

Wetland Delineation Report

Ian House Property

Town of Oshkosh | Winnebago County, Wisconsin

Prepared For

IAN HOUSE

KATIKATI, NEW ZEALAND

SEPTEMBER 29, 2017

McM. No. 10983-9-17-00709

SAB:

McMAHON
ENGINEERS ARCHITECTS

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September 29, 2017

Ms. Allison Willman
Wisconsin Department of Natural Resources
625 E County Road Y, Suite 700
Oshkosh, WI 54901

Re: Wetland Delineation Report
Ian House Property
Town of Oshkosh | Winnebago County, Wisconsin
McM. No. 10983-9-17-00709

Dear Ms. Willman:

Enclosed is the Wetland Delineation Report for the Ian House Property, Town of Oshkosh, Winnebago County, Wisconsin.

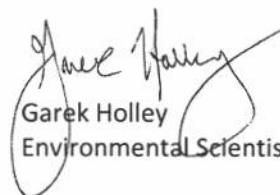
McMahon Associates, Inc. requests the Wisconsin Department of Natural Resources approval of the Wetland Delineation Report.

If you should have any further questions or comments, please feel free to contact me.

Respectfully,

McMahon Associates, Inc.


Stacey Caplan
Environmental Scientist


Garek Holley
Environmental Scientist

SAB

Enclosure: Wetland Delineation Report

Wetland Delineation Report

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TABLE OF CONTENTS

- I. INTRODUCTION
- II. METHODS
- III. RESULTS & DISCUSSION
- IV. CONCLUSIONS
- V. LITERATURE CITED

FIGURES

- Figure 1 Site Location & Topographic Map
- Figure 2 Winnebago County Soil Survey & WDNR Wetland Inventory Map
- Figure 3 Wetland Delineation Map

APPENDICES

- Appendix A COE Wetland Determination Data Forms
- Appendix B Wetland Photographs
- Appendix C Winnebago County Soil Resource Map & Soil Reports

Wetland Delineation Report

Ian House Property
Town of Oshkosh | Winnebago County, Wisconsin

Prepared For

IAN HOUSE
KATIKATI, NEW ZEALAND

SEPTEMBER 29, 2017
McM. No. I0983-9-17-00709

I. INTRODUCTION

The project objective was to delineate wetlands located on the Ian House property to determine the buildable area. The property address is 2947 Ryf Road. The project area is located in Section Thirty-two (32), Township Nineteen (19) North, Range Sixteen (16) East, Town of Oshkosh, Winnebago County, Wisconsin. The location of the project and regional topography is shown on Figure 1. The contact person and address for this project is provided below:

Ian House
255 Tuapiro Road
RD 3
Katikati 3170
Email: sailgb19@me.com

The Wetland Delineation was completed by Stacey Caplan, Environmental Scientist of McMahon Associates, Inc. (McMAHON) as lead delineator, and Garek Holley, Environmental Scientist of McMAHON. Mrs. Caplan and Mr. Holley have completed 38 hours of wetland delineation training that was sponsored by various regulatory agencies, including the Wisconsin Department of Natural Resources (DNR) and U.S. Army Corps of Engineers. Field work was completed on September 14, 2017.

This report consists of a description of the methods used, results, conclusions and supporting documentation.

II. METHODS

The Winnebago County Soil Survey Map and Wisconsin DNR Wetland Inventory Map are shown on Figure 2. The wetland and project area are shown on Figure 3.

The wetland delineation was performed using the routine determination method in the Corps of Engineers Wetland Delineation Manual, 1987 and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region, January 2012. Furthermore, the resource, "Field Indicators of Hydric Soils in the United States, A Guide for Identifying and Delineating Hydric Soils", Version 8.1, 2017 was also used for determining whether the soils were hydric. The report was prepared in accordance with document titled "Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources", March 4, 2015.

Percent cover was used to measure dominant species of vegetation. The sampling plots were a 5 foot radius for herbaceous plants, a 15 foot radius for shrubs and saplings, and a 30 foot radius for trees and woody vines. The "50/20 Rule" was used to determine the dominant species for each stratum.

Soil pits were completed in the field using a 16-inch spade shovel and a hand auger. Soil pits were dug to at least 20-inches in depth, unless refusal was encountered. Test pits were left open to observe hydrologic conditions and later backfilled when activities were completed.

The wetland boundary was delineated based upon changes in vegetation, soil, hydrology, topography and professional judgment. The following documents were reviewed to aid in characterizing the vegetation, soil and hydrology of the project area prior to field delineation activities.

- Winnebago County Soil Survey
- 7.5 Minute Series Topographic Map
- Wisconsin Wetland Inventory Map
- USDA Field Office Climate Data

A total of three transects were completed to delineate wetlands within the project area. A total of seven sampling points were documented using COE Wetland Determination Forms. Copies of the forms are presented in Appendix A. The wetland boundaries and test pits were marked with labeled pin flags. Each pin flag was subsequently surveyed. The points were then mapped using Geographic Information System (GIS) software to produce a wetland delineation map.

III. RESULTS & DISCUSSION

The project area is 3.6 acres. Photographs of the wetlands are presented in Appendix B. Three wetlands, a total of 2.21 acres were delineated.

A USDA Wetness Evaluation Table was used to determine antecedent precipitation. This USDA climate data provides a range of normal precipitation for each month. The actual monthly precipitation is compared with this range to determine wetness conditions at the time of the wetland delineation. The Oshkosh WETS station received 4.05-inches of precipitation in August, indicating normal conditions. 2.22-inches of precipitation was recorded in the month of July, indicating drier than normal conditions. In the month of June the station received 7.08-inches, indicating wetter than normal conditions. Based on this data, the period prior to the field work was normal.

Figure 2 shows the Wisconsin Wetland Inventory Map for the project area. The large majority of the project area is mapped as a forested wetland. Figure 2 also shows the Winnebago County Soil Survey Map. Soil Resource & Hydric Soil Reports are presented in Appendix C. The Soil Survey Map shows two (2) soil map units in the project area. The included map units are listed below:

- Manawa Silty Lay Loam, 0 to 3% Slopes (MaA) – This soil is somewhat poorly drained. The map unit hydric category is predominantly nonhydric. The cumulative percentage of components that meet the criteria for hydric soils is 4%. The soil is included on the County Hydric Soil list as possibly containing the hydric component Poygan as an inclusion in depressions.
- Udorthents, 0 to 3% Slopes (UoA) – This soil is somewhat poorly drained. The map unit hydric category is nonhydric. The cumulative percentage of components that meet the criteria for hydric soils is 0%. The soil is not included on the County Hydric Soil List.

During field work, the soils described above were not encountered. There was either no, or minimal topsoil at any of the test pits performed. At most test pit locations refusal was encountered before reaching 10-inches. A layer of red clay was present above the refusal. It appears the entire site was historically filled. Because of this, the wetland boundaries were largely delineated based on hydrology and vegetation.

Wetland 1 (2.05 acres) and Wetland 2 (6,491 S.F.) are forested wetlands dominated by *Fraxinus pennsylvanica*, *Salix nigra*, and *Populus deltoides*. The understory is largely barren, likely due to extended periods of inundation and saturation. In areas where the tree canopy was thinner, *Boehmeria cylindrical*, *Leersia virginica*, *Rhamnus cathartica*, and *Vitis riparia* were present. Hydrology indicators observed included moss trim lines (B16), Sparsely Vegetated Concave Surface (B8), Geomorphic Position (D2), and a positive FAC-Neutral Test (D5).

