



Urban Service Area Amendment Application

East Side Growth Area

Date: 04/24/2020

[Appendix C: Wetland Delineation Reports](#)

- I. DNR Navigable Stream Determination (Skaalen), December 29, 2015
- II. Skaalen Wetland Delineation Report, April 25, 2016
- III. Budnar (Skaalen) Wetland Delineation Report, October 11, 2019
- IV. Helmke (Elvehjem Acres LLC) Wetland Delineation Report, June 4, 2018
- V. Lower Yahara River Trail Extension (Village) Wetland Delineation Report, March 13, 2019
- VI. Utterback-North (Veridian Homes) Wetland Delineation Report, December 20, 2019

Kris Krentz

From: Peich, Wendy M - DNR <Wendy.Peich@wisconsin.gov>
Sent: Tuesday, December 29, 2015 11:38 AM
To: Kris Krentz
Cc: Peich, Wendy M - DNR; Dilley, Kyle R - DNR; kerrie.j.hauser@usace.army.mil; village.administration@mcfarland.wi.us
Subject: RE: Navigable Stream Determination - Skaalen Retirement Services
Importance: High

December 29, 2015

INF-SC-2015-13-04748

Skaalen Retirement Services
c/o Kris Krentz

RE: Request for Navigability Determination, for an unnamed tributary associated with Door Creek, located in the NE quarter of the NE quarter of S02, T06N R10E Village of Mc Farland, Dane County.

I performed a desktop review on December 29th, 2015 at your request to determine if the property in question contains a DNR jurisdictional waterway. The review indicates agricultural land with a grassed waterway headwater that is ultimately connected to Door Creek and its associated wetlands. The waterway in question has no stream history or no evidence of a defined bed and bank were found in the review process. In Wisconsin, the Supreme Court has defined a navigable waterway as one which has a defined bed and banks and carries enough water to float a canoe or other watercraft during the spring high water periods. Based on this definition and the conditions observed at your site, the stream on your property has been determined to NOT be navigable/public.

Chapter 30, Wis. Stats., permits are NOT needed for work in and near this waterway. Information on these regulations and application materials are available on the DNR web site at www.dnr.wi.gov.

Please be aware that the Army Corp of Engineers has their own jurisdictional determination process. A defined bed and bank is not required for them to take jurisdiction. You will NEED to contact their agency before beginning any construction at this site. I have copied the ACOE project manager on this email.

If you have any questions about your permit, please call me at (608) 275-3481 or email wendy.peich@wisconsin.gov.

Sincerely,

Wendy Peich
Water Management Specialist

cc: Kerrie Hauser, Project Manager, (651) 290-5903, Attn: OP-R, U.S. Army Corps of Engineers
City of McFarland
Conservation Warden

We are committed to service excellence.

Visit our survey at <http://dnr.wi.gov/customersurvey> to evaluate how I did.



209 Commerce Parkway, PO Box 128, Cottage Grove WI 53527-8955

April 25, 2016
File: 193704241

Attention: Kris Krentz, President/CEO
Skaalen Retirement Services
400 N. Morris Street
Stoughton, WI 53589

**Reference: Summary of Skaalen Assured Wetland Determination
Town of Dunn, Dane County, Wisconsin**

Dear Mr. Krentz,

Stantec Consulting Services Inc. (Stantec) completed a wetland determination of an approximately 35-acre parcel (the "Study Area") on behalf of Skaalen Retirement Services. The Study Area is located northwest of the intersection of CTH MN and CTH AB in the Town of Dunn, Dane County, Wisconsin, Section 2, Township 6 North, Range 10 East (Figure 1). The wetland determination was conducted by Jeff Kraemer of Stantec, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program, on April 21, 2016.

There were no wetlands delineated within the Study Area. A summary of the methods used and results of the field investigation are summarized below.

Methods

The wetland determination was made using the three criteria (vegetation, soil, and hydrology) and technical approach defined in the *U.S. Army Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1 (1987) and subsequent guidance documents, and the Northcentral and Northeast Regional Supplement to the *Corps of Engineers Wetland Delineation Manual* (2011). According to procedures described in the 1987 Manual and the Northcentral and Northeast Regional Supplement, areas that under normal circumstances reflect a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology (e.g., inundated or saturated soils) are considered wetlands.

The wetland determination involved the use of available resources to assist in the assessment such as U.S. Geological Survey (USGS) topographic maps, U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) soil survey, WDNR Wisconsin Wetland Inventory (WWI) mapping, and aerial photography (Attachment A, Figures 1-4). As climate plays an important role in the formation and identification of wetlands, the antecedent precipitation in the months



April 25, 2016
Page 2 of 9

**Reference: Summary of Skaalen Assured Wetland Delineation
Town of Dunn, Dane County, Wisconsin**

leading up to the field investigation was reviewed. The current year's precipitation data was compared to long-term (30-year) precipitation averages and standard deviation to determine if precipitation was normal, wet, or dry for the area using a WETS analysis as developed by the NRCS (Attachment B). Additionally, as farmed areas with mapped partially hydric soils are present within the Study Area, a review U.S. Department of Agriculture Farm Service Agency (FSA) annual aerial slides and other available aerial imagery was conducted.

The aerial imagery was reviewed for the appearance of wetland signatures. A wetland signature is field evidence, recorded by aerial imagery, of ponding, flooding, or impacts of saturation for sufficient duration, which meets wetland hydrology and possibly wetland vegetation criteria. Wetland signatures may vary based on the type and seasonal date of the aerial imagery. Signatures visible on FSA annual aerial slides in cropland for Wisconsin have been categorized as follows (USDA, NRCS 1998):

1. Hydrophytic vegetation (seen as a different color of green)
2. Surface water (usually black or white)
3. Drowned-out crops (bare soil or mud flats)
4. Differences in color due to different planting dates or isolated areas not farmed with the rest of the field
5. Inclusions of wet areas in set-aside program
6. Patches of greener color in "dry" years
7. Crop stress (yellow) or sparse canopy (light green)
8. Saturated soil visible on infrared (IR) slides or photos

The antecedent precipitation in the months leading up to each aerial image was reviewed and compared to long-term (30-year) precipitation averages and standard deviation to determine if each year was normal, wet, or dry using a WETS analysis. Mapped partially hydric soils were identified within the Study Area and available aerial imagery was analyzed for signatures of wetness consistency with a focus in these areas (Attachment C). Areas within agricultural fields are typically identified as wetland if they contain hydric soils and 50% or more of the aerial images taken in the five (or more) most recent normal precipitation years show any of the wetland signatures listed above. However, while the focus of the analysis is on wetland signatures visible in normal precipitation years, years considered wet or dry for received precipitation were also analyzed. Wetland determinations and wetland boundaries are identified based on the aerial image having the largest wetland boundary during a "normal" rainfall year if signatures were apparent in at least 50% of the years (USDA, NRCS 1998).



April 25, 2016
Page 3 of 9

**Reference: Summary of Skaalen Assured Wetland Delineation
Town of Dunn, Dane County, Wisconsin**

Results

Soils mapped within the Study Area by the NRCS Soil Survey of Dane County include Dodge silt loam (DnB, DnC2), Kidder soils (KrD2), McHenry silt loam (MdC2), Plano silt loam (PoA), and St. Charles silt loam (ScB) (Figure 2). The mapped soils are not hydric, with the exception of the St. Charles series which may contain hydric inclusions within drainageways. Additionally, there are no poorly or somewhat poorly drained soils mapped within the Study Area (Figure 3) and the WWI mapping does not identify wetlands within the Study Area (Figure 4). The antecedent precipitation preceding the field investigation was within the normal range, based on a WETS analysis (Attachment B).

The Study Area consists of two agricultural fields separated by a grassed drainageway through the center of the property. Historic aerial imagery of the Study Area from 1979 to 2015 was reviewed and no consistent wetness signatures were observed (Attachment C). The drainageway was visible as an erosional feature in a few of the earlier years, and then appears as an established, maintained feature beginning in 1988. Potential signatures were observed within the northeast portion of the Study Area in 1999, 2008, and 2015; but during the field visit this area was determined to be disturbed from erosional deposition from the large fill pile located immediately to the north.

Three wetland determination sample points were completed within the Study Area to document upland conditions (Figure 5, Attachment A). Sample points P1 and P2 are representative of the drainageway as vegetation cover was uniform throughout and dominated by upland grass species including Kentucky bluegrass (*Poa pratensis*, FACU), smooth brome (*Bromus inermis*, UPL), and orchard grass (*Dactylis glomerata*, FACU). While P1 and P2 were within the shallow depression of the drainageway, no hydrology or hydric soil indicators were observed. Sample point P3 was placed within the active agricultural field within an area of mapped partially hydric soils. Based on observable 2015 soybean crop stubble, there was no crop stress or stunting. Remaining vegetation was sparse and consisted of dandelion (*Taraxacum officinale*, FACU) and giant ragweed (*Ambrosia trifida*, FAC), both common agricultural weeds. Sample point P3 also lacked indicators of hydrology and hydric soil. The data sheets completed at each sample point are available in Attachment D. Representative photographs of the Study Area are located in Attachment E.



