



MARX
WETLANDS
LLC

December 22, 2021

Mr. Fareed Mojaradi
Atelier Architect, Inc.
(248) 790 1639

**Re: Wetland Determination Report: Hickey and Gratiot Avenue
Chesterfield Township, Macomb County, Michigan**

Dear Mr. Mojaradi:

Pursuant to your request, Marx Wetlands LLC (MW) conducted a wetland determination for the above-referenced 5.4-acre Site, project comprised of one parcel (Parcel 09-09-152-002) in section 9 of Chesterfield Township (T3N, 14E), Macomb County, Michigan ('Site'). See **Attachment 1**. The Site is located directly northeast of the intersection of Hickey Road and Gratiot Avenue.

The intent of this wetland determination is to provide a report of the character of any wetland areas within the Site and an opinion as to the possible jurisdiction of the Michigan Department of Energy, Great Lakes, and Environment (EGLE) and/or local governances over wetland areas identified on-site.

The wetland determination was performed in accordance with the Michigan Department of Environmental Quality Wetland Identification Manual (2001), the Northcentral-Northeast and Midwest Interim Regional Supplements to the 1987 U.S. Army Corps of Engineers Wetland Delineation Manual. The delineation of any wetland depends on three basic parameters. These parameters are: 1) the presence of hydrophytic vegetation (plants adapted to living in saturated soils), 2) hydric soils (distinctive soil types that develop under saturated conditions), and 3) wetland hydrology (the presence of water at or near the surface for a specific period of time). The above parameters are virtually always inter-related and present in wetland systems. The wetland delineation and determination consisted of desktop review of available background documentation and mapping followed by a site visit conducted on December 16, 2021. A review of the findings is provided below.

Background Research & Desktop Review

According to the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) *Web Soil Survey*, the Site contains four (4) main soil types: Del Rey loam, 0 to 2 percent slopes (DIA; 5% hydric rating), Fulton loam, 0 to 2 percent slopes (FuA; 5% hydric rating), Oakville fine sand (OkB; 3% hydric rating), and Toledo silty clay loam (Ts; 90% hydric rating). Approximately two (2) acres of the Site is mapped as Ts soil type, which is classified as hydric or contains hydric inclusions. Hydric soils are conducive to the growth and regeneration of hydrophytic vegetation by their ability to hold water for extended periods of time. The delineated wetland generally correspond to these areas mapped as hydric soils (**Enclosure 1A**).

The National Wetlands Inventory (NWI) map indicates no wetlands are likely present within the Site (**Enclosure 1B**).

9861 High Meadow Drive
Ypsilanti, Michigan 48198
Mobile: 734-478-8277
e-mail:
bg.marxwetlands@gmail.com

According to Macomb County's Drain Map (**Enclosure 1C**), no county drains appear to be within the Site boundaries.

Site Characteristics & Existing Conditions

Based on review of aerial photographs, available on-line resources, and on-site visit, the Site contains undeveloped land, consisting upland lawn/scrub-shrub and wetland. The upland lawn/scrub-shrub generally contained Callery pear (*Pyrus calleryana*), cottonwood (*Populus deltoides*), scattered with white ash (*Fraxinus americana*), American elm (*Ulmus americana*), and red-cedar (*Juniperus virginiana*) trees. Upland herbaceous species include strawberry (*Fragaria virginiana*), tall goldenrod (*Solidago altissima*), Queen's Anne's-lace (*Daucus carota*), white avens (*Geum canadense*), and bluegrasses (*Poa compressa* and *P. pratensis*). Upland shrub and vine species Eurasian honeysuckles (*Lonicera maackii* & *L. tatarica*), common privet (*Ligustrum vulgare*), autumn-olive (*Elaeagnus umbellata*), Virginia creeper (*Parthenocissus quinquefolia*), oriental bittersweet (*Celastrus orbiculatus*), and riverbank grape (*Vitis riparia*). Refer to the *Site Photographs Log* provided in **Enclosure 2**.

Wetland Determination & Delineation

One (1) wetland (Wetland A) was identified within the Site. Herbaceous vegetation dieback and a seasonally high groundwater table made the wetland boundary difficult to discern in areas. Refer to the enclosed *Wetland Location Map* for the approximate locations of the on-site wetland and Wetland Data Forms in **Enclosure 3**. Refer to *Table 1. Natural Features Table* (below), which includes feature name, type, and anticipated regulatory status for the on-site features.