Wetland 3 (454 S.F.) is a forested wetland depression dominated by *Carex lacustris*. It appears Ryf road to the east and the gravel driveway to the north have created this pocket wetland.

The surrounding upland tree canopy was similar to that of the wetlands, but the understory was more vegetated, suggesting the areas were not inundated or saturated for extended

periods of time. Dominant vegetation in the understory included *Rhamnus cathartica*, *Acer negundo*, *Glechoma hederacea*, *Carex pensylvanica*, and *Geum aleppicum*. The general landscape positions were also convex, and it appeared water would shed off of these areas to the wetland areas.

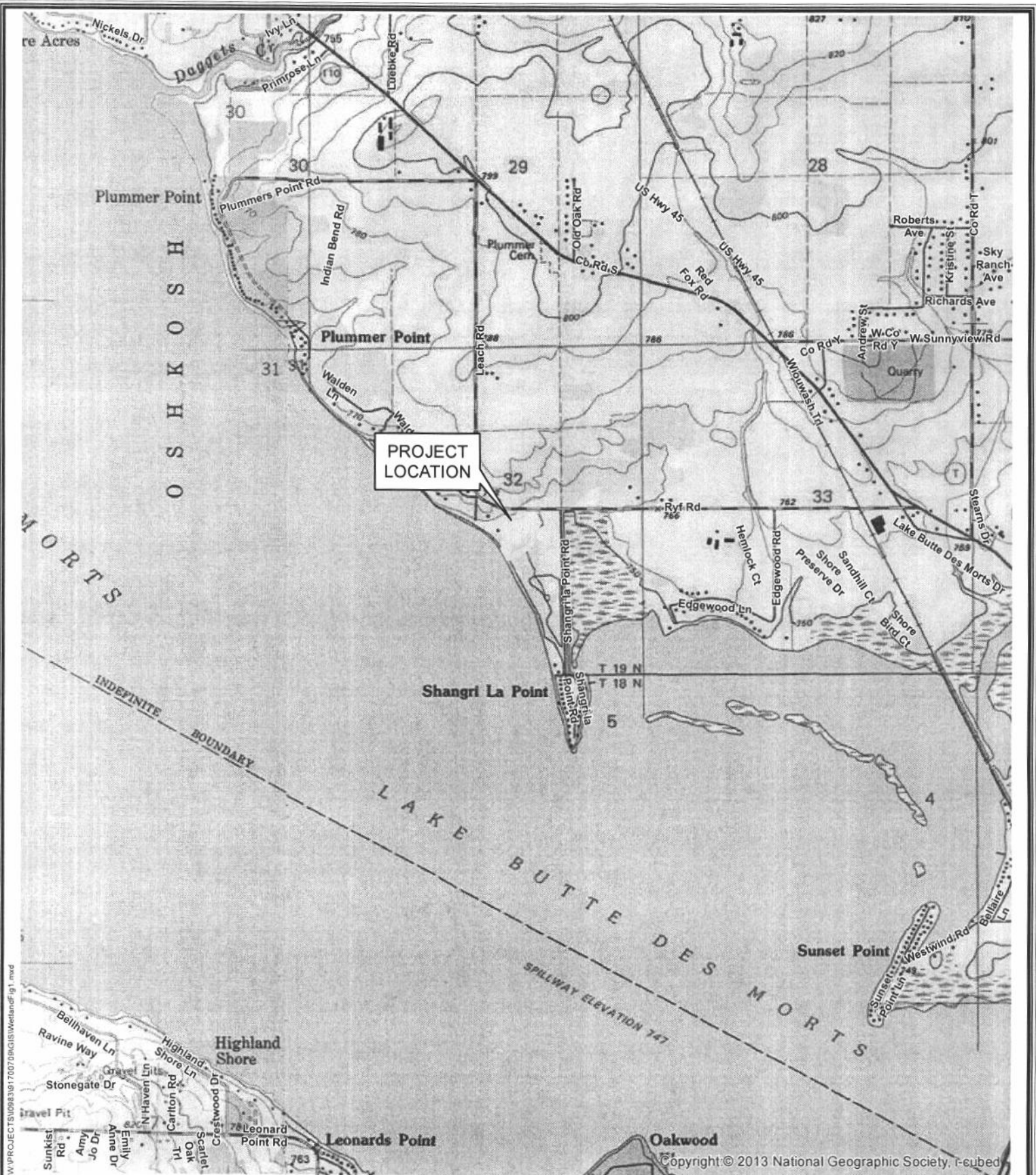
IV. CONCLUSIONS

McMAHON completed a wetland delineation for the Ian House Property to determine the buildable area of the lot. Three wetlands, a total of 2.21 acres were mapped within the 3.6 acre project area. The final authorities for the wetland area are the appropriate State and Federal authorities.

V. LITERATURE CITED

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1 inch = 2,000 feet

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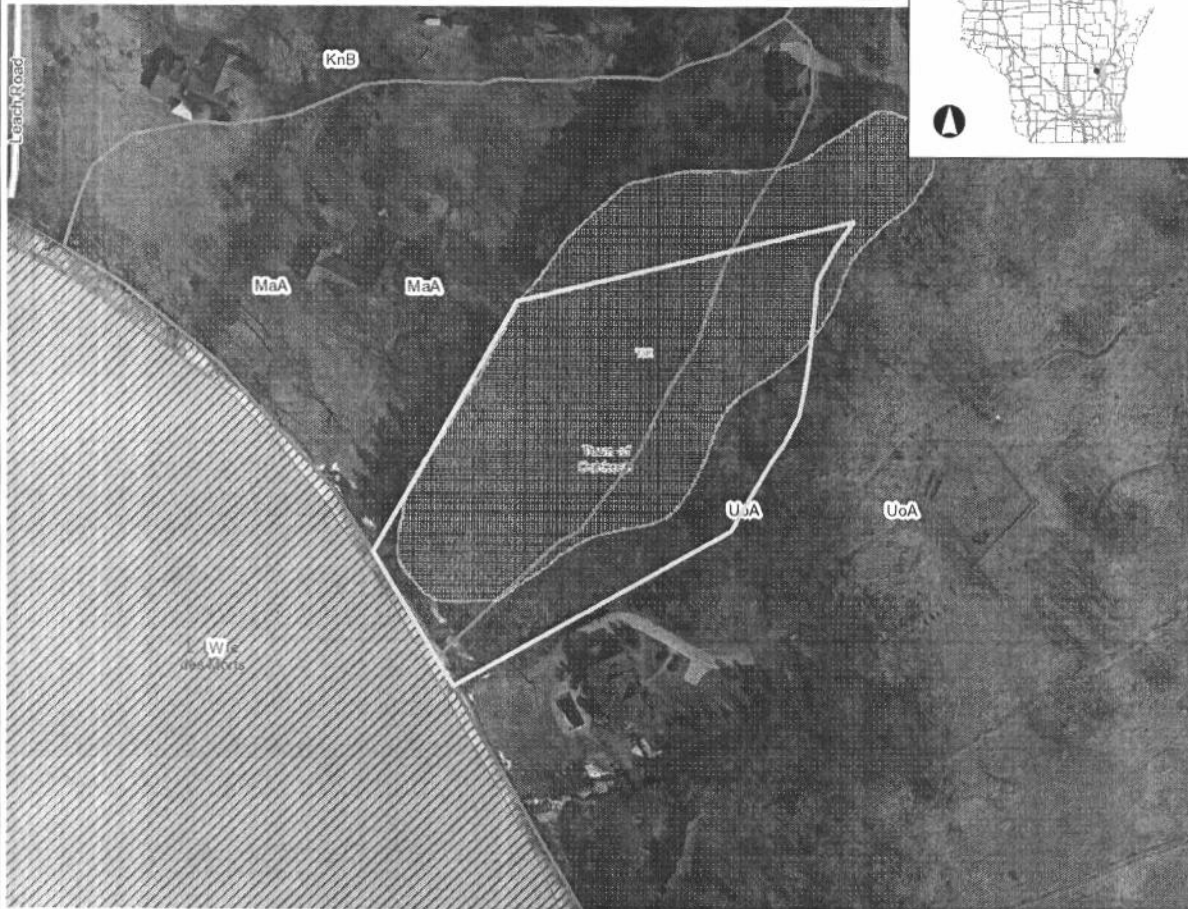
McMAHON
ENGINEERS ARCHITECTS
McMAHON ASSOCIATES, INC.