April 25, 2016
Page 4 of 9

**Reference: Summary of Skaalen Assured Wetland Delineation
Town of Dunn, Dane County, Wisconsin**

Based on the historic imagery review and on-site field review, it was determined that no wetlands are present within the Study Area. Please contact me if you have any questions regarding this wetland determination.

Regards,

Stantec Consulting Services Inc.

Jeff Kraemer
Principal, Environmental Services
Phone: (608) 839-2010
Fax: (608) 839-1995
Jeff.Kraemer@stantec.com

Attachment: Attachment A – Figures 1-5
Attachment B – WETS Analysis
Attachment C – Off-Site Aerial Imagery Review
Attachment D – Wetland Determination Data Forms
Attachment E – Site Photographs



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209 Commerce Parkway, PO Box 128, Cottage Grove WI 53527-8955

ATTACHMENT A - FIGURES



Legend

-  Approximate Project Boundary
 NRCS Soil Survey Data
 Hydric Ratings
 Predominantly Hydric Soils
 Partially Hydric Soils
 Non-Hydric Soils

DNR 24k Hydrography*

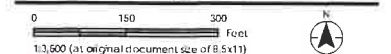
-  Perennial Stream
 Intermittent Stream
 Waterbody

Figure No.
2

Title
NRCS Soil Survey Data
Hydric Ratings

Client/Project
Skaalen Retirement Services, Inc.
Assured Wetland Delineation

Project Location	193704241
TGN, R10E, S02	Prepared by JD on 2016-02-12
T. of Dunn,	Technical Review by DG on 2016-02-16
Dane Co., WI	Independent Review by KR on 2016-04-22

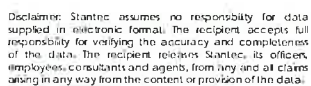


Notes:

1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
2. Data Sources Include: Slanted, WDOT, WDNR, NRCS
3. Orthophotography: 2015 NAIP

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*No Features within Data Frame



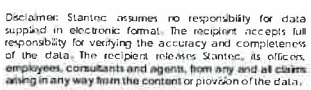
 Approximate Project Boundary
 NRCS Soil Survey Data
 Wetland Indicator Soils
 Somewhat Poorly Drained
 Poorly Drained
 Very Poorly Drained

 Perennial Stream
 Intermittent Stream
 Waterbody

Client/Project
Skaalen Retirement Services, Inc.
Assured Wetland Delineation

Project Location	193704241
T6N, R10E, S02	Prepared by JD on 2016-02-12
T. of Dunn,	Technical Review by DG on 2016-02-16
Dane Co., WI	Independent Review by KR on 2016-04-22





Page 01 of 01



- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WDOT, WDNR
 3. Orthophotography: 2015 NAP

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Legend

- Approximate Project Boundary
- 2ft Elevation Contours
- Sample Point
- DNR 24k Hydrography*
- Perennial Stream
- Intermittent Stream
- Waterbody

*No Features within Data Frame

Figure No.
5

Title
Field Collected Data

Client/Project
Skaalen Retirement Services, Inc.
Assured Wetland Delineation

Project Location
T6N, R10E, S02
T. of Dunn,
Dane Co., WI

193704241
Prepared by JD on 2016-02-12
Technical Review by DG on 2016-02-10
Independent Review by KR on 2016-04-22

0 150 300 Feet
1:3,600 (at original document size of 8.5x11)





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209 Commerce Parkway, PO Box 128, Cottage Grove WI 53527-8955

ATTACHMENT B – WETS ANALYSIS

WETS Analysis Worksheet

Project Name: Skaalen Assured Delineation

Project Number: 193704241

Period of interest: February - April

Station: Dane County Regional Airport (WI837)

County: Dane County, WI

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	April ¹	1.78	2.35	2.74
2nd month prior:	March	1.22	2.28	2.78
3rd month prior:	February	0.66	1.28	1.56
		Sum =		5.91

*Normal precipitation with 30% to 70% probability of occurrence

**Condition value:

Dry = 1

Normal = 2

Wet = 3

***If sum is:

6 to 9

10 to 14

15 to 18

then period has been drier than normal

then period has been normal

then period has been wetter than normal

¹ Long-term precipitation data for April multiplied by 0.7 to account for field work taking place on April 21, 2016 (21/30 = 0.7)

Precipitation data source:

USDA Field Office Climate Data; <http://agacis.rcc-acis.org>

Reference:

Donald E. Woodward, ed. 1997. *Hydrology Tools for Wetland Determination*, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

Site determination

Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
1.02	Dry	1	3	3
3.96	Wet	3	2	6
0.52	Dry	1	1	1
5.50	Sum =			10

Determination:

Wet

Dry

X Normal



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ATTACHMENT C - OFF-SITE AERIAL IMAGERY REVIEW

Off-Site Aerial Photography Review ¹							
Skaalen Wetland Delineation - Town of Dunn							
Project Location: Section 2, Township 6N, Range 10E, Dane County							
Year	Monthly Rainfall in inches ²			Relative Wetness	Cropped ³ ?	Wetness Signature ^{4,5} ?	Interpretation
	April	May	June				
1979	2.46	2.70	2.53	Normal	CR	N	No wetness signatures observed
1980	2.36	2.08	3.43	Normal	CR	N	No wetness signatures observed
1981	3.42	0.64	4.99	Normal	CR	Y-; 3, 6b	Fields appear uneven with bare spots; lighter green veg/bare along drainage path on NW-SE diagonal in center of Study Area
1982	3.26	4.34	3.40	Normal	CR	N	No wetness signatures observed; Study Area divided into multiple fields
1983	2.23	4.21	1.85	Normal	CR	N	No wetness signatures observed; Study Area divided into multiple fields
1984	3.86	3.32	7.01	Wet	CR	N	Bare/eroded drainage path visible along NW-SE diagonal in center of Study Area
1985	1.52	3.35	3.06	Normal	CR	N	Bare/eroded drainage path visible along NW-SE diagonal in center of Study Area
1986	2.27	1.97	3.24	Dry	CR	N	No wetness signatures observed
1987	2.46	3.90	1.17	Dry	CR	N	No wetness signatures observed
1988	2.65	0.92	2.06	Dry	CR	N	Established drainage swale visible along approx NW-SE diagonal
1989	1.69	1.72	1.67	Dry	CR	N	Established drainage swale visible along approx NW-SE diagonal
1990	1.90	5.35	4.88	Normal	CR	N	Established drainage swale visible along approx NW-SE diagonal
1992	3.17	1.12	1.53	Dry	CR	N	Established drainage swale visible along approx NW-SE diagonal
1993	5.33	3.81	6.67	Wet	CR	N	Established drainage swale visible along approx NW-SE diagonal
1994	2.57	1.33	5.66	Normal	CR	N	Established drainage swale visible along approx NW-SE diagonal
1995	4.14	3.92	1.22	Normal	CR	N	Established drainage swale visible along approx NW-SE diagonal
1996	2.76	2.95	9.69	Wet	CR	N	Established drainage swale visible along approx NW-SE diagonal
1997	2.50	1.94	5.23	Normal	CR	N	Established drainage swale visible along approx NW-SE diagonal
1998	4.10	4.58	7.46	Wet	CR	N	Established drainage swale visible along approx NW-SE diagonal
1999	6.91	3.72	5.57	Wet	CR	Y-; 6a, 6d	Area of darker veg/saturated soils in NE corner; established drainage swale visible along approx NW-SE diagonal and darker green than rest of field
2000	3.18	9.63	8.63	Wet	CR	N	Established drainage swale visible along approx NW-SE diagonal
2001	3.07	4.16	5.40	Wet	CR	N	Established drainage swale visible along approx NW-SE diagonal
2002	3.45	2.92	3.70	Normal	CR	N	Established drainage swale visible along approx NW-SE diagonal
2003	2.95	3.67	2.10	Dry	CR	N	Established drainage swale visible along approx NW-SE diagonal
2004	1.76	10.84	3.93	Normal	CR	N	Established drainage swale visible along approx NW-SE diagonal
2005	1.68	3.96	1.65	Normal	CR	N	Established drainage swale visible along approx NW-SE diagonal
2006	5.04	4.61	2.29	Normal	CR	N	Established drainage swale visible along approx NW-SE diagonal. Area immediately north of NE corner appears to have been cleared.
2008	6.43	2.55	10.93	Wet	CR	N	Area of potential stressed crop in NE corner of Study Area. However, area immediately to the north on higher topography appears to have been cleared and fill placed - could be erosional deposition in NE corner of Study Area.
2010	3.65	3.79	8.38	Wet	CR	N	Established drainage swale visible along approx NW-SE diagonal. Area immediately to the north of NE corner vegetated.
2013	5.83	6.57	10.86	Wet	CR	N	Established drainage swale visible along approx NW-SE diagonal. Area immediately to the north of NE corner with new fill/grading.
2015	4.38	4.18	3.15	Wet	CR	N	Different color veg in NE corner of Study Area - likely due to new fill/grading in area immediately to the north of NE corner.
30% chance less than	2.54	2.05	2.36				
30 Year Average	3.35	3.25	4.05				
30% chance more than	3.91	3.92	4.92				

Does slide/aerial photo analysis indicate the site is a wetland? **N**

1 out of **14** most the recent "normal" precipitation years had wetland signatures present. The most consistent feature is the established drainage swale through the center of the Study Area. However, no wetness signatures were seen associated with this feature. The swale appears to have been installed to limit potential erosional drainage through the field(s). Area of disturbance visible in NE corner appears to be associated with fill/grading immediately to the north.