Table 1. Natural Features Table

Feature Name	Feature Type	On-site Acreage	Regulated by the State of Michigan? †
Wetland A	Emergent/Scrub-shrub	2.16	Possible hydrologic connection to a regulating feature offsite

†EGLE has the final authority over the extent of streams, ponds, wetlands, and floodplains in the state of Michigan.

Wetlands

Vegetation

Wetland A is a primarily an emergent wetland identified within the Site, extending north off-site via a ditch-like feature. Prevalent herbaceous vegetation observed include reed canary grass (*Phalaris arundinacea*; FACW), purple loosestrife (*Lythrum salicaria*; OBL), greater bladder sedge (*Carex intumescens*; FACW), common reed (*Phragmites australis ssp. australis*; FACW), late goldenrod (*Solidago gigantea*; FACW) and soft rush (*Juncus effusus*; OBL). Scattered shrubs observed include false glossy buckthorn (*Frangula alnus*; FACW), silky dogwood (*Rhamnus cathartica*; FAC), and green ash (FACW). Vine species observed include poison-ivy (*Toxicodendron radicans*; FAC) and river-bank grape (FAC). Dominant trees species include black ash (*Fraxinus nigra*; FACW), green ash (FAC), and

American elm (FACW). The species identified within these wetlands range in wetland indicator statuses from obligate (OBL) to facultative (FAC), which indicates species that typically occur in wetlands.

Hydrology

Wetland hydrology indicators observed generally include standing water, water marks, saturation at surface, high-water table, water-stained leaves, geomorphic position, and FAC Neutral Test. The wetland appears to receive hydrology from precipitation, runoff from adjacent developed areas and roadways. The onsite wetland appears to range from seasonally saturated to seasonally inundated.

Soils

Soils within Wetland A contain a gray, brown matrix (e.g., 10YR 4/2) with orangey-reddish nodules (e.g., 10YR 4/6) within 12 inches of the ground surface, which is indicative for the hydric soil indicator – (Depleted Matrix; F3). These soils roughly corresponds with the USGS's NRCS county mapped as Toledo silty clay loam (Ts; 90% hydric/wetland soils). Refer to the *USACE Wetland Determination Data Forms* in **Enclosure 3**.

Regulations & Recommendations

Watercourse, Drain, and Floodplain Regulations

Part 301, Inland Lakes and Streams, states that a feature is considered a regulated watercourse by the EGLE if it possesses a defined bed, bank, and evidence of continued flow or a continued occurrence of water. **Based on the site visit, a channelized ditch-like feature was identified along the eastern site boundary; however, it was included as wetland due to the predominance of wetland vegetation. Therefore, it is not anticipated to be considered a regulated watercourse under Part 301.**

The Site does not appear to contain a county drain. Typically, county drains have an easement for construction and maintenance purposes and where development or structures are prohibited. **Therefore, be sure to contact the Macomb County Drain Commissioners office to confirm if the proposed site development requires any approvals or permits through Macomb County.**

Part 31, Water Resources Protection, of the NREPA regulates activities within the 100-year floodplain and floodway of a river, stream, or drain, and within the floodplain of any watercourse with an upstream drainage area of two square miles or larger. A Part 31 permit is required for construction within a regulated floodplain or floodway. MW's preliminary review of FEMA FIRM Panel No. 26099C0255G (effective on 09/29/2006) revealed that the Site appears to lie in an area mapped as Zone X (e.g., areas with minimal flood hazard). **A floodplain elevation request or pre-application meeting through the EGLE can assist with the project development process and/or floodplain permitting, if applicable.**

State and Local Wetland Regulations

Part 303, Wetlands Protection, of the NREPA states that if a wetland is five acres in size or larger and/or connected to or located within 500 feet of a river, stream, lake, or pond (regardless of natural or man-made), and within 1,000 feet of a Great Lake, it is considered regulated by the EGLE.

Marx Wetlands, LLC has the professional opinion that Wetland A may be considered regulated by the EGLE. Although the onsite wetland appears to be less than five (5) acres in size and further than 500 feet from a regulating feature (e.g., stream, ponds, lakes, etc.), Wetland A continues off-site via a ditch-line linear wetland and may also be hydrologically connected to off-site features such as Crandall Drain and/or its tributary. The western edge of Wetland A is approximately 550 feet away from Meldrum Drain (west of Gratiot Avenue).