FIGURE 1
SITE LOCATION & TOPOGRAPHIC MAP
IAN HOUSE PROPERTY
TOWN OF OSHKOSH
WINNEBAGO COUNTY, WI

10983-9-17-00709.00 SEPTEMBER 2017



Figure 2: Winnebago County Soil Survey & Wetland Inventory



Legend

- Wetland Class Points**
 - Dammed pond
 - Excavated pond
 - Filled excavated pond
 - Filled/draind wetland
 - Wetland too small to delineate
- Filled Points**
- Wetland Class Areas**
 - Wetland
 - Upland
- Filled Areas**
- NRCS Wetspots**
- Wetland Indicators**
- NRCS Wisconsin Soils**
 - Soil Mapping Unit
 - Water
- Municipality**
- State Boundaries**
- County Boundaries**
- Major Roads**
 - Interstate Highway
 - State Highway
 - US Highway
- County and Local Roads**
 - County HWY
 - Local Road
- Railroads**
- Tribal Lands**
- Rivers and Streams**
- Intermittent Streams**
- Lakes and Open water**
- Index to EN_Image_Basemap_Leaf_Off**

Notes

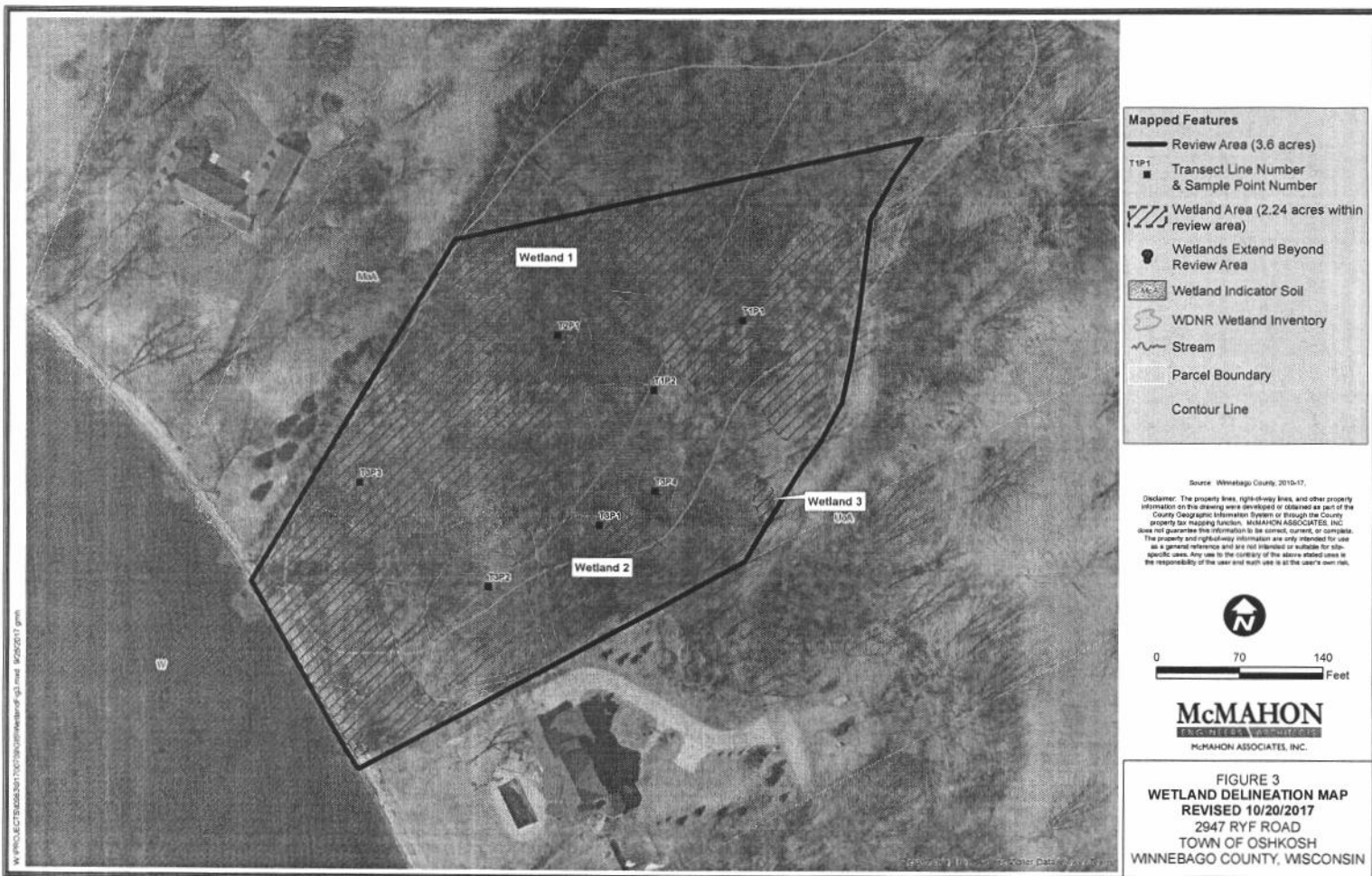
Figure 2: Winnebago County Soil Survey & Wetland Inventory, Ian House Property, Town of Oshkosh, Winnebago County, WI

0.1 0 0.03 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 1,980

DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: <http://dnr.wi.gov/legal/>



APPENDIX A

COE Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Ian House Property City/County: Oshkosh/Winnebago Sampling Date: 9/14/2017
 Applicant/Owner: Ian House State: WI Sampling Point: T1P1
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 32, T19N, R16E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: UoA NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	
Soil was previously filled	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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 <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) <input type="checkbox"/> Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Surface (B8)		Secondary Indicators (minimum of two required) <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 checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
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)		Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: T1P1

[illegible]

**Location: PL=Pore Lining, M=Matrix

Indicators for Problematic Hydric Soils:

- | | | |
|---|--|---|
| <input type="checkbox"/> Histisol (A1) | <input type="checkbox"/> Polyvalue Below Surface | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> (S8) (LRR R, MLRA 149B) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> (LRR R, MLRA 149B) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> (LRR K, L) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | | <input checked="" type="checkbox"/> Other (Explain in Remarks) |

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Test pit located in floodplain forest, and site was previously filled.