DRY
NORMAL
WET

¹ Farm Service Agency (FSA) slides are used for this review unless otherwise noted. Assumption is made that FSA slides are taken in July; as a result, precipitation analysis focuses on three months prior to July

² Precipitation data from NWS weather station #W1837 - Dane County Regional Airport, Madison, WI

³ CR = cropped (row crop or tilled); NC = not cropped (hay, pasture, fallow, etc.)

⁴ Y = wetness signature present (+ = strong, - = weak); N = No wetness signature

⁵ Interpretation Codes - Feature: 1=water, 2=mud flat, 3=bare spot, 4=drowned crop, 5=planted late; Color: 6a=dark green, 6b=light green, 6c=yellow, 6d=brown, 6e=black; Manipulation: 7a=sketched, 7b=tiled, 7c=filled, 7d=tree/brush removal, 8=plowed/filled; Other: write explanation as needed

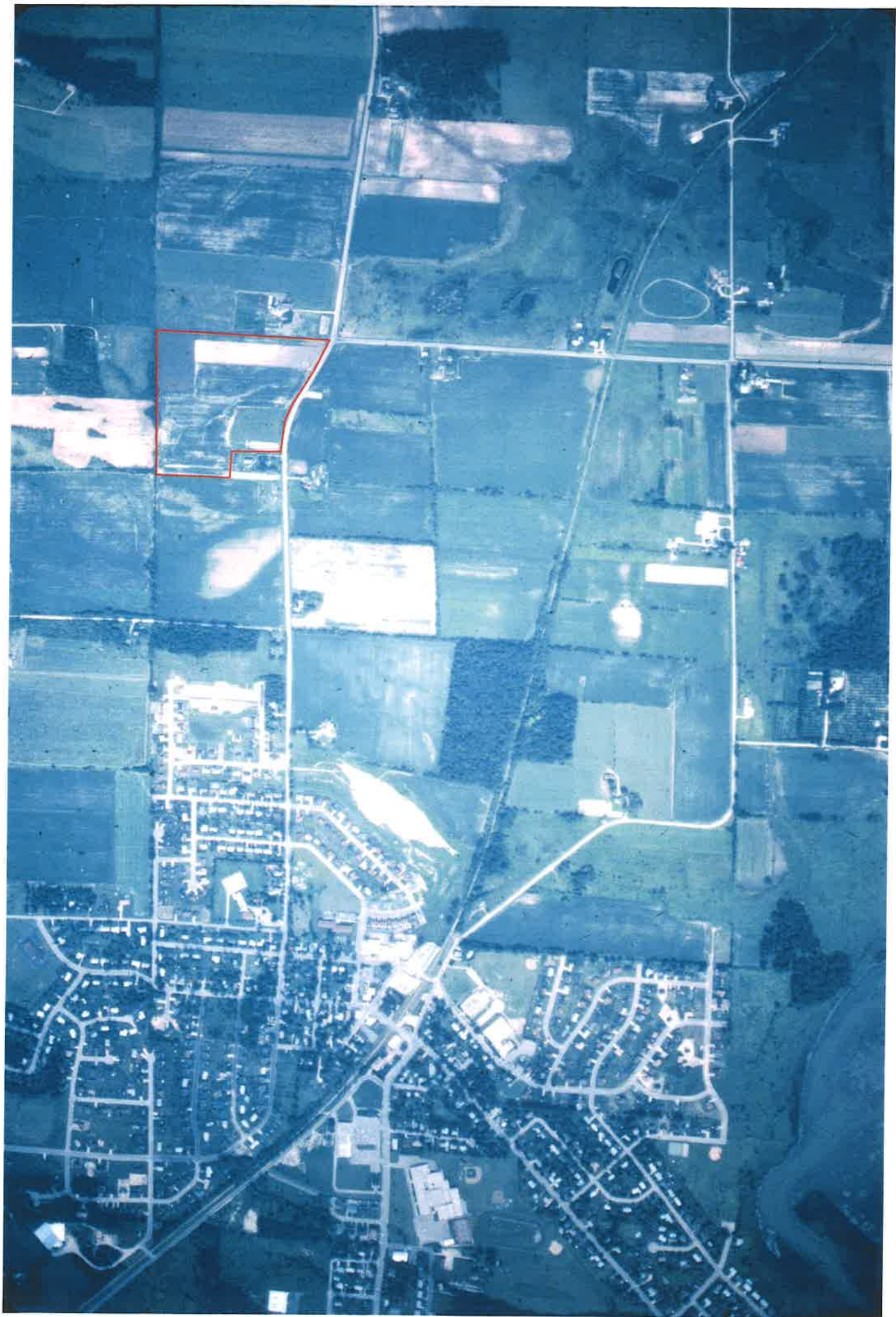