Possible Hydrological Connection to Crandell Drain:

- Two (2) pipes were identified at Wetland A's southeast corner and at Hickey Road. One (1) pipe was identified at the southeast corner of the property, presumably draining east through a series of roadside ditches along the north side of Hickey Road, eventually draining into the Crandall Drain (off-site; approximately 0.50 mile east).
- A second pipe (west of first pipe) was identified at Hickey Road, which appeared to flow southward. It is unclear if this pipe ties into the stormwater system (existing manhole is west of pipe) or flows under Hickey Road into the roadside ditch system south of Hickey Road. *No outlet point was found south of Hickey Road.*

MW's professional opinion is based on the site reconnaissance and a review of available desktop resources (i.e., aerial imagery, topographic maps, county soils data, drain map, etc.). EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the State of Michigan. **Therefore, Marx Wetlands LLC recommends confirmation of this regulatory status by the EGLE. The EGLE has pre-application services to determine if a permit is needed for on-site development and/or a Wetland Identification Program (WIP) to determine whether there are regulated wetlands on a given property.**

According to the EGLE's MiWaters website (EGLE 2021), Chesterfield Township does not appear to have their own wetland protection ordinances. **However, please be sure to contact Chesterfield Township to determine if site development requires any local permits, approvals and/or wetland buffer setback requirements.**

A permit or approval is likely required by the EGLE for any proposed work that takes place within the boundaries of a regulated wetland. Most construction activities that take place outside of these boundaries do not require a wetland permit from the EGLE. **Please note that the EGLE has the final authority on the extent of regulated wetlands, lakes, and streams in the State of Michigan.**

Hickey and Gratiot Avenue

Chesterfield Township, Macomb County, MI

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Please be advised that the information provided in this report is a professional opinion. The ultimate decision on wetland boundary locations and jurisdiction thereof rests with the EGLE and/or local government, and, in some cases, the federal government. Therefore, there may be adjustments to boundaries based upon review by a regulatory agency. An agency determination can vary depending on various factors including, but not limited to, experience of the agency representative making the determination and the season of the year. Wetland evaluations performed outside the growing season from late-October/November until late-April may not be consistent with the official EGLE wetland assessment program and therefore are subject to increased potential for change than those performed during the growing season. The physical characteristics of the site can change over time, depending on the weather, vegetation patterns, drainage, activities on adjacent parcels, or other events. Any of these factors can change the nature and/or extent of wetlands on the site.

Thank you for the opportunity to provide this wetland delineation and determination. If you have any questions, please contact me at your convenience.

Sincerely,

Marx Wetlands LLC



Bryana J. Guevara, Principal

Professional Wetland Scientist #2949

ISA Certified Arborist #MI-4240A

Certified Ecologist, Ecological Society of America

Enclosures:

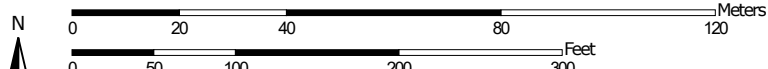
1. County Soils/Hydric Soils; National Wetlands Inventory (NWI) map, Macomb County Drain Map
2. Site Photographs
3. Wetland Location Map & Wetland Determination Data Forms
4. FEMA FIRM MAP

ENCLOSURE I

Hydric Rating by Map Unit—Macomb County, Michigan
(Hickey and Gratiot Avenue, MI)



Map Scale: 1:1,410 if printed on A portrait (8.5" x 11") sheet.




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



Hydric Rating by Map Unit—Macomb County, Michigan
(Hickey and Gratiot Avenue, MI)







MAP LEGEND

Area of Interest (AOI)







 Area of Interest (AOI)

Soils







Soil Rating Polygons

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


Soil Rating Lines

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






Soil Rating Points

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


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Macomb County, Michigan
Survey Area Data: Version 18, Sep 2, 2021

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

Date(s) aerial images were photographed: Dec 31, 2009—Mar 4, 2017

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
DIA	Del Rey loam, 0 to 2 percent slopes	5	1.1	19.0%
FuA	Fulton loam, 0 to 2 percent slopes	5	1.7	29.7%
OkB	Oakville fine sand, loamy substratum, 0 to 6 percent slopes	3	1.0	16.6%
Ts	Toledo silty clay loam	90	2.0	34.7%
Totals for Area of Interest			5.8	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.