VEGETATION - Use scientific names of plants

Sampling Point: T1P1

Tree Stratum					50/20 Thresholds		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status		20%	50%
1	<i>Fraxinus pennsylvanica</i>	70	Y	FACW	Tree Stratum	20	49
2	<i>Populus deltoides</i>	20	Y	FAC	Sapling/Shrub Stratum	2	4
3	<i>Salix nigra</i>	5	N	OBL	Herb Stratum	0	1
4	<i>Acer negundo</i>	3	N	FAC	Woody Vine Stratum	1	3
5							
6							
7							
8							
9							
10		98	= Total Cover				

Sapling/Shrub Stratum					Dominance Test Worksheet		
Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>Rhamnus cathartica</i>	5	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)		
2	<i>Acer negundo</i>	3	Y	FAC	Total Number of Dominant Species Across all Strata: 5 (B)		
3					Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)		
4							
5							
6							
7							
8							
9							
10		8	= Total Cover				

Herb Stratum					Prevalence Index Worksheet		
Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>Fraxinus pennsylvanica</i>	2		FACW	Total % Cover of:		
2					OBL species 5 x 1 = 5		
3					FACW species 72 x 2 = 144		
4					FAC species 36 x 3 = 108		
5					FACU species 0 x 4 = 0		
6					UPL species 0 x 5 = 0		
7					Column totals 113 (A) 257 (B)		
8					Prevalence Index = B/A = 2.27		
9							
10							
11							
12							
13							
14							
15		2	= Total Cover				

Woody Vine Stratum					Hydrophytic Vegetation Indicators:		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>Vitis riparia</i>	5	Y	FAC	Rapid test for hydrophytic vegetation		
2					<input checked="" type="checkbox"/> Dominance test is >50%		
3					<input checked="" type="checkbox"/> Prevalence index is ≤3.0*		
4					Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)		
5					Problematic hydrophytic vegetation* (explain)		
					*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 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? Y		

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

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Ian House Property City/County: Oshkosh/Winnebago Sampling Date: 9/14/2017
 Applicant/Owner: Ian House State: WI Sampling Point: T1P2
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 32, T19N, R16E
 Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): convex
 Slope (%): 2 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: UoA NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	
Soil was previously filled	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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 <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) <input type="checkbox"/> Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)		Secondary Indicators (minimum of two required) <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 <input type="checkbox"/> (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
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)		Indicators of wetland hydrology present? <u>N</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: T1P2

[illegible]

**Location: PL=Pore Lining, M=Matrix

Indicators for Problematic Hydric Soils:

- | | | |
|---|--|---|
| <input type="checkbox"/> Histisol (A1) | <input type="checkbox"/> Polyvalue Below Surface | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> (S8) (LRR R, MLRA 149B) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> (LRR R, MLRA 149B) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> (LRR K, L) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | | <input type="checkbox"/> Other (Explain in Remarks) |

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

Hydrology does not support the formation of wetland soil

VEGETATION - Use scientific names of plants
Sampling Point: T1P2

Tree Stratum					50/20 Thresholds		
Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status		20%	50%	
1 <i>Fraxinus pennsylvanica</i>	90	Y	FACW	Tree Stratum	20	50	
2 <i>Populus deltoides</i>	5	N	FAC	Sapling/Shrub Stratum	12	30	
3 <i>Salix nigra</i>	5	N	OBL	Herb Stratum	8	19	
4				Woody Vine Stratum	1	3	
5							
6							
7							
8							
9							
10							
	100	= Total Cover					

Sapling/Shrub Stratum					Dominance Test Worksheet		
Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status				
1 <i>Rhamnus cathartica</i>	50	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC:	4	(A)	
2 <i>Acer negundo</i>	10	N	FAC	Total Number of Dominant Species Across all Strata:	4	(B)	
3				Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)	
4							
5							
6							
7							
8							
9							
10							
	60	= Total Cover					

Herb Stratum					Prevalence Index Worksheet		
Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status				
1 <i>Rhamnus cathartica</i>	30	Y	FAC	Total % Cover of:			
2 <i>Lonicera x bella</i>	5	N	FACU	OBL species	5	x 1 = 5	
3 <i>Parthenocissus quinquefolia</i>	3	N	FACU	FACW species	90	x 2 = 180	
4				FAC species	100	x 3 = 300	
5				FACU species	8	x 4 = 32	
6				UPL species	0	x 5 = 0	
7				Column totals	203	(A) 517 (B)	
8				Prevalence Index = B/A =	2.55		
9							
10							
11							
12							
13							
14							
15							
	38	= Total Cover					

Woody Vine Stratum					Hydrophytic Vegetation Indicators:		
Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status				
1 <i>Vitis riparia</i>	5	Y	FAC	<input checked="" type="checkbox"/> Rapid test for hydrophytic vegetation			
2				<input checked="" type="checkbox"/> Dominance test is >50%			
3				<input checked="" type="checkbox"/> Prevalence index is ≤3.0*			
4				Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)			
5				Problematic hydrophytic vegetation* (explain)			
	5	= Total Cover					

Definitions of Vegetation Strata:				
Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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? Y

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

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Ian House Property City/County: Oshkosh/Winnebago Sampling Date: 9/14/2017
 Applicant/Owner: Ian House State: WI Sampling Point: T2P1
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 32, T19N, R16E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: MaA NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	
Soil was previously filled	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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 <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) <input type="checkbox"/> Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)		Secondary Indicators (minimum of two required) <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 <input type="checkbox"/> (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
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)		Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: T2P1

[illegible]

****Location: PL=Pore Lining, M=Matrix**

Indicators for Problematic Hydric Soils:

- | | | |
|---|--|---|
| <input type="checkbox"/> Histisol (A1) | <input type="checkbox"/> Polyvalue Below Surface | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> (S8) (LRR R, MLRA 149B) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> (LRR R, MLRA 149B) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> (LRR K, L) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | | <input checked="" type="checkbox"/> Other (Explain in Remarks) |

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Soils are concave in a floodplain forest. The presence of hydrophytes defines the soil as hydric

VEGETATION - Use scientific names of plants
Sampling Point: T2P1

Tree Stratum					50/20 Thresholds		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status	20%	50%	
1	<i>Fraxinus pennsylvanica</i>	90	Y	FACW	Tree Stratum	20	
2	<i>Ulmus americana</i>	5	N	FACW	Sapling/Shrub Stratum	0	
3	<i>Salix nigra</i>	5	N	OBL	Herb Stratum	4	
4					Woody Vine Stratum	1	
5							
6							
7							
8							
9							
10							
		100	= Total Cover				

Sapling/Shrub Stratum					Dominance Test Worksheet		
Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status	Number of Dominant Species that are OBL, FACW, or FAC:		
1					4 (A)		
2					Total Number of Dominant Species Across all Strata: 4 (B)		
3					Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)		
4							
5							
6							
7							
8							
9							
10							
		0	= Total Cover				

Herb Stratum					Prevalence Index Worksheet		
Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status	Total % Cover of:		
1	<i>Boehmeria cylindrica</i>	15	Y	OBL	OBL species	20 x 1 = 20	
2	<i>Leersia virginica</i>	5	Y	FACW	FACW species	100 x 2 = 200	
3					FAC species	5 x 3 = 15	
4					FACU species	0 x 4 = 0	
5					UPL species	0 x 5 = 0	
6					Column totals	125 (A) 235 (B)	
7					Prevalence Index = B/A =	1.88	
8							
9							
10							
11							
12							
13							
14							
15							
		20	= Total Cover				

Woody Vine Stratum					Hydrophytic Vegetation Indicators:		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status	Rapid test for hydrophytic vegetation		
1	<i>Vitis riparia</i>	5	Y	FAC	<input checked="" type="checkbox"/> Dominance test is >50%		
2					<input checked="" type="checkbox"/> Prevalence index is ≤3.0*		
3					Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)		
4					Problematic hydrophytic vegetation* (explain)		
5					*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic		
		5	= Total Cover				