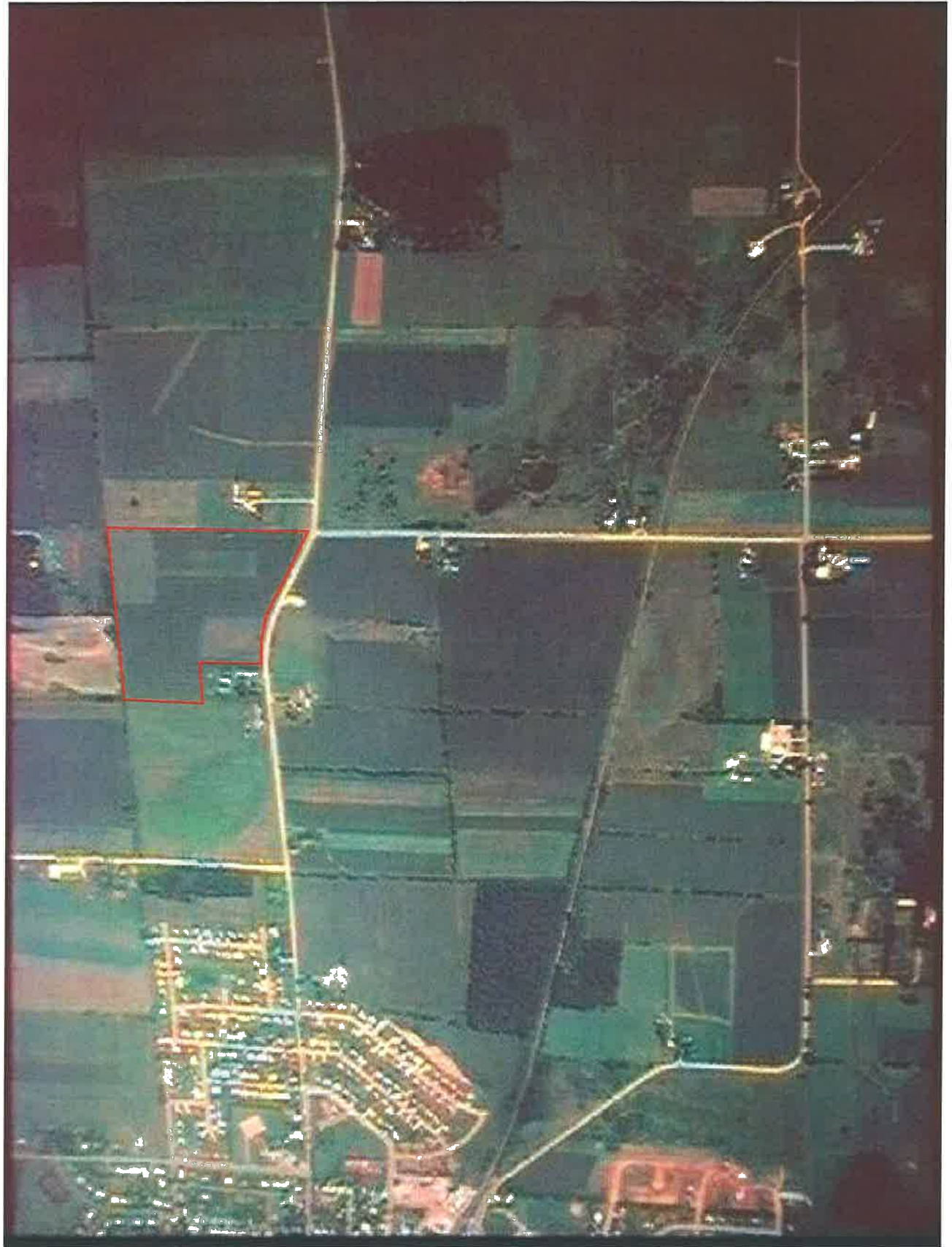










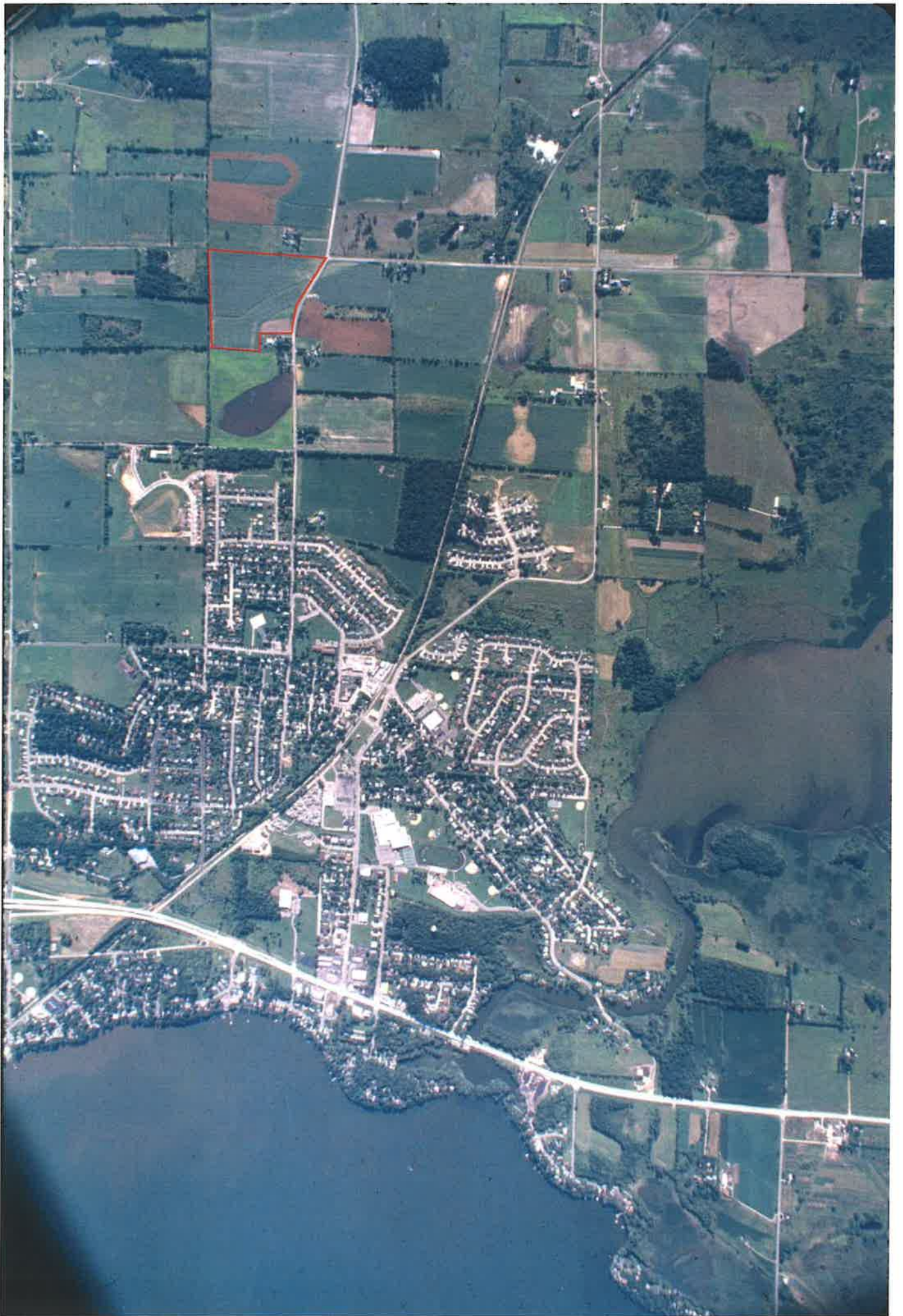




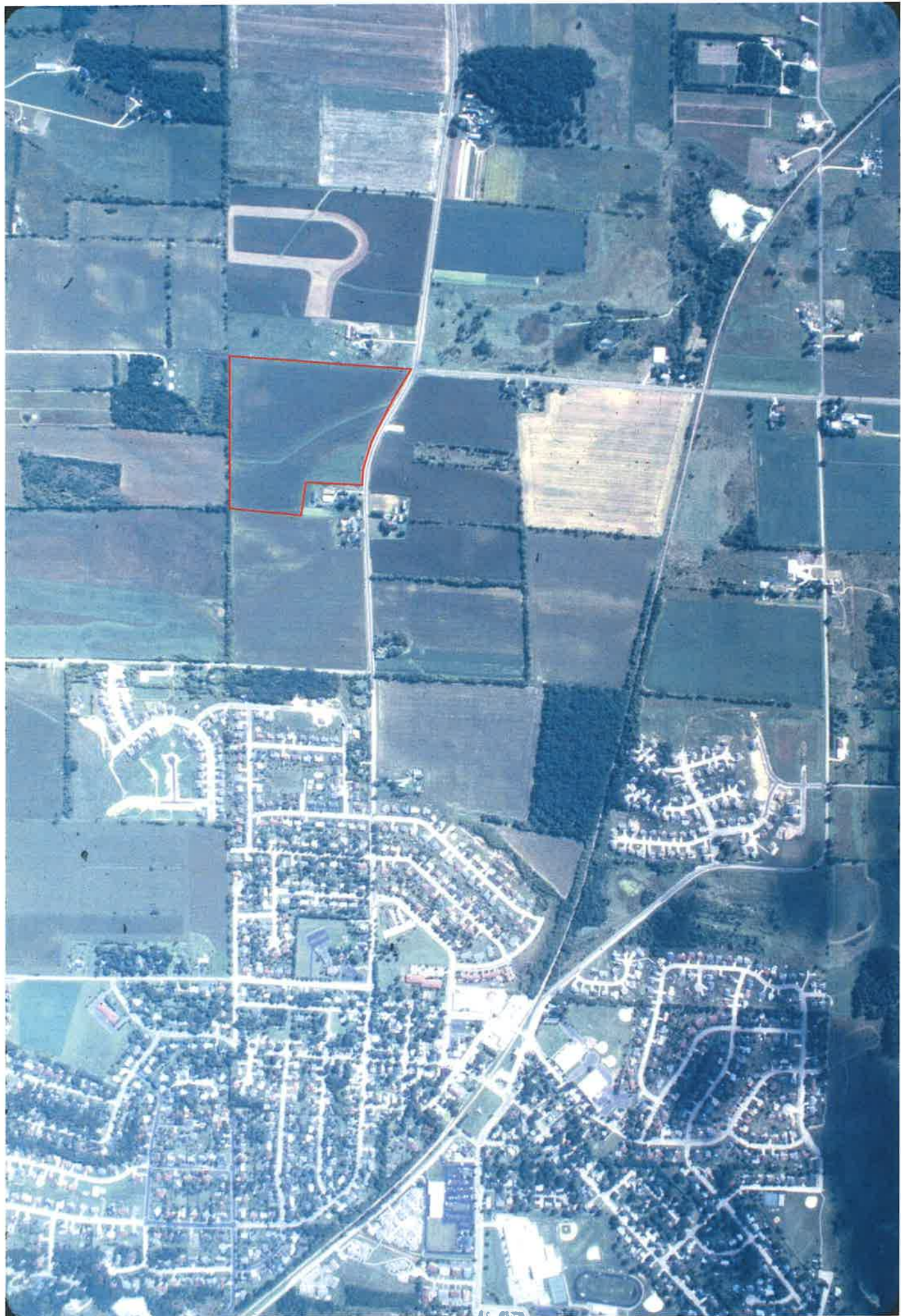








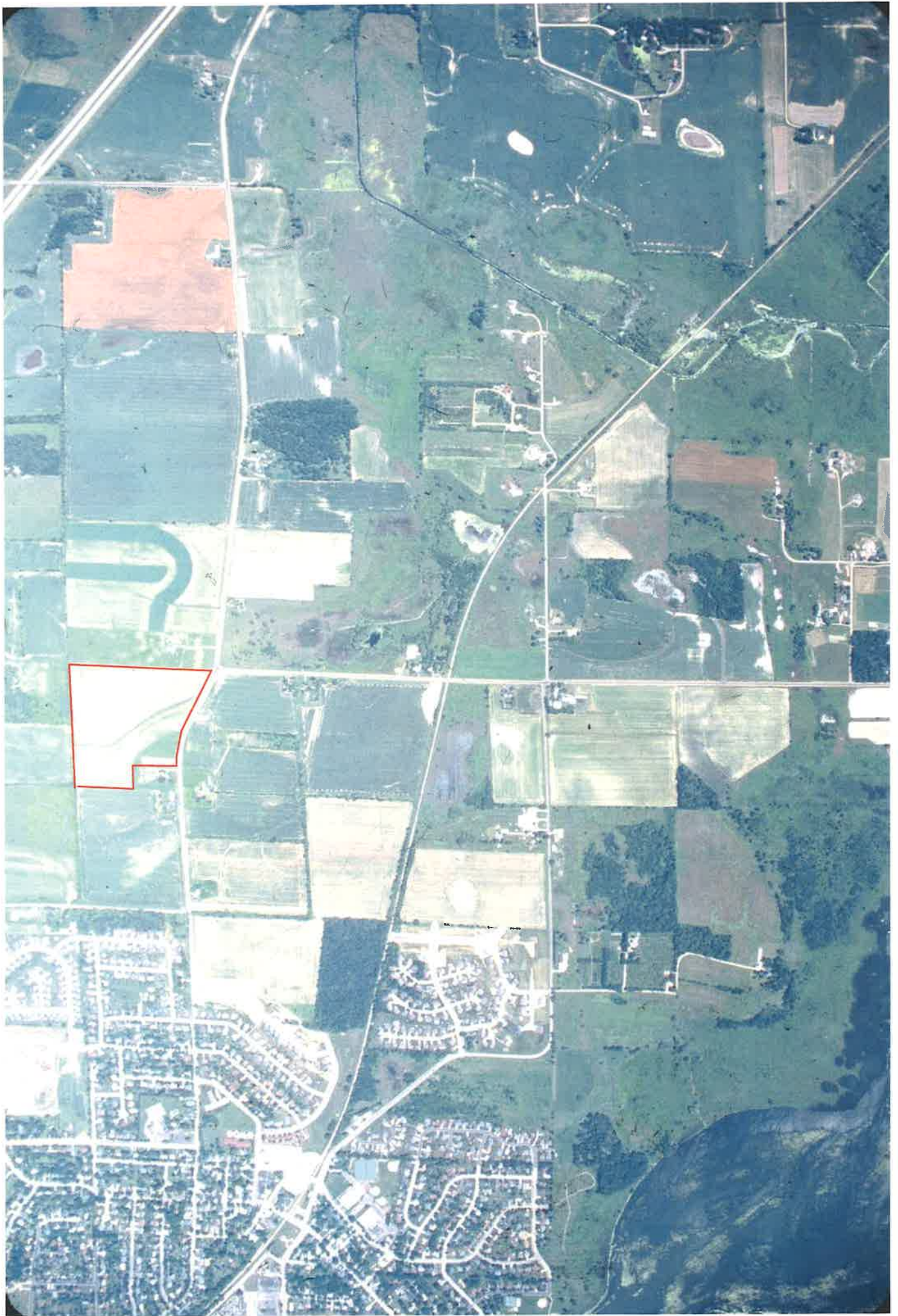


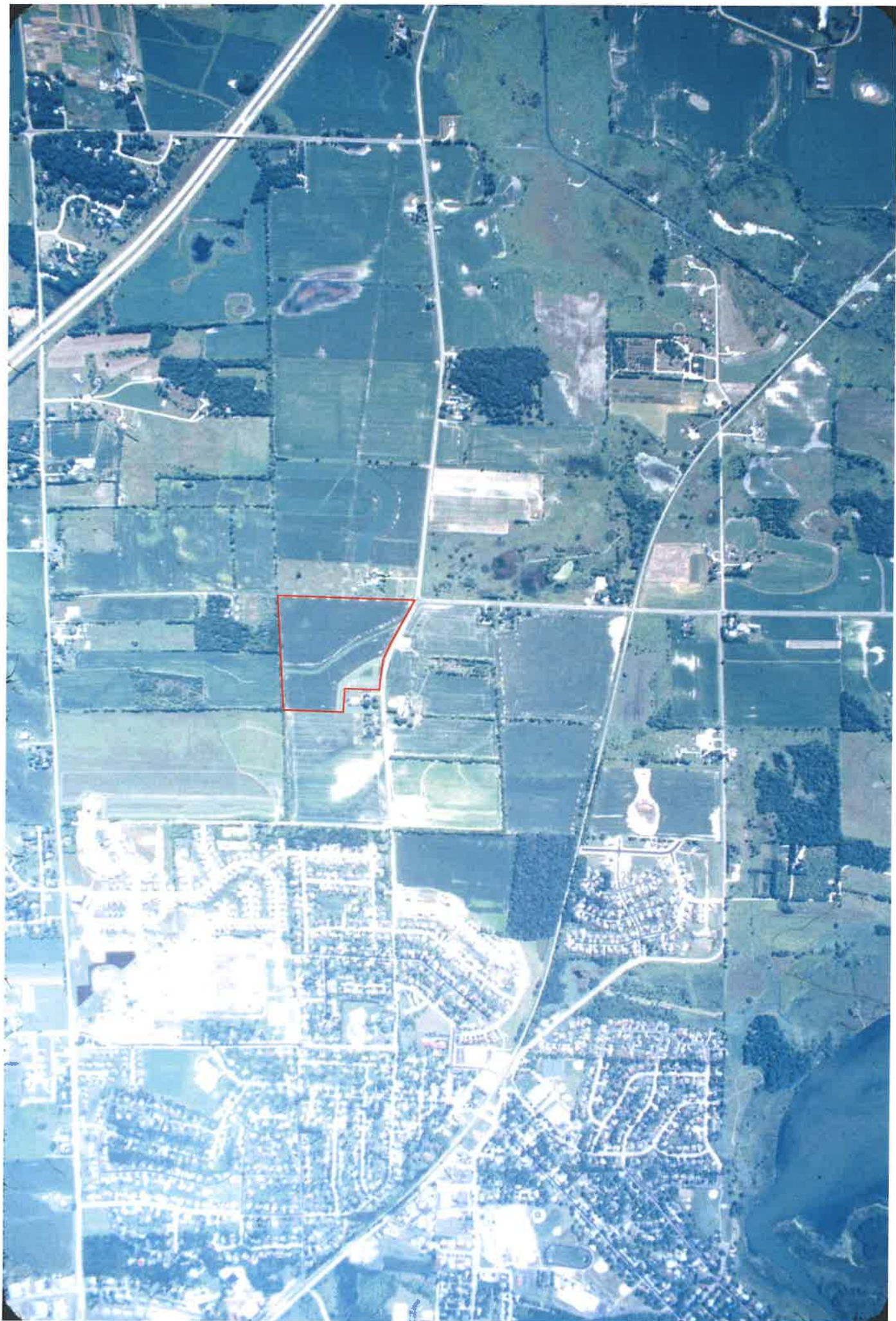








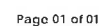


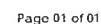














Legend

 Approximate Project Boundary

- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WDOT, WDNR
 3. Orthophotography: NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Figure No.
X

Title
**Historic Orthophotography
2006 NAIP**

Client/Project
**Skaalen Retirement Services, Inc.
Assured Wetland Delineation**

Project Location
T7N, R10E, S02
T. of Dunn,
Dane Co., WI

193704241
Prepared by JD on 2016-02-12
Technical Review by DG on 2016-02-12
Independent Review by KR on 2016-04-22

0 200 400 Feet
1:4,800 (at original document size of 8.5x11)





Legend

- Approximate Project Boundary

Notes

- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WDOT, WDNR
 3. Orthophotography: N/A

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Figure No.
X

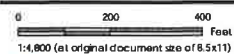
Title

Historic Orthophotography
2008 NAIP

Client/Project
Skaalen Retirement Services, Inc.
Assured Wetland Delineation

Project Location
T7N, R10E, S02
T. of Dunn,
Dane Co., WI

193704241
Prepared by JD on 2016-02-12
Technical Review by DG on 2016-02-12
Independent Review by KR on 2016-04-22





- Notes
1. Coordinate System: NAD 1983 StatePlane Wisconsin South T8S 4803 Foot
 2. Data Sources Include: Stantec, WDOT, WDNR
 3. Orthophotography: NAIP