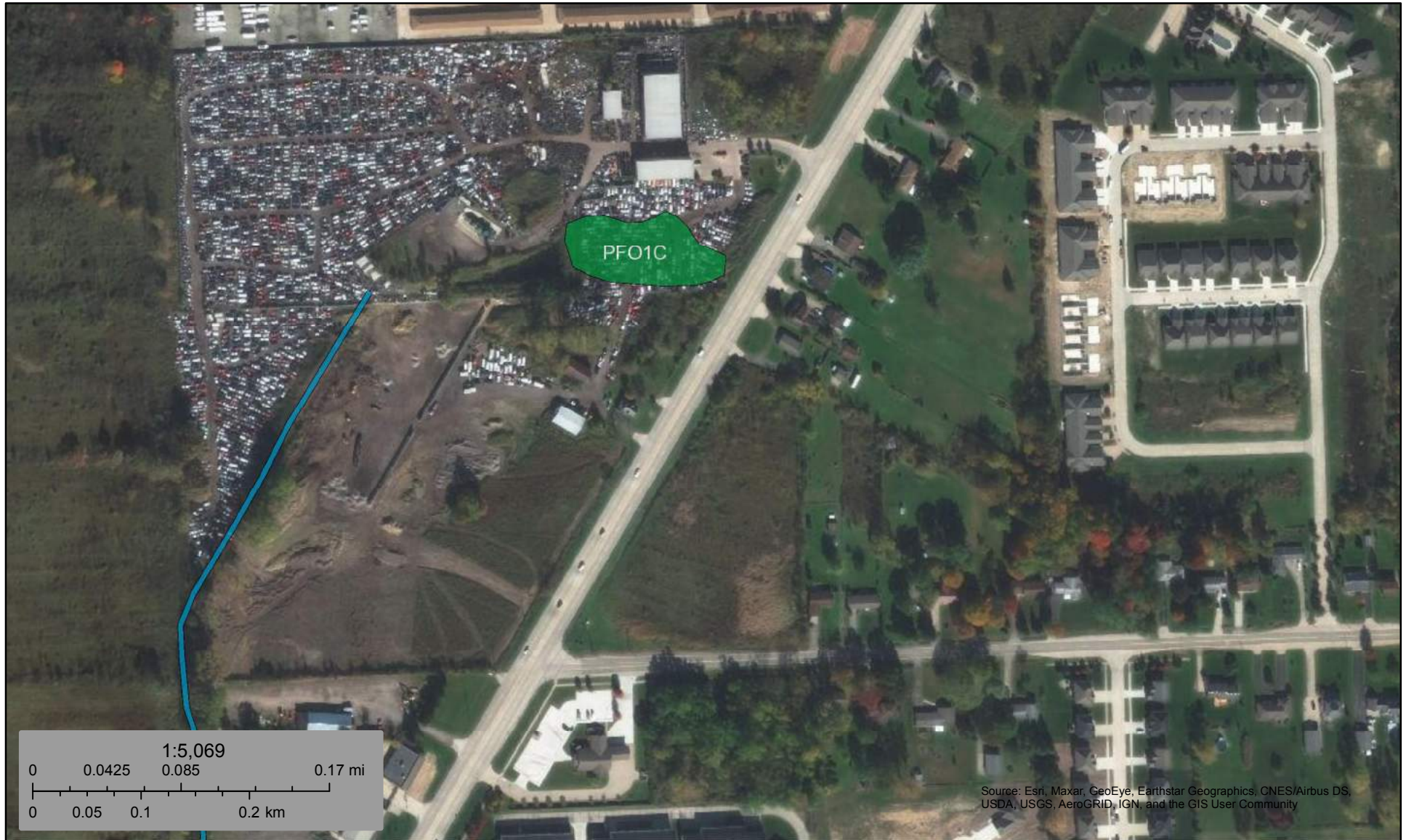
Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