Woody Vine Stratum					Definitions of Vegetation Strata:		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status	Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
1	<i>Vitis riparia</i>	5	Y	FAC	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.		
2					Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.		
3					Woody vines - All woody vines greater than 3.28 ft in height.		
4							
5							
		5	= Total Cover				

Woody Vine Stratum					Hydrophytic vegetation present?		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status	Y		
1	<i>Vitis riparia</i>	5	Y	FAC			
2							
3							
4							
5							
		5	= Total Cover				

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

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Ian House Property City/County: Oshkosh/Winnebago Sampling Date: 9/14/2017
 Applicant/Owner: Ian House State: WI Sampling Point: T3P1
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 32, T19N, R16E
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: MaA NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	
Soil was previously filled	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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 <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) <input type="checkbox"/> Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input checked="" 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 checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
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)		Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: T3P1

[illegible]

**Location: PL=Pore Lining, M=Matrix

Indicators for Problematic Hydric Soils:

- | | | |
|--|---|---|
| <input type="checkbox"/> Histisol (A1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR R, MLRA 149B) | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR R, MLRA 149B) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) (LRR K, L) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) (LRR K, L) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | | <input checked="" type="checkbox"/> Other (Explain in Remarks) |

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Type: _____
Depth (inches): _____

Hydric soil present? Y

Soils are concave in a floodplain forest. The presence of hydrophytes defines the soil as hydric

VEGETATION - Use scientific names of plants
Sampling Point: T3P1

Tree Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Fraxinus pennsylvanica</i>					75	Y	FACW	
2	<i>Salix nigra</i>					20	N	OBL	
3	<i>Acer negundo</i>					10	N	FAC	
4									
5									
6									
7									
8									
9									
10									
						105	=	Total Cover	
Sapling/Shrub Stratum					Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Rhamnus cathartica</i>					5	Y	FAC	
2									
3									
4									
5									
6									
7									
8									
9									
10									
						5	=	Total Cover	
Herb Stratum					Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status
1	<i>Leersia virginica</i>					5	Y	FACW	
2	<i>Vitis riparia</i>					3	Y	FAC	
3	<i>Fraxinus pennsylvanica</i>					3	Y	FACW	
4	<i>Rhamnus cathartica</i>					3	Y	FAC	
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
						14	=	Total Cover	
Woody Vine Stratum					Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status
1									
2									
3									
4									
5									
						0	=	Total Cover	

50/20 Thresholds

	20%	50%
Tree Stratum	21	53
Sapling/Shrub Stratum	1	3
Herb Stratum	3	7
Woody Vine Stratum	0	0

Dominance Test Worksheet
 Number of Dominant Species that are OBL, FACW, or FAC: 6 (A)
 Total Number of Dominant Species Across all Strata: 6 (B)
 Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet
 Total % Cover of:
 OBL species 20 x 1 = 20
 FACW species 83 x 2 = 166
 FAC species 21 x 3 = 63
 FACU species 0 x 4 = 0
 UPL species 0 x 5 = 0
 Column totals 124 (A) 249 (B)
 Prevalence Index = B/A = 2.01

Hydrophytic Vegetation Indicators:
☐ Rapid test for hydrophytic vegetation
☒ Dominance test is >50%
☒ Prevalence index is ≤3.0*
 Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
☐ Problematic hydrophytic vegetation* (explain)
*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 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? Y

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

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Ian House Property City/County: Oshkosh/Winnebago Sampling Date: 9/14/2017
 Applicant/Owner: Ian House State: WI Sampling Point: T3P2
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 32, T19N, R16E
 Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): convex
 Slope (%): 2 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: MaA NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	
If yes, optional wetland site ID: _____	
Remarks: (Explain alternative procedures here or in a separate report.)	
Soil was previously filled	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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 <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) <input type="checkbox"/> Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)		Secondary Indicators (minimum of two required) <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 <input type="checkbox"/> (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
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)		Indicators of wetland hydrology present? <u>N</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: T3P2

[illegible]

**Location: PL=Pore Lining, M=Matrix

Indicators for Problematic Hydric Soils:

- | | | |
|---|---|--|
| <input type="checkbox"/> Histisol (A1) | <input type="checkbox"/> Polyvalue Below Surface | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> (S8) (LRR R, MLRA 149B) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> (LRR R, MLRA 149B) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> (LRR K, L) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | | <input type="checkbox"/> Other (Explain in Remarks) |

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Type: _____
Depth (inches): _____

Hydric soil present? N

Remarks:

VEGETATION - Use scientific names of plants
Sampling Point: T3P2

Tree Stratum					50/20 Thresholds		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status		20%	50%
1	<i>Acer negundo</i>	70	Y	FAC	Tree Stratum	21	54
2	<i>Fraxinus pennsylvanica</i>	30	Y	FACW	Sapling/Shrub Stratum	0	0
3	<i>Salix nigra</i>	5	N	OBL	Herb Stratum	24	60
4	<i>Catalpa speciosa</i>	2	N	FACU	Woody Vine Stratum	0	0
5							
6							
7							
8							
9							
10							
		107	= Total Cover				
Sapling/Shrub Stratum					Dominance Test Worksheet		
Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status	Number of Dominant Species that are OBL, FACW, or FAC: <u>2</u> (A)		
1					Total Number of Dominant Species Across all Strata: <u>4</u> (B)		
2					Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)		
3							
4							
5							
6							
7							
8							
9							
10							
		0	= Total Cover				
Herb Stratum					Prevalence Index Worksheet		
Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status	Total % Cover of:		
1	<i>Glechoma hederacea</i>	60	Y	FACU	OBL species <u>5</u> x 1 = <u>5</u>		
2	<i>Carex pensylvanica</i>	40	Y	UPL	FACW species <u>30</u> x 2 = <u>60</u>		
3	<i>Geum aleppicum</i>	10	N	FAC	FAC species <u>90</u> x 3 = <u>270</u>		
4	<i>Carex blanda</i>	5	N	FAC	FACU species <u>62</u> x 4 = <u>248</u>		
5	<i>Rhamnus cathartica</i>	5	N	FAC	UPL species <u>40</u> x 5 = <u>200</u>		
6					Column totals <u>227</u> (A) <u>783</u> (B)		
7					Prevalence Index = B/A = <u>3.45</u>		
8							
9							
10							
11							
12							
13							
14							
15							
		120	= Total Cover				
Woody Vine Stratum					Hydrophytic Vegetation Indicators:		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status	<input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input type="checkbox"/> Prevalence index is ≤3.0* <input type="checkbox"/> Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)		
1					*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic		
2							
3							
4							
5							
		0	= Total Cover				
Woody Vine Stratum					Definitions of Vegetation Strata:		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status	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 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft in height.		
1							
2							
3							
4							
5							
		0	= Total Cover				
Hydrophytic vegetation present? <u>N</u>							

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

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Ian House Property City/County: Oshkosh/Winnebago Sampling Date: 9/14/2017
 Applicant/Owner: Ian House State: WI Sampling Point: T3P3
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 32, T19N, R16E
 Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave
 Slope (%): 0-1 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: MaA NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u>
Hydric soil present? <u>Y</u>	
Indicators of wetland hydrology present? <u>Y</u>	
Remarks: (Explain alternative procedures here or in a separate report.)	
Soil was previously filled	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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 <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) <input type="checkbox"/> Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input checked="" type="checkbox"/> Surface (B8)		Secondary Indicators (minimum of two required) <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 checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
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)		Indicators of wetland hydrology present? <u>Y</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