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Legend

 Approximate Project Boundary

Figure No.
X

Title
**Historic Orthophotography
2010 NAIP**

Client/Project
Skaalen Retirement Services, Inc.
Assured Wetland Delineation

Project Location
T7N, R10E, S02
T. of Dunn,
Dane Co., WI

193704241
Prepared by JD on 2016-02-12
Technical Review by DG on 2016-02-12
Independent Review by KR on 2016-04-22

0 200 400 Feet
1:4,800 (at original document size of 8.5x11)





- Notes**
1. Coordinate System: NAD 1983 StatePlane Wisconsin South FIPS 4803 Feet
 2. Data Sources Include: Stantec, WDOT, WDNR
 3. Orthophotography: NAIP

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

Legend

Approximate Project Boundary

Figure No.
X

Title
**Historic Orthophotography
2013 NAIP**

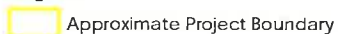
Client/Project
Skaalen Retirement Services, Inc.
Assured Wetland Delineation

Project Location
T7N, R10E, S02
T. of Dunn,
Dane Co., WI

193704241
Prepared by JD on 2016-02-12
Technical Review by DG on 2016-02-12
Independent Review by KR on 2016-04-22

0 200 400 Feet
1:4,800 (at original document size of 8.5x11)







Stantec

209 Commerce Parkway, PO Box 128, Cottage Grove WI 53527-8955

ATTACHMENT D - WETLAND DETERMINATION DATA FORMS

Project/Site: Skaalen Assured Wetland Delineation		Stantec Project #: 193704241	Date: 04/21/16
Applicant: Skaalen Retirement Services			County: Dane
Investigator #1: J. Kraemer	Investigator #2: —		State: Wisconsin
Soil Unit: Plano silt loam	NW/WWI Classification: None Depicted		Wetland ID: N/A
Landform: Depression	Local Relief: Concave		Sample Point: P1
Slope (%): 0-2	Latitude: N/A	Longitude: N/A	Datum: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks)			☒ Yes ☐ No
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?	
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☒ Yes ☐ No	
Community ID: Grassed Drainageway			Section: 2
Range: 10			Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydic Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No
Remarks: Based on a WETS analysis, climatic conditions were within the normal range. Sample point located within grassed agricultural drainage swale.	

HYDROLOGY
Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☒ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present? ☐ Yes ☒ No	Depth: (in.)
Water Table Present? ☐ Yes ☒ No	Depth: (in.)
Saturation Present? ☐ Yes ☒ No	Depth: (in.)

Wetland Hydrology Present? ☐ Yes ☒ No

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

Historic Aerial Imagery

 Remarks: **Sample point located in maintained/mowed shallow drainageway through agricultural field.**
SOILS

 Map Unit Name: **Plano silt loam** Series Drainage Class: **moderately well to well**

 Taxonomy (Subgroup): **Typic Argiudolls**
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	8	1	10YR	3/2	100	---	---	---	---	---	Silty Clay Loam
8	10	2	10YR	4/3	98	10YR	4/4	2	C	M	Silty Clay Loam
10	24	3	10YR	4/4	100	---	---	---	---	---	silty clay
---	---	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):

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

- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils¹

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

¹Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

 Restrictive Layer (If Observed) Type: **N/A** Depth: **N/A**
Hydric Soil Present? ☐ Yes ☒ No

Remarks:

Project/Site: **Skaalen Assured Wetland Delineation**

 Wetland ID: **N/A**

 Sample Point: **P1**
VEGETATION (Species identified in all uppercase are non-native species)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	---	---	---	---
2.	---	---	---	---
3.	---	---	---	---
4.	---	---	---	---
5.	---	---	---	---
6.	---	---	---	---
7.	---	---	---	---
8.	---	---	---	---
9.	---	---	---	---
10.	---	---	---	---

 Total Cover = **0**
Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	---	---	---	---
2.	---	---	---	---
3.	---	---	---	---
4.	---	---	---	---
5.	---	---	---	---
6.	---	---	---	---
7.	---	---	---	---
8.	---	---	---	---
9.	---	---	---	---
10.	---	---	---	---

 Total Cover = **0**
Herb Stratum (Plot size: 2 meter radius)

1.	POA PRATENSIS	90	Y	FACU
2.	BROMUS INERMIS	20	N	UPL
3.	TARAXACUM OFFICINALE	2	N	FACU
4.	DAUCUS CAROTA	2	N	UPL
5.	---	---	---	---
6.	---	---	---	---
7.	---	---	---	---
8.	---	---	---	---
9.	---	---	---	---
10.	---	---	---	---
11.	---	---	---	---
12.	---	---	---	---
13.	---	---	---	---
14.	---	---	---	---
15.	---	---	---	---

 Total Cover = **114**
Woody Vine Stratum (Plot size: 10 meter radius)

1.	---	---	---	---
2.	---	---	---	---
3.	---	---	---	---
4.	---	---	---	---
5.	---	---	---	---

 Total Cover = **0**

 Remarks: **Regularly maintained/mowed drainage swale.**
Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: **0** (A)

 Total Number of Dominant Species Across All Strata: **1** (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	92	x 4 =	368
UPL spp.	22	x 5 =	110

 Total **114** (A) **478** (B)

 Prevalence Index = B/A = **4.193**
Hydrophytic Vegetation Indicators:

- ☐ Yes ☒ No Rapid Test for Hydrophytic Vegetation
☐ Yes ☒ No Dominance Test is > 50%
☐ Yes ☒ No Prevalence Index is ≤ 3.0 *
☐ Yes ☒ No Morphological Adaptations (Explain) *
☐ Yes ☒ No Problem 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. (7.6cm) 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. tall.

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

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Skaalen Assured Wetland Delineation		Stantec Project #: 193704241		Date: 04/21/16
Applicant: Skaalen Retirement Services		Investigator #2: ---		County: Dane
Investigator #1: J. Kraemer		NW/WWI Classification: None Depicted		State: Wisconsin
Soil Unit: Dodge silt loam	Local Relief: Concave			Wetland ID: N/A
Landform: Depression	Latitude: N/A	Longitude: N/A	Datum: N/A	Sample Point: P2
Slope (%): 0-2				Community ID: Grassed Drainageway
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Section: 2
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present? ☒ Yes ☐ No		Township: 6N
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?				Range: 10 Dir: E

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present? ☐ Yes ☒ No	Hydric Soils Present? ☐ Yes ☒ No
Wetland Hydrology Present? ☐ Yes ☒ No	Is This Sampling Point Within A Wetland? ☒ Yes ☐ No

Remarks: **Based on a WETS analysis, climatic conditions were within the normal range. Sample point located within grassed agricultural drainage swale.**

HYDROLOGY
Wetland Hydrology Indicators (Check here if indicators are not present ☒):

Primary:

- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B8 - Sparsely Vegetated Concave Surface

- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B15 - Marl Deposits
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:

- ☐ B6 - Surface Soil Cracks
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry-Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☒ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present? ☐ Yes ☒ No	Depth: (in.)
Water Table Present? ☐ Yes ☒ No	Depth: (in.)
Saturation Present? ☐ Yes ☒ No	Depth: (in.)

Wetland Hydrology Present? ☐ Yes ☒ No

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

Historic Aerial Imagery

 Remarks: **Sample point located in maintained/mowed shallow drainageway through agricultural field.**
SOILS

 Map Unit Name: **Dodge silt loam** Series Drainage Class: **well**

 Taxonomy (Subgroup): **Typic Hapludalfs**
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Living, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix			Redox Features					Texture (e.g. clay, sand, loam)
			Color (Moist)		%	Color (Moist)		%	Type	Location	
0	4	1	10YR	3/2	100	---	---	---	---	---	Silty Clay Loam
4	7	2	10YR	4/4	100	---	---	---	---	---	silty clay
7	20	3	10YR	5/4	100	---	---	---	---	---	silty clay
---	---	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---
---	---	---	---	---	---	---	---	---	---	---	---
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---	---	---	---	---	---	---	---	---	---	---	---

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒):

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

- ☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B)
- ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B)
- ☐ S11 - High Chroma Sands
- ☐ F1 - Loamy Mucky Mineral (LRR K, L)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matrix
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions

Indicators for Problematic Soils ¹

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

¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

 Restrictive Layer (If Observed) Type: **N/A** Depth: **N/A**
Hydric Soil Present? ☐ Yes ☒ No

Remarks:

