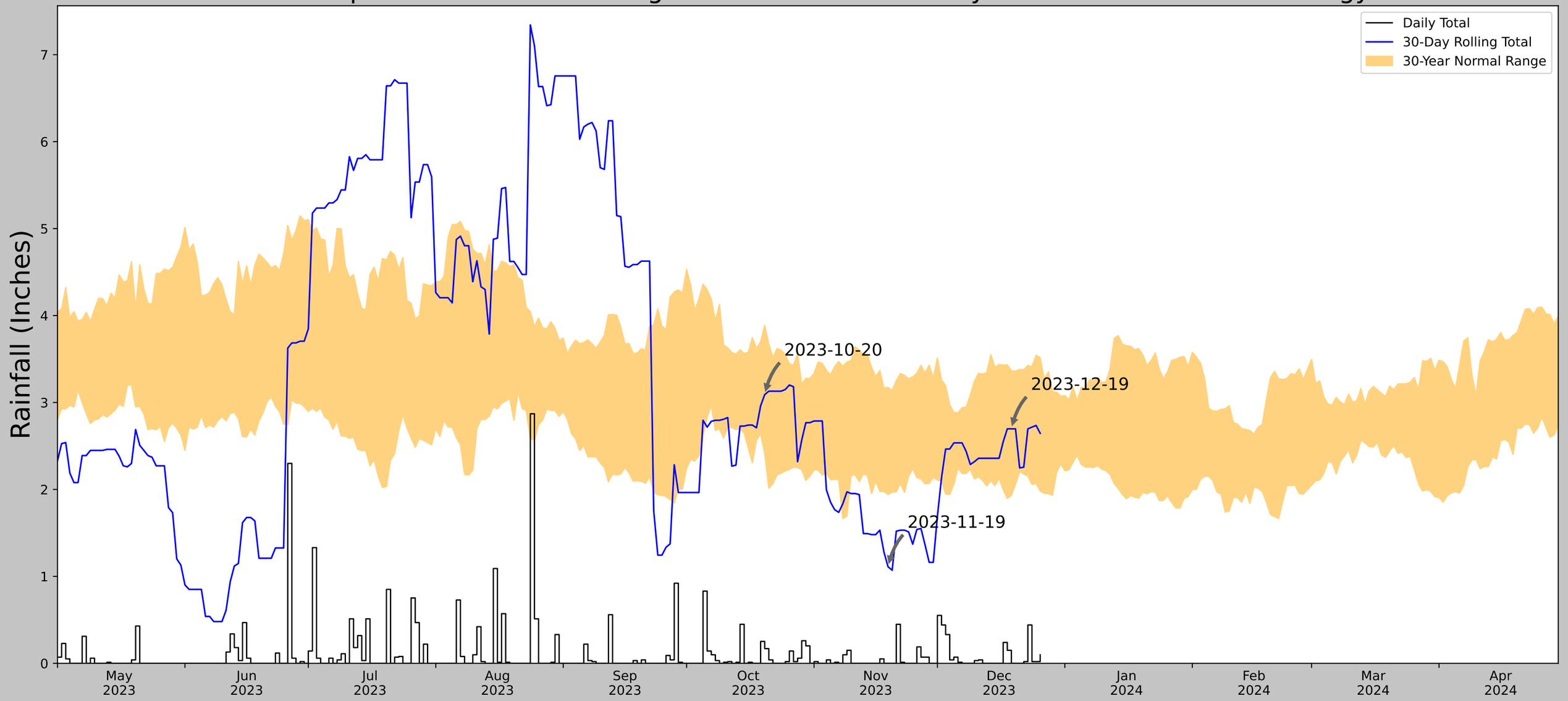
b. If there are multiple possibilities for the OHWM, explain why there are two (or more) possibilities. Include any relevant discussion on why specific indicators were not included in the final decision.

c. If needed, add additional site notes on page 2 of the datasheet under Step 5.

Appendix D

Antecedent Precipitation Tool Data

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



Coordinates	42.223892, -83.620973
Observation Date	2023-12-19
Elevation (ft)	746.307
Drought Index (PDSI)	Mild wetness (2023-11)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-12-19	1.932677	3.364961	2.69685	Normal	2	3	6
2023-11-19	1.940551	3.173228	1.110236	Dry	1	2	2
2023-10-20	2.415748	3.887402	3.090551	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

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
ANN ARBOR U OF MICH	42.2981, -83.6639	812.992	5.577	66.685	2.882	11352	90