Sampling Point: T3P3

[illegible]

**Location: PL=Pore Lining, M=Matrix

Indicators for Problematic Hydric Soils:

- | | | |
|---|---|--|
| <input type="checkbox"/> Histisol (A1) | <input type="checkbox"/> Polyvalue Below Surface | <input type="checkbox"/> 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> (S8) (LRR R, MLRA 149B) | <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) | <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> (LRR R, MLRA 149B) | <input type="checkbox"/> Dark Surface (S7) (LRR K, L) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Polyvalue Below Surface (S8) (LRR K, L) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> (LRR K, L) | <input type="checkbox"/> Thin Dark Surface (S9) (LRR K, L) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 149B) |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Depleted Dark Surface (F7) | <input type="checkbox"/> Red Parent Material (F21) |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Redox Depressions (F8) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Dark Surface (S7) (LRR R, MLRA 149B) | | <input checked="" type="checkbox"/> Other (Explain in Remarks) |

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Y

Remarks:

Test pit in a floodplain forest that supports a dominance of hydrophytes.

VEGETATION - Use scientific names of plants
Sampling Point: T3P3

Tree Stratum					50/20 Thresholds		
Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status		20%	50%	
1 <i>Acer negundo</i>	70	Y	FAC	Tree Stratum	17	43	
2 <i>Fraxinus pennsylvanica</i>	10	N	FACW	Sapling/Shrub Stratum	0	0	
3 <i>Salix nigra</i>	5	N	OBL	Herb Stratum	1	2	
4				Woody Vine Stratum	2	5	
5							
6							
7							
8							
9							
10							
	85	= Total Cover					

Sapling/Shrub Stratum					Dominance Test Worksheet		
Plot Size (15)	Absolute % Cover	Dominant Species	Indicator Status				
1				Number of Dominant Species that are OBL, FACW, or FAC:	2	(A)	
2				Total Number of Dominant Species Across all Strata:	2	(B)	
3				Percent of Dominant Species that are OBL, FACW, or FAC:	100.00%	(A/B)	
4							
5							
6							
7							
8							
9							
10							
	0	= Total Cover					

Herb Stratum					Prevalence Index Worksheet		
Plot Size (5)	Absolute % Cover	Dominant Species	Indicator Status				
1 <i>Rhamnus cathartica</i>	3		UPL	Total % Cover of:			
2				OBL species	5	x 1 = 5	
3				FACW species	10	x 2 = 20	
4				FAC species	83	x 3 = 249	
5				FACU species	0	x 4 = 0	
6				UPL species	0	x 5 = 0	
7				Column totals	98	(A) 274 (B)	
8				Prevalence Index = B/A =	2.80		
9							
10							
11							
12							
13							
14							
15							
	3	= Total Cover					

Woody Vine Stratum					Hydrophytic Vegetation Indicators:		
Plot Size (30)	Absolute % Cover	Dominant Species	Indicator Status				
1 <i>Vitis riparia</i>	10	Y	FAC	<input checked="" type="checkbox"/> Rapid test for hydrophytic vegetation			
2				<input checked="" type="checkbox"/> Dominance test is >50%			
3				<input checked="" type="checkbox"/> Prevalence index is ≤3.0*			
4				Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)			
5				Problematic hydrophytic vegetation* (explain)			
	10	= Total Cover		*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 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? <u>Y</u>				

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

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Ian House Property City/County: Oshkosh/Winnebago Sampling Date: 9/14/2017
 Applicant/Owner: Ian House State: WI Sampling Point: T3P4
 Investigator(s): Stacey Henk, Garek Holley Section, Township, Range: Sec 32, T19N, R16E
 Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): convex
 Slope (%): 3 Lat.: _____ Long.: _____ Datum: _____
 Soil Map Unit Name: UoA NWI Classification: _____
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? Are "normal
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? circumstances" present? Yes
 (If needed, explain any answers in remarks)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>N</u>
Hydric soil present? <u>N</u>	
Indicators of wetland hydrology present? <u>N</u>	
If yes, optional wetland site ID: _____	
Remarks: (Explain alternative procedures here or in a separate report.)	
Soil was previously filled	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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 <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Roots (C3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Recent Iron Reduction in Tilled <input type="checkbox"/> Inundation Visible on Aerial <input type="checkbox"/> Soils (C6) <input type="checkbox"/> Imagery (B7) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Sparsely Vegetated Concave <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Surface (B8)		Secondary Indicators (minimum of two required) <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 <input type="checkbox"/> (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Microtopographic Relief (D4)
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)		Indicators of wetland hydrology present? <u>N</u>
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

SOIL

Sampling Point: T3P4

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

[illegible]

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (LRR R, MLRA 149B)

Indicators for Problematic Hydric Soils:

Polyvalue Below Surface
 (S8) (LRR R, MLRA 149B)
 Thin Dark Surface (S9)
 (LRR R, MLRA 149B)
 Loamy Mucky Mineral (F1)
 (LRR K, L)
 Loamy Gleyed Matrix (F2)
 Depleted Matrix (F3)
 Redox Dark Surface (F6)
 Depleted Dark Surface (F7)
 Redox Depressions (F8)

☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
☐ Coast Prairie Redox (A16) (LRR K, L, R)
☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
☐ Dark Surface (S7) (LRR K, L)
☐ Polyvalue Below Surface (S8) (LRR K, L)
☐ Thin Dark Surface (S9) (LRR K, L)
☐ Iron-Manganese Masses (F12) (LRR K, L, R)
☐ Piedmont Floodplain Soils (F19) (MLRA 149B)
☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
☐ Red Parent Material (F21)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? N

Remarks:

VEGETATION - Use scientific names of plants
Sampling Point: T3P4

Tree Stratum					50/20 Thresholds		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status	20%	50%	
1	<i>Acer negundo</i>	60	Y	FAC	21	53	
2	<i>Fraxinus pennsylvanica</i>	40	Y	FACW	2	5	
3	<i>Salix nigra</i>	5	N	OBL	9	22	
4					2	5	
5							
6							
7							
8							
9							
10							
		105	= Total Cover				

Sapling/Shrub Stratum					Dominance Test Worksheet		
Plot Size (15)		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>Rhamnus cathartica</i>	10	Y	FAC	Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)		
2					Total Number of Dominant Species Across all Strata: 5 (B)		
3					Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)		
4							
5							
6							
7							
8							
9							
10							
		10	= Total Cover				

Herb Stratum					Prevalence Index Worksheet		
Plot Size (5)		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>Geum aleppicum</i>	30	Y	FAC	Total % Cover of:		
2	<i>Fraxinus pennsylvanica</i>	5	N	FACW	OBL species 5 x 1 = 5		
3	<i>Rhamnus cathartica</i>	3	N	FAC	FACW species 45 x 2 = 90		
4	<i>Parthenocissus quinquefolia</i>	3	N	FACU	FAC species 113 x 3 = 339		
5	<i>Lonicera x bella</i>	2	N	FACU	FACU species 5 x 4 = 20		
6					UPL species 0 x 5 = 0		
7					Column totals 168 (A) 454 (B)		
8					Prevalence Index = B/A = 2.70		
9							
10							
11							
12							
13							
14							
15							
		43	= Total Cover				