Rating Options

Aggregation Method: Percent Present


Component Percent Cutoff: None Specified

Tie-break Rule: Lower



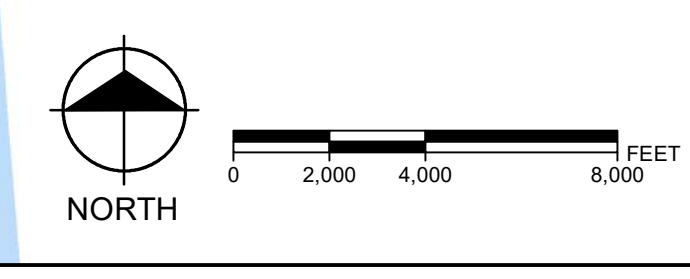
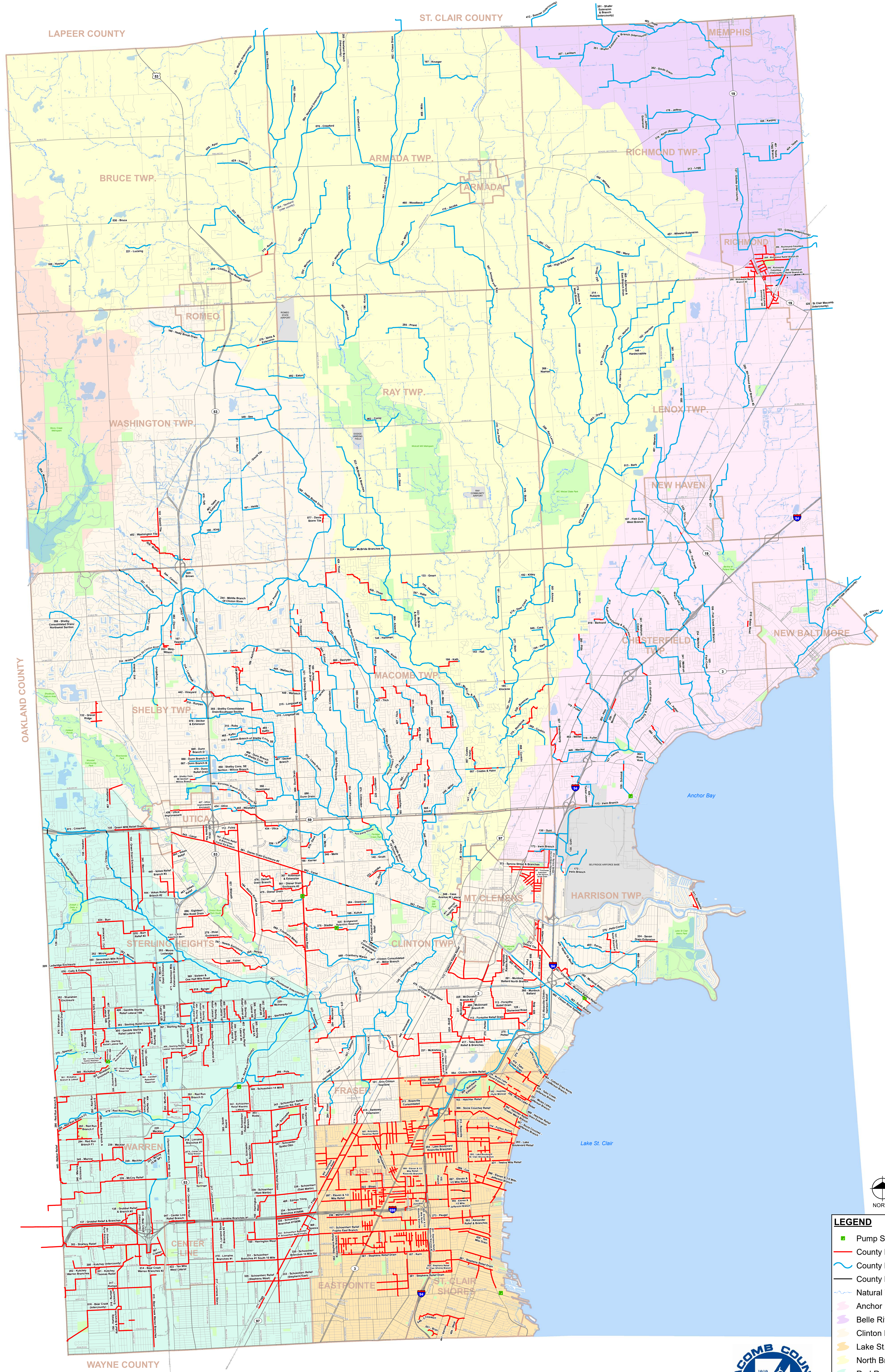
December 10, 2021

Wetlands

-  Estuarine and Marine Deepwater
-  Estuarine and Marine Wetland
-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Freshwater Pond
-  Lake
-  Other
-  Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