Project/Site: **Skaalen Assured Wetland Delineation**

 Wetland ID: **N/A**

 Sample Point: **P2**
VEGETATION (Species identified in all uppercase are non-native species)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.	---	---	---	---
2.	---	---	---	---
3.	---	---	---	---
4.	---	---	---	---
5.	---	---	---	---
6.	---	---	---	---
7.	---	---	---	---
8.	---	---	---	---
9.	---	---	---	---
10.	---	---	---	---

 Total Cover = **0**

Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.	---	---	---	---
2.	---	---	---	---
3.	---	---	---	---
4.	---	---	---	---
5.	---	---	---	---
6.	---	---	---	---
7.	---	---	---	---
8.	---	---	---	---
9.	---	---	---	---
10.	---	---	---	---

 Total Cover = **0**

Herb Stratum (Plot size: 2 meter radius)

1.	POA PRATENSIS	80	Y	FACU
2.	BROMUS INERMIS	25	N	UPL
3.	DACTYLIS GLOMERATA	20	N	FACU
4.	TRIFOLIUM HYBRIDUM	5	N	FACU
5.	---	---	---	---
6.	---	---	---	---
7.	---	---	---	---
8.	---	---	---	---
9.	---	---	---	---
10.	---	---	---	---
11.	---	---	---	---
12.	---	---	---	---
13.	---	---	---	---
14.	---	---	---	---
15.	---	---	---	---

 Total Cover = **130**

Woody Vine Stratum (Plot size: 10 meter radius)

1.	---	---	---	---
2.	---	---	---	---
3.	---	---	---	---
4.	---	---	---	---
5.	---	---	---	---

 Total Cover = **0**

 Remarks: **Regularly maintained/mowed drainage swale.**
Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: **0** (A)

 Total Number of Dominant Species Across All Strata: **1** (B)

 Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	0	x 3 =	0
FACU spp.	105	x 4 =	420
UPL spp.	25	x 5 =	125

 Total **130** (A) **545** (B)

 Prevalence Index = B/A = **4.192**
Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☐ Yes | ☒ No | Dominance Test is > 50% |
| ☐ Yes | ☒ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem 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. (7.6cm) 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. tall.

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

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:

Project/Site: Skaalen Assured Wetland Delineation		Stantec Project #: 193704241		Date: 04/21/16							
Applicant: Skaalen Retirement Services				County: Dane							
Investigator #1: J. Kraemer		Investigator #2: ---		State: Wisconsin							
Soil Unit: St. Charles silt loam		NW/WWI Classification: None Depicted		Wetland ID: N/A							
Landform: Toeslope		Local Relief: Linear		Sample Point: P3							
Slope (%): 0-2		Latitude: N/A		Community ID: Upland Ag Field							
		Longitude: N/A		Section: 2							
		Datum: N/A		Township: 6N							
Are climatic/hydrologic conditions on the site typical for this time of year? (If no, explain in remarks) ☒ Yes ☐ No				Range: 10 Dir: E							
Are Vegetation ☒ , Soil ☐ , or Hydrology ☐ significantly disturbed?		Are normal circumstances present?									
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?		☐ Yes ☒ No									
SUMMARY OF FINDINGS											
Hydrophytic Vegetation Present? ☐ Yes ☒ No		Hydric Soils Present? ☐ Yes ☒ No									
Wetland Hydrology Present? ☐ Yes ☒ No		Is This Sampling Point Within A Wetland? ☐ Yes ☒ No									
Remarks: Based on a WETS analysis, climatic conditions were within the normal range. Sample point located within active agricultural field planted to soybeans in 2015.											
HYDROLOGY											
Wetland Hydrology Indicators (Check here if indicators are not present ☒):											
Primary:			Secondary:								
☐ A1 - Surface Water ☐ A2 - High Water Table ☐ A3 - Saturation ☐ B1 - Water Marks ☐ B2 - Sediment Deposits ☐ B3 - Drift Deposits ☐ B4 - Algal Mat or Crust ☐ B5 - Iron Deposits ☐ B7 - Inundation Visible on Aerial Imagery ☐ B8 - Sparsely Vegetated Concave Surface			☐ B9 - Water-Stained Leaves ☐ B13 - Aquatic Fauna ☐ B15 - Marl Deposits ☐ C1 - Hydrogen Sulfide Odor ☐ C3 - Oxidized Rhizospheres on Living Roots ☐ C4 - Presence of Reduced Iron ☐ C6 - Recent Iron Reduction in Tilled Soils ☐ C7 - Thin Muck Surface ☐ Other (Explain in Remarks)								
			☐ B6 - Surface Soil Cracks ☐ B10 - Drainage Patterns ☐ B16 - Moss Trim Lines ☐ C2 - Dry-Season Water Table ☐ C8 - Crayfish Burrows ☐ C9 - Saturation Visible on Aerial Imagery ☐ D1 - Stunted or Stressed Plants ☒ D2 - Geomorphic Position ☐ D3 - Shallow Aquitard ☐ D4 - Microtopographic Relief ☐ D5 - FAC-Neutral Test								
Field Observations:											
Surface Water Present? ☐ Yes ☒ No			Wetland Hydrology Present? ☐ Yes ☒ No								
Water Table Present? ☐ Yes ☒ No											
Saturation Present? ☐ Yes ☒ No											
Depth: (in.)											
Depth: (in.)											
Depth: (in.)											
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Historic Aerial Imagery											
Remarks: Sample point located in flat area of agricultural field downslope of higher topography to the north. Wetness signatures not observed in review of historic aerial imagery.											
SOILS											
Map Unit Name: St. Charles silt loam Series Drainage Class: moderately well to well											
Taxonomy (Subgroup): Typic Hapludalfs											
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pure Lining, M=Matrix)											
Top Depth	Bottom Depth	Horizon	Matrix			Redox Features				Texture (e.g. clay, sand, loam)	
			Color (Moist)		%	Color (Moist)		%	Type		Location
0	4	1	10YR	4/3	100	---	---	---	---	---	Silty Clay Loam
4	18	2	10YR	4/4	100	---	---	---	---	---	silty clay
NRCS Hydric Soil Field Indicators (check here if indicators are not present ☒):											
☐ A1 - Histosol ☐ A2 - Histic Epipedon ☐ A3 - Black Histic ☐ A4 - Hydrogen Sulfide ☐ A5 - Stratified Layers ☐ A11 - Depleted Below Dark Surface ☐ A12 - Thick Dark Surface ☐ S1 - Sandy Muck Mineral ☐ S4 - Sandy Gleyed Matrix ☐ S5 - Sandy Redox ☐ S6 - Stripped Matrix ☐ S7 - Dark Surface (LRR R, MLRA 149B)			☐ S8 - Polyvalue Below Surface (LRR R, MLRA 149B) ☐ S9 - Thin Dark Surface (LRR R, MLRA 149B) ☐ S11 - High Chroma Sands ☐ F1 - Loamy Mucky Mineral (LRR K, L) ☐ F2 - Loamy Gleyed Matrix ☐ F3 - Depleted Matrix ☐ F6 - Redox Dark Surface ☐ F7 - Depleted Dark Surface ☐ F8 - Redox Depressions								
Indicators for Problematic Soils ¹											
☐ A10 - 2 cm Muck (LRR K, L, MLRA 149B) ☐ A16 - Coast Prairie Redox (LRR K, L, R) ☐ S3 - 5cm Mucky Peat of Peat (LRR K, L, R) ☐ S7 - Dark Surface (LRR K, L, M) ☐ S8 - Polyvalue Below Surface (LRR K, L) ☐ S9 - Thin Dark Surface (LRR K, L) ☐ F12 - Iron-Manganese Masses (LRR K, L, R) ☐ F19 - Piedmont Floodplain Soils (MLRA 149B) ☐ F21 - Red Parent Material ☐ TA6 - Mesic Spodic (MLRA 144A, 145, 149B) ☐ TF12 - Very Shallow Dark Surface ☐ Other (Explain in Remarks)											
¹ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic											
Restrictive Layer (If Observed)		Type: N/A		Depth: N/A							
				Hydric Soil Present? ☐ Yes ☒ No							
Remarks:											

Project/Site: **Skaalen Assured Wetland Delineation**

 Wetland ID: **N/A**

 Sample Point: **P3**
VEGETATION (Species identified in all uppercase are non-native species)

Tree Stratum (Plot size: 10 meter radius)

	Species Name	% Cover	Dominant	Ind. Status
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

 Total Cover = **0**
Sapling/Shrub Stratum (Plot size: 5 meter radius)

1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

 Total Cover = **0**
Herb Stratum (Plot size: 2 meter radius)

1.	<i>Ambrosia trifida</i>	25	Y	FAC
2.	<i>TARAXACUM OFFICINALE</i>	20	Y	FACU
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				

 Total Cover = **45**
Woody Vine Stratum (Plot size: 10 meter radius)

1.				
2.				
3.				
4.				
5.				