Woody Vine Stratum					Hydrophytic Vegetation Indicators:		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>Vitis riparia</i>	10	Y	FAC	Rapid test for hydrophytic vegetation		
2					<input checked="" type="checkbox"/> Dominance test is >50%		
3					<input checked="" type="checkbox"/> Prevalence index is ≤3.0*		
4					Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)		
5					Problematic hydrophytic vegetation* (explain)		
		10	= Total Cover		*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic		

Woody Vine Stratum					Definitions of Vegetation Strata:		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>Vitis riparia</i>	10	Y	FAC	Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.		
2					Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.		
3					Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.		
4					Woody vines - All woody vines greater than 3.28 ft in height.		
5							
		10	= Total Cover				

Woody Vine Stratum					Hydrophytic vegetation present?		
Plot Size (30)		Absolute % Cover	Dominant Species	Indicator Status			
1	<i>Vitis riparia</i>	10	Y	FAC	Y		
2							
3							
4							
5							
		10	= Total Cover				

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

APPENDIX B

Wetland Photographs



Photo 1: Viewing Wetland 1 near T1P2



Photo 2: Moss trim lines near T1P1



Photo 3: Viewing north towards Wetland 1 near west end of project area



Photo 4: Viewing east at upland driveway



Photo 5: Viewing south towards T3P1



Photo 6: Viewing west towards T3P2



Photo 7: Viewing north toward Wetland 1 boundary near T3P3



Photo 8: Viewing at Wetland 2 where it intersects the driveway

APPENDIX C

Winnebago County Soil Resource Map & Soil Reports



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

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

Custom Soil Resource Report for **Winnebago County, Wisconsin**



September 28, 2017

Preface

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

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

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

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

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

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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

Preface.....	2
Soil Map.....	5
Soil Map.....	6
Legend.....	7
Map Unit Legend.....	8
Map Unit Descriptions.....	8
Winnebago County, Wisconsin.....	10
MaA—Manawa silty clay loam, 0 to 3 percent slopes.....	10
UoA—Udorthents, 0 to 3 percent slopes.....	11
W—Water greater than 40 acres.....	12
Soil Information for All Uses.....	13
Soil Properties and Qualities.....	13
Soil Qualities and Features.....	13
Drainage Class.....	13
Soil Reports.....	17
Land Classifications.....	17
Hydric Rating by Map Unit (WI).....	17
Hydric Soils.....	19
References.....	22

Soil Map


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

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

	Area of Interest (AOI)		Spoil Area
	Soil Map Unit Polygons		Stony Spot
	Soil Map Unit Lines		Very Stony Spot
	Soil Map Unit Points		Wet Spot
	Special Point Features		Other
	Blowout		Special Line Features
	Borrow Pit		Water Features
	Clay Spot		Streams and Canals
	Closed Depression		Transportation
	Gravel Pit		Rails
	Gravelly Spot		Interstate Highways
	Landfill		US Routes
	Lava Flow		Major Roads
	Marsh or swamp		Local Roads
	Mine or Quarry		Background
	Miscellaneous Water		Aerial Photography
	Perennial Water		
	Rock Outcrop		
	Saline Spot		
	Sandy Spot		
	Severely Eroded Spot		
	Sinkhole		
	Slide or Slip		
	Sodic Spot		

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: Winnebago County, Wisconsin
Survey Area Data: Version 13, Sep 28, 2016

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

Date(s) aerial images were photographed: Jun 16, 2011—Mar 11, 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.

Map Unit Legend

Winnebago County, Wisconsin (WI139)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MaA	Manawa silty clay loam, 0 to 3 percent slopes	1.9	53.8%
UoA	Udorthents, 0 to 3 percent slopes	1.7	46.1%
W	Water greater than 40 acres	0.0	0.0%
Totals for Area of Interest		3.6	100.0%

Map Unit Descriptions

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

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

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

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The

Custom Soil Resource Report

delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

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

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

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

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

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

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

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

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

Winnebago County, Wisconsin

MaA—Manawa silty clay loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2t732
Elevation: 730 to 1,000 feet
Mean annual precipitation: 29 to 34 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 135 to 194 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Manawa and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Manawa

Setting

Landform: Drainageways
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Clayey till over calcareous, dense clayey till

Typical profile

Ap - 0 to 9 inches: silty clay loam
Bt - 9 to 35 inches: silty clay
Cd - 35 to 79 inches: silty clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 31 to 36 inches to densic material
Natural drainage class: Somewhat poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 7 to 24 inches
Frequency of flooding: Rare
Frequency of ponding: Occasional
Calcium carbonate, maximum in profile: 30 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Hydric soil rating: No

Custom Soil Resource Report

Minor Components

Kewaunee

Percent of map unit: 6 percent
Landform: Ground moraines
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Poygan

Percent of map unit: 4 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

UoA—Udorthents, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: g5zp
Elevation: 730 to 1,000 feet
Mean annual precipitation: 28 to 34 inches
Mean annual air temperature: 43 to 46 degrees F
Frost-free period: 135 to 155 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Typical profile

H1 - 0 to 10 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat poorly drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: About 20 to 39 inches
Frequency of flooding: None
Frequency of ponding: None

Custom Soil Resource Report

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: C

Hydric soil rating: No

W—Water greater than 40 acres

Map Unit Setting

National map unit symbol: g5zq

Elevation: 730 to 1,000 feet

Mean annual precipitation: 28 to 34 inches

Mean annual air temperature: 43 to 46 degrees F

Frost-free period: 135 to 155 days

Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent

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

Description of Water

Properties and qualities

Frequency of flooding: Very frequent

Frequency of ponding: Frequent

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

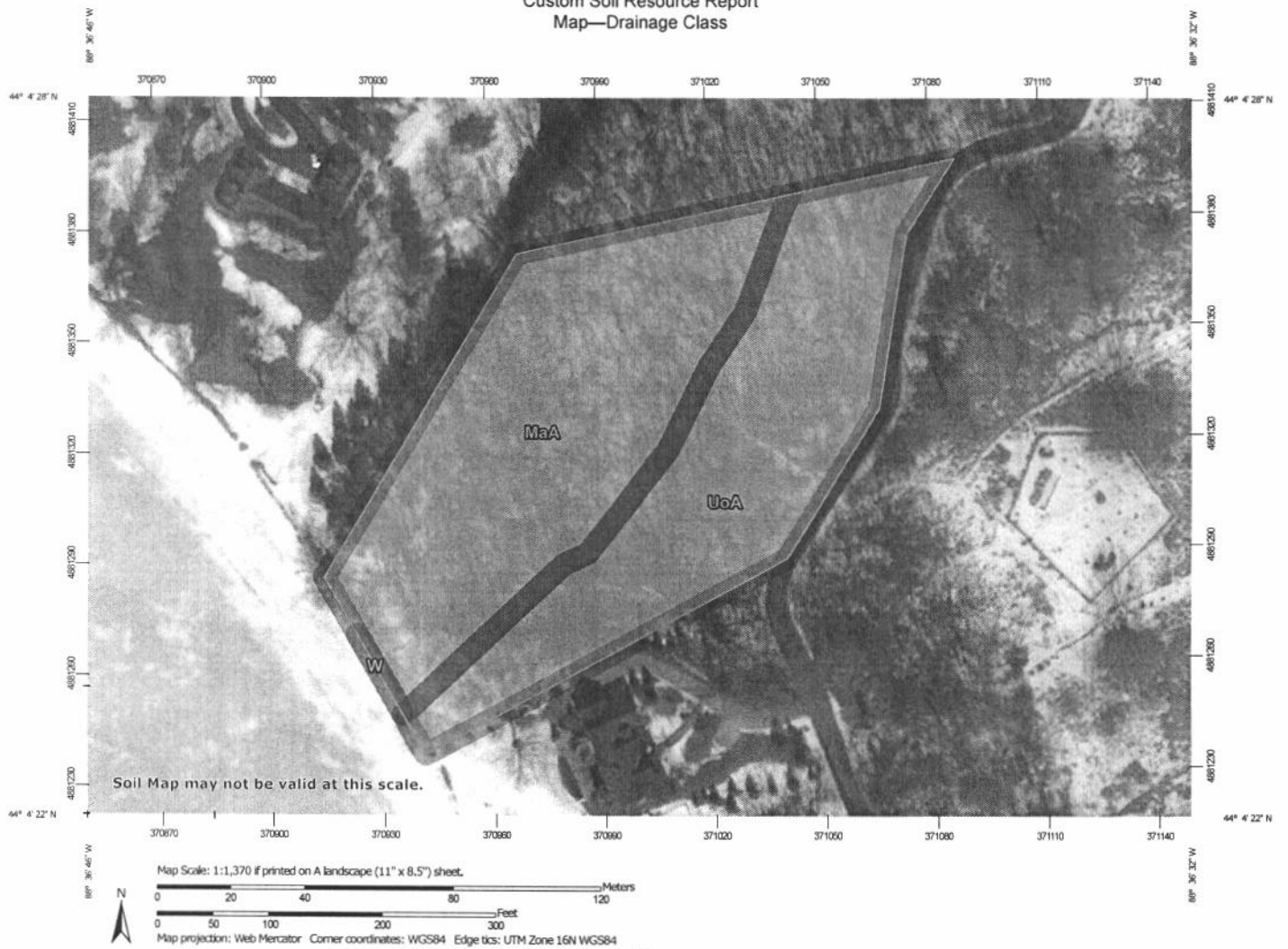
Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Drainage Class