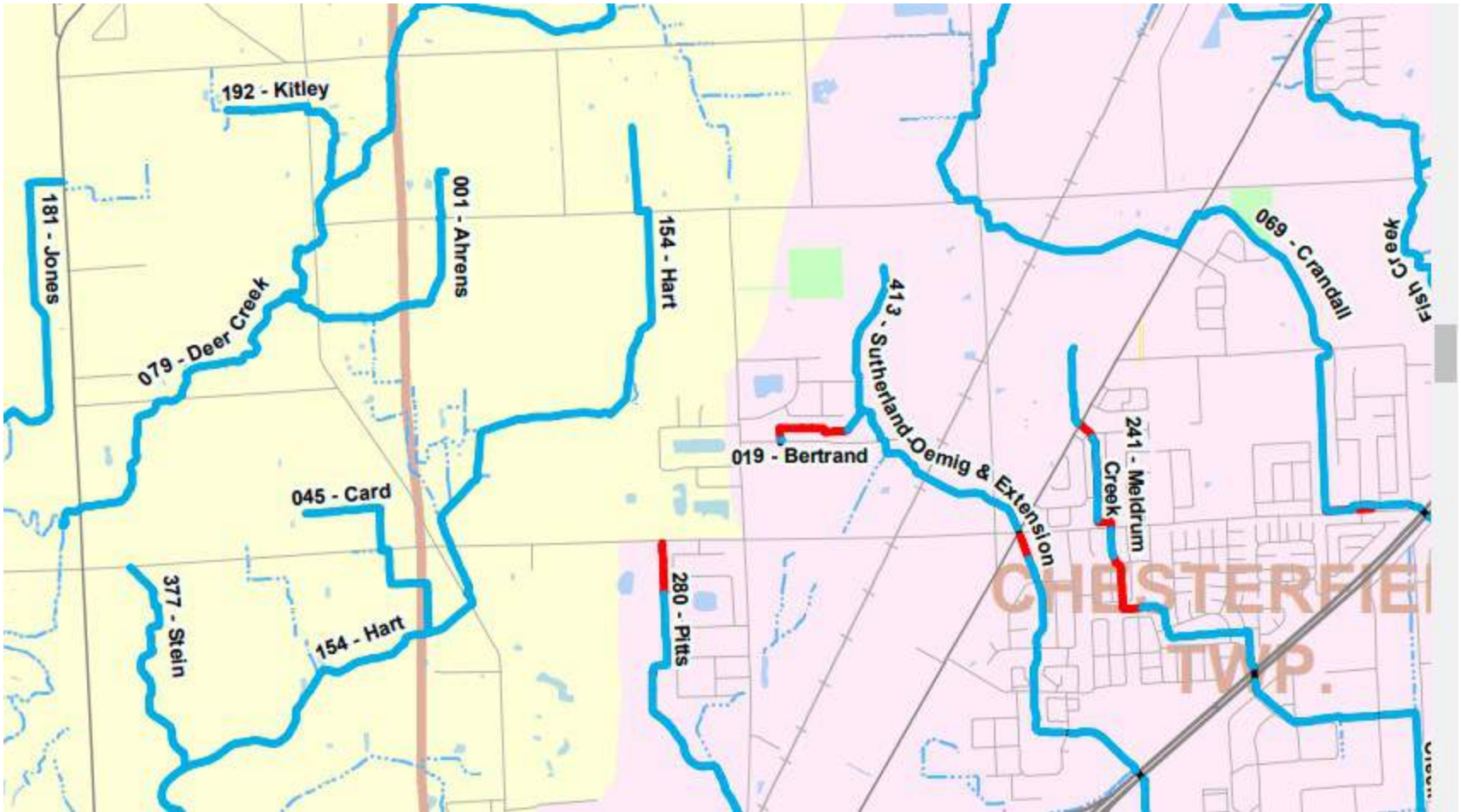
MACOMB COUNTY DRAIN MAP



LEGEND	
	Pump Station
	County Drain - Enclosed Gravity
	County Drain - Open Channel
	County Drain - Culvert
	Natural Watercourse
	Anchor Bay Watershed
	Belle River Watershed
	Clinton River East Subwatershed
	Lake St. Clair Drainage
	North Branch Subwatershed
	Red Run Subwatershed
	Stony Creek Subwatershed
	Municipal Limit



Candice S. Miller
MACOMB COUNTY PUBLIC WORKS COMMISSIONER



ENCLOSURE II

SITE PHOTOGRAPHS LOG



1) Typical Upland scrub-shrub.



2) Gratiot Avenue—Typical upland mowed lawn (Facing North).



3) South-facing view of southern site boundary along Hickey Road.



4) View of upland soils.

SITE PHOTOGRAPHS LOG



5) **Wetland A**- Emergent wetland portion in the southeast corner of the property.



6) Soil sampling plot within Wetland A. Saturation at surface.



7) Another view of **Wetland A**. Scattered trees and shrubs



8) Soil sampling plot within Wetland A.