"Drainage class (natural)" refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized-excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the "Soil Survey Manual."


Custom Soil Resource Report Map—Drainage Class



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)










 Area of Interest (AOI)

Soils

Soil Rating Polygons

- | | | | |
|---|------------------------------|---|------------------------------|
|  | Excessively drained |  | Somewhat excessively drained |
|  | Somewhat excessively drained |  | Well drained |
|  | Well drained |  | Moderately well drained |
|  | Moderately well drained |  | Somewhat poorly drained |
|  | Somewhat poorly drained |  | Poorly drained |
|  | Poorly drained |  | Very poorly drained |
|  | Very poorly drained |  | Subaqueous |
|  | Subaqueous |  | Not rated or not available |
|  | Not rated or not available | | |

Soil Rating Lines

- | | |
|---|------------------------------|
|  | Excessively drained |
|  | Somewhat excessively drained |
|  | Well drained |
|  | Moderately well drained |
|  | Somewhat poorly drained |
|  | Poorly drained |
|  | Very poorly drained |
|  | Subaqueous |
|  | Not rated or not available |

Soil Rating Points

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.

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Survey Area Data: Version 13, Sep 28, 2016

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

Date(s) aerial images were photographed: Jun 16, 2011—Mar 11, 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.

Custom Soil Resource Report

Table—Drainage Class

Drainage Class— Summary by Map Unit — Winnebago County, Wisconsin (WI139)				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
MaA	Manawa silty clay loam, 0 to 3 percent slopes	Somewhat poorly drained	1.9	53.8%
UoA	Udorthents, 0 to 3 percent slopes	Somewhat poorly drained	1.7	46.1%
W	Water greater than 40 acres		0.0	0.0%
Totals for Area of Interest			3.6	100.0%

Rating Options—Drainage Class

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Land Classifications

This folder contains a collection of tabular reports that present a variety of soil groupings. The reports (tables) include all selected map units and components for each map unit. Land classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

Hydric Rating by Map Unit (WI)

This Hydric Soil Category rating indicates the components of map units that meet the criteria for hydric soils. Map units are composed of one or more major soil components or soil types that generally make up 20 percent or more of the map unit and are listed in the map unit name, and they may also have one or more minor contrasting soil components that generally make up less than 20 percent of the map unit. Each major and minor map unit component that meets the hydric criteria is rated **hydric**. The map unit class ratings based on the hydric components present are: WI Hydric, WI Predominantly Hydric, WI Partially Hydric, WI Predominantly Nonhydric, and WI Nonhydric. The report also shows the total representative percentage of each map unit that the hydric components comprise.

"WI Hydric" means that all major and minor components listed for a given map unit are rated as being hydric. *"WI Predominantly Hydric"* means that all major components listed for a given map unit are rated as hydric, and at least one contrasting minor component is not rated hydric. *"WI Partially Hydric"* means that at least one major component listed for a given map unit is rated as hydric, and at least one other major component is not rated hydric. *"WI Predominantly Nonhydric"* means that no major component listed for a given map unit is rated as hydric, and at least one contrasting minor component is rated hydric. *"WI Nonhydric"* means no major or minor components for the map unit are rated hydric. The assumption is that the map unit is nonhydric even if none of the components within the map unit have been rated.

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

Custom Soil Resource Report

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.

If soils are wet enough for a long enough period of time to be considered hydric, they typically 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" (Vasilas, Hurt, and Noble, 2010).

The NTCHS has developed criteria to identify those soil properties unique to hydric soils (Federal Register, 2012). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria use selected soil properties that are described in "Field Indicators of Hydric Soils in the United States" (Vasilas, Hurt, and Noble, 2010), "Soil Taxonomy" (Soil Survey Staff, 1999), "Keys to Soil Taxonomy" (Soil Survey Staff, 2010), and the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

The criteria for hydric soils are represented by codes, for example, 2 or 3.

Definitions for the codes are as follows:

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

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

References:

- Federal Register. July 13, 1994. Changes in hydric soils of the United States.
- Federal Register. February, 28, 2012. Hydric soils of the United States.
- Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.
- Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.
- Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.
- Vasilas, L.M., G.W. Hurt, and C.V. Noble, editors. Version 7.0, 2010. Field indicators of hydric soils in the United States.

Report—Hydric Rating by Map Unit (WI)

Hydric Rating by Map Unit (WI)—Winnebago County, Wisconsin			
Map Unit Symbol	Map Unit Name	Hydric Percent of Map Unit	Hydric Category
MaA	Manawa silty clay loam, 0 to 3 percent slopes	4	WI Predominantly Nonydric
UoA	Udorthents, 0 to 3 percent slopes	0	WI Nonhydric
W	Water greater than 40 acres	0	WI Nonhydric

Hydric Soils

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

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

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). These soils, under natural conditions, are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

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

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

Hydric soils are identified by examining and describing the soil to a depth of about 20 inches. This depth may be greater if determination of an appropriate indicator so requires. It is always recommended that soils be excavated and described to the

Custom Soil Resource Report

depth necessary for an understanding of the redoximorphic processes. Then, using the completed soil descriptions, soil scientists can compare the soil features required by each indicator and specify which indicators have been matched with the conditions observed in the soil. The soil can be identified as a hydric soil if at least one of the approved indicators is present.

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

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

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

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

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Report—Hydric Soils

Hydric Soils—Winnebago County, Wisconsin				
Map symbol and map unit name	Component	Percent of map unit	Landform	Hydric criteria
MaA—Manawa silty clay loam, 0 to 3 percent slopes				
	Poygan	4	Depressions	2, 3

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