SITE PHOTOGRAPHS LOG



9) View of a roadside pipe east of the wetland area.



10) Another pipe observed at the southern end of Wetland A, near Hickey Road.



11) Roadside ditch (south of Hickey Road).



12) Nearby manhole observed due west of pipe observed at Hickey Road.

ENCLOSURE III

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hickey and Gratiot Avenue City/County: Chesterfield Township/Macomb County Sampling Date: 12/16/2021
 Applicant/Owner: Atelier Architect, Inc. State: Michigan Sampling Point: USP.1
 Investigator(s): B. Guevara; Marx Wetlands LLC Section, Township, Range: S9; (T3N, 14E)
 Landform (hillslope, terrace, etc): Hillside Local relief (concave, convex, none): convex Slope (%): 5-10
 Subregion (LRR or MLRA): _____ Lat: 42.69799348 Long: -82.81339595 Datum: WGS 1984
 Soil Map Unit Name: Fulton loam, 0 to 2 percent slopes NWI classification: _____

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

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

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

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

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

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: USP.1

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30-foot radius</u>)				
1. <i>Pyrus calleryana</i> / Callery pear	10	Yes	NI	
2. <i>Elaeagnus umbellata</i> / Autumn olive	5	Yes	NI	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	15	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15-foot radius</u>)				
1. <i>Hypericum prolificum</i> / Shrubby st. john's-wort	20	Yes	FACU	
2. <i>Rubus allegheniensis</i> / Allegheny blackberry	10	Yes	FACU	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	30	= Total Cover		
Herb Stratum (Plot size: <u>5-foot radius</u>)				
1. <i>Poa compressa</i> / Canada blue grass, Canadian blue grass	20	Yes	FACU	
2. <i>Poa pratensis</i> / Kentucky blue grass	20	Yes	FACU	
3. <i>Solidago altissima</i> / Canada goldenrod	10	No	FACU	
4. <i>Dipsacus fullonum</i> / Wild teasel	5	No	FACU	
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	55	= Total Cover		
Woody Vine Stratum (Plot size: <u>30-foot radius</u>)				
1. <i>Vitis riparia</i> / River-bank grape	5	Yes	FAC	
2. _____				
3. _____				
4. _____				
	5	= 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: 7 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 14.3 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 0 x 1 = 0
 FACW species 0 x 2 = 0
 FAC species 5 x 3 = 15
 FACU species 85 x 4 = 340
 UPL species 15 x 5 = 75
 Column Totals: 105 (A) 430 (B)

 Prevalence Index = B/A = 4.1

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index ≤3.0'
 4 - Morphological Adaptations¹ (Provide supporting 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: (Explain alternative procedures here or in a separate report.)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hickey and Gratiot Avenue City/County: Chesterfield Township/Macomb County Sampling Date: 12/16/2021
 Applicant/Owner: Atelier Architect, Inc. State: Michigan Sampling Point: USP.A
 Investigator(s): B. Guevara; Marx Wetlands LLC Section, Township, Range: S9; (T3N, 14E)
 Landform (hillslope, terrace, etc): _____ Local relief (concave, convex, none): convex Slope (%): 10
 Subregion (LRR or MLRA): _____ Lat: 42.69714239 Long: -82.81476321 Datum: WGS 1984
 Soil Map Unit Name: Del Rey loam, 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 _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

HYDROLOGY

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

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: USP,A

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30-foot radius</u>)				
1. <u><i>Elaeagnus umbellata</i> / Autumn olive</u>	<u>10</u>	<u>Yes</u>	<u>NI</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
<u>10</u>	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15-foot radius</u>)				
1. <u><i>Elaeagnus umbellata</i> / Autumn olive</u>	<u>10</u>	<u>Yes</u>	<u>NI</u>	
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
<u>10</u>	= Total Cover			
Herb Stratum (Plot size: <u>5-foot radius</u>)				
1. <u><i>Poa pratensis</i> / Kentucky blue grass</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>	
2. <u><i>Solidago altissima</i> / Canada goldenrod</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	
3. <u><i>Pyrus calleryana</i> / Callery pear</u>	<u>10</u>	<u>No</u>	<u>NI</u>	
4. <u><i>Anemone virginiana</i> / Tall thimbleweed</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
5. <u><i>Dipsacus fullonum</i> / Wild teasel</u>	<u>10</u>	<u>No</u>	<u>FACU</u>	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
<u>70</u>	= Total Cover			
Woody Vine Stratum (Plot size: <u>30-foot radius</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
<u>0</u>	= Total Cover			

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>4</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0,0</u> (A/B)
Prevalence Index worksheet:	
Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>30</u>	x 5 = <u>150</u>
Column Totals: <u>90</u> (A)	<u>390</u> (B)
Prevalence Index = B/A = <u>4.33</u>	
Hydrophytic Vegetation Indicators:	
<u> </u> 1 - Rapid Test for Hydrophytic Vegetation	
<u> </u> 2 - Dominance Test is >50%	
<u> </u> 3 - Prevalence Index ≤3.0 ¹	
<u> </u> 4 - Morphological Adaptations ¹ (Provide supporting	
<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> </u> No <u>X</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Hickey and Gratiot Avenue City/County: Chesterfield Township/Macomb County Sampling Date: 12/16/2021
 Applicant/Owner: Atelier Architect, Inc. State: Michigan Sampling Point: WSPA
 Investigator(s): B. Guevara; Marx Wetlands LLC Section, Township, Range: S9; (T3N, 14E)
 Landform (hillslope, terrace, etc): Depression Local relief (concave, convex, none): concave Slope (%): 0-2
 Subregion (LRR or MLRA): _____ Lat: 42.69705324 Long: -82.81381194 Datum: WGS 1984
 Soil Map Unit Name: Toledo silty clay loam 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____ Wetland A
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input checked="" type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		<input checked="" type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks:			

VEGETATION - Use scientific names of plants.

Sampling Point: WSPA

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30-foot radius</u>)				
1. <i>Fraxinus nigra</i> / Black ash	15	Yes	FACW	
2. <i>Ulmus americana</i> / American elm	10	Yes	FACW	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	25	= Total Cover		
Sapling/Shrub Stratum (Plot size: <u>15-foot radius</u>)				
1. <i>Cornus amomum</i> / Silky dogwood	30	Yes	FACW	
2. <i>Fraxinus pennsylvanica</i> / Green ash	10	Yes	FACW	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	40	= Total Cover		
Herb Stratum (Plot size: <u>5-foot radius</u>)				
1. <i>Phalaris arundinacea</i> / Reed canarygrass, Reed canary gras	40	Yes	FACW	
2. <i>Phragmites australis ssp. australis</i> / European common reed	15	Yes	NI	
3. <i>Lythrum salicaria</i> / Purple loosestrife	10	No	OBL	
4. <i>Juncus effusus</i> / Common bog rush, Soft or lamp rush	10	No	OBL	
5. <i>Solidago gigantea</i> / Smooth goldenrod	10	No	FACW	
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
12. _____				
	85	= Total Cover		
Woody Vine Stratum (Plot size: <u>30-foot radius</u>)				
1. <i>Vitis riparia</i> / River-bank grape	10	Yes	FAC	
2. _____				
3. _____				
4. _____				
	10	= Total Cover		

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

 Total Number of Dominant Species Across All Strata: 7 (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7 (A/B)

Prevalence Index worksheet:
 Total % Cover of: _____ Multiply by: _____
 OBL species 20 x 1 = 20
 FACW species 115 x 2 = 230
 FAC species 10 x 3 = 30
 FACU species 0 x 4 = 0
 UPL species 15 x 5 = 75
 Column Totals: 160 (A) 355 (B)

 Prevalence Index = B/A = 2.22

Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test is >50%
 3 - Prevalence Index ≤3.0'
 4 - Morphological Adaptations¹ (Provide supporting 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

Remarks: (Explain alternative procedures here or in a separate report.)

ENCLOSURE IV

The flood map for the selected area is number **26099C0255G**, effective on **09/29/2006** [?](#)

DYNAMIC MAP



MAP IMAGE



Changes to this FIRM [?](#)

- Revisions (0)
- Amendments (6)
- Revalidations (2)

You can choose a new flood map or move the location pin by selecting a different location on the locator map below or by entering a new location in the search field above. It may take a minute or more during peak hours to generate a dynamic FIRMette. If you are a person with a disability, are blind, or have low vision, and need assistance, please contact a map specialist.

[Go To NFHL Viewer >](#)



Approximate location based on user input and does not represent an authoritative property location

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) Zone A, C, AE
- With BFE or Depth
- Non-Flooded (Unshaded) Zone A, C, AE, X, Y, Z

20.0 Cross Sections with 1% Annual Chance Water Surface Elevation

15.0 Coastal Transect

[Show](#)

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