 Total Cover = **0**

Remarks: Soybean crop in 2015. Approximately 80% crop vegetation coverage based on observed stubble; no apparent crop stress visible in stubble or aerial imagery review

Dominance Test Worksheet

 Number of Dominant Species that are OBL, FACW, or FAC: **1** (A)

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

 Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet

Total % Cover of:

Multiply by:

OBL spp.	0	x 1 =	0
FACW spp.	0	x 2 =	0
FAC spp.	25	x 3 =	75
FACU spp.	20	x 4 =	80
UPL spp.	0	x 5 =	0

 Total **45** (A) **155** (B)

 Prevalence Index = B/A = **3.444**
Hydrophytic Vegetation Indicators:

- | | | |
|------------------------------|--|--|
| ☐ Yes | ☒ No | Rapid Test for Hydrophytic Vegetation |
| ☐ Yes | ☒ No | Dominance Test is > 50% |
| ☐ Yes | ☒ No | Prevalence Index is ≤ 3.0 * |
| ☐ Yes | ☒ No | Morphological Adaptations (Explain) * |
| ☐ Yes | ☒ No | Problem 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. (7.6cm) 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. tall.

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

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☒ No

Additional Remarks:



Stantec

209 Commerce Parkway, PO Box 128, Cottage Grove WI 53527-8955

ATTACHMENT E - SITE PHOTOGRAPHS



Skaalen Assured Wetland Determination
Skaalen Retirement Services
Photos taken April 21, 2016

Photo Log
Town of Dunn, Dane County, Wisconsin
Stantec Project #: 193704241



Photo 1. Sample point P1; view north



Photo 2. Sample point P1; view east



Photo 3. Sample point P1; view south



Photo 4. Sample point P1; view west



Photo 5. Sample point P2; view north



Photo 6. Sample point P2; view east with fill piles visible in northeast corner



Photo 7. Sample point P2; view south



Photo 8. Sample point P2; view west



Stantec

Skaalen Assured Wetland Determination
Skaalen Retirement Services
Photos taken April 21, 2016

Photo Log
Town of Dunn, Dane County, Wisconsin
Stantec Project #: 193704241



Photo 9. Sample point P3; view north with fill pile visible in northeast corner



Photo 10. Sample point P3; view east



Photo 11. Sample point P3; view south



Photo 12. Sample point P3; view west



Skaalen Retirement Services
Budnar Parcel
Project #: 20190172
October 11, 2019

October 11, 2019

Kris Krentz
Skaalen Retirement Services
400 North Morris Street
Stoughton, WI, 53589

RE: Wetland Determination Summary – Budnar Parcel, Town of Dunn, Dane County, Wisconsin

Dear Kris:

Heartland Ecological Group, Inc. (“Heartland”) completed an assured wetland determination at the Budnar Parcel site on May 14, 2019 at the request of Skaalen Retirement Services. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program (Attachment 5, Qualifications). The 13.58-acre site (the “Study Area”) lies northeast of the intersection of County Trunk Highway (CTH) AB and CTH MN, in the northwest $\frac{1}{4}$ of Section 1, T6N, R10E, Town of Dunn, Dane County, Wisconsin (Attachment 1, Figure 1). The purpose of the wetland delineation was to determine the location and extent of wetlands within the Study Area. There were no wetlands identified within the Study Area (Attachment 1, Figure 6).

Methods

Wetland determinations were based upon the criteria and methods described in the USACE Wetlands Delineation Manual, T.R. Y-87-1 (“1987 Corps Manual”) and the applicable Regional Supplement to the Corps of Engineers Wetland Delineation Manual. In addition, the Guidance for Submittal of Delineation Reports to the St. Paul District USACE and the WDNR (WDNR, 2015) was followed in completing the wetland determination and report.

The determination utilized available resources including the U.S. Geological Survey (USGS) WI 7.5 Minute Series (Topographic) Map (Attachment 1, Figure 2), the Soil Survey Geographic (SSURGO) Database, Web Soil Survey (Attachment 1, Figure 3), the Wisconsin DNR’s Surface Water Data Viewer *Wetland Indicator & Soils* data layer (Attachment 1, Figure 4), the Wisconsin DNR’s *Wisconsin Wetland Inventory* data layer (Attachment 1, Figure 5), and aerial imagery available through the U.S. Department of Agriculture (USDA) Farm Service Agency’s (FSA) National Agriculture Imagery Program (NAIP), Google Earth™, and Dane County’s interactive mapping. The USGS National Hydrography Dataset is included on Figures 2 and 5.

Results

According to the WETS analysis using the previous three (3) months of precipitation data, conditions encountered at the time of the fieldwork were expected to be normal for the time of year (Attachment 2, WETS Analysis). Site conditions observed during the field investigation were confirmed to be normal.



The topography within the Study Area was generally gently sloping to the south, towards CTH MN. A topographic high of approximately 920 feet above mean sea level (msl) was observed at the northern limits of the Study Area. A topographic low of approximately 865 feet above msl was observed at the southern limits of the Study Area, adjacent to CTH MN (Attachment 1, Figures 2 and 6). Land uses within the Study Area consisted of pasture and an old farmstead with recently planted trees in the front of the property and old pasture behind the farmstead. Surrounding areas were primarily agricultural row cropping to the west, north, and east. An area of wetlands is located to the south of CTH MN but does not extend into the Study Area.

Soils mapped by the NRCS Soil Survey within the Study Area and their hydric status are summarized in Table 1 and illustrated on Figure 3. Those areas of the Study Area with hydric or potentially hydric soils mapped by the NRCS were the primary focus of the field wetland determination. The Wisconsin Wetlands Inventory (WWI) mapping (Attachment 1, Figure 5) does not identify wetlands within the Study Area.

Table 1. Summary of NRCS Mapped Soils within the Study Area

Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
DnC2: Dodge silt loam, 6-12% slopes, eroded	Dodge-Eroded	80-90	Drumlins	No
	St. Charles-Eroded	7-13	Till plains	No
	McHenry-Eroded	3-7	Moraines	No
MdC2: McHenry silt loam, 6-12% slopes, eroded	McHenry-Eroded	85-95	Moraines	No
	Kendall	2-7	Drainageways	No
	Kidder-Eroded	3-8	Moraines	No
PoA: Plano silt loam, gravelly substratum, 0-2% slopes	Plano-Gravelly substratum	80-90	Outwash plains	No
	Elburn-Gravelly substratum	8-13	Outwash plains	No
	Warsaw	2-7	Outwash plains	No
RaA: Radford silt loam, 0-3% slopes	Radford	80-95	Flood plains, depressions	No
	Otter	2-8	Flood plains, depressions	Yes
	Sable	2-5	Depressions	Yes
	Sebewa	1-4	Depressions	Yes
	Drummer	0-3	Depressions	Yes
ScB: St. Charles silt loam, 2-6% slopes	St. Charles	80-90	Till plains	No
	St. Charles-Moderately well drained	5-10	Till plains	No
	Virgil	3-5	Till plains	No
	Pella	2-5	Drainageways	Yes



Skaalen Retirement Services
Budnar Parcel
Project #: 20190172
October 11, 2019

Wetland determination data sheets (Attachment 3) were completed at one (1) sample point at the lowest point in the Study Area where potential wetlands may be present based on the desktop review and field reconnaissance. Attachment 3 provides photographs, typically at the sample point locations. The sample point location is shown on Figure 6.

Vegetation at the sample point location was comprised of a roughly mowed turf community dominated by Kentucky bluegrass (*Poa pratensis*, FACU) and sugar maple (*Acer saccharum*, FACU). Therefore, the hydrophytic vegetation criteria was not satisfied. No field indicators of hydric soils or wetland hydrology were observed.

Based on the results of the wetland determination, no wetlands are present within the limits of the Study Area.

Heartland recommends that all applicable regulatory agency reviews and permits are obtained prior to beginning work within the Study Area. Heartland can assist with evaluating the need for additional environmental reviews, surveys, or regulatory agency coordination in consideration of the proposed activity and land use as requested but is outside of the scope of the wetland determination.

Experienced and qualified professionals completed the wetland determination using standard practices and professional judgment. Wetland determinations may be affected by conditions present within the Study Area at the time of the fieldwork. All final decisions on wetlands are made by the USACE, the WDNR, and/or sometimes a local unit of government. Wetland determination reviews by regulatory agencies may result in modifications to the findings presented to the Client. These modifications may result from varying conditions between the time the wetland determination was completed and the time of the review. Factors that may influence the findings may include but not limited to precipitation patterns, drainage modifications, changes or modification to vegetation, and the time of year.

Please feel free to contact me if you have any questions regarding this wetland determination.

Regards,

Jeff Kraemer, Principal
Heartland Ecological Group, Inc.
jeff@heartlandecological.com
608.433.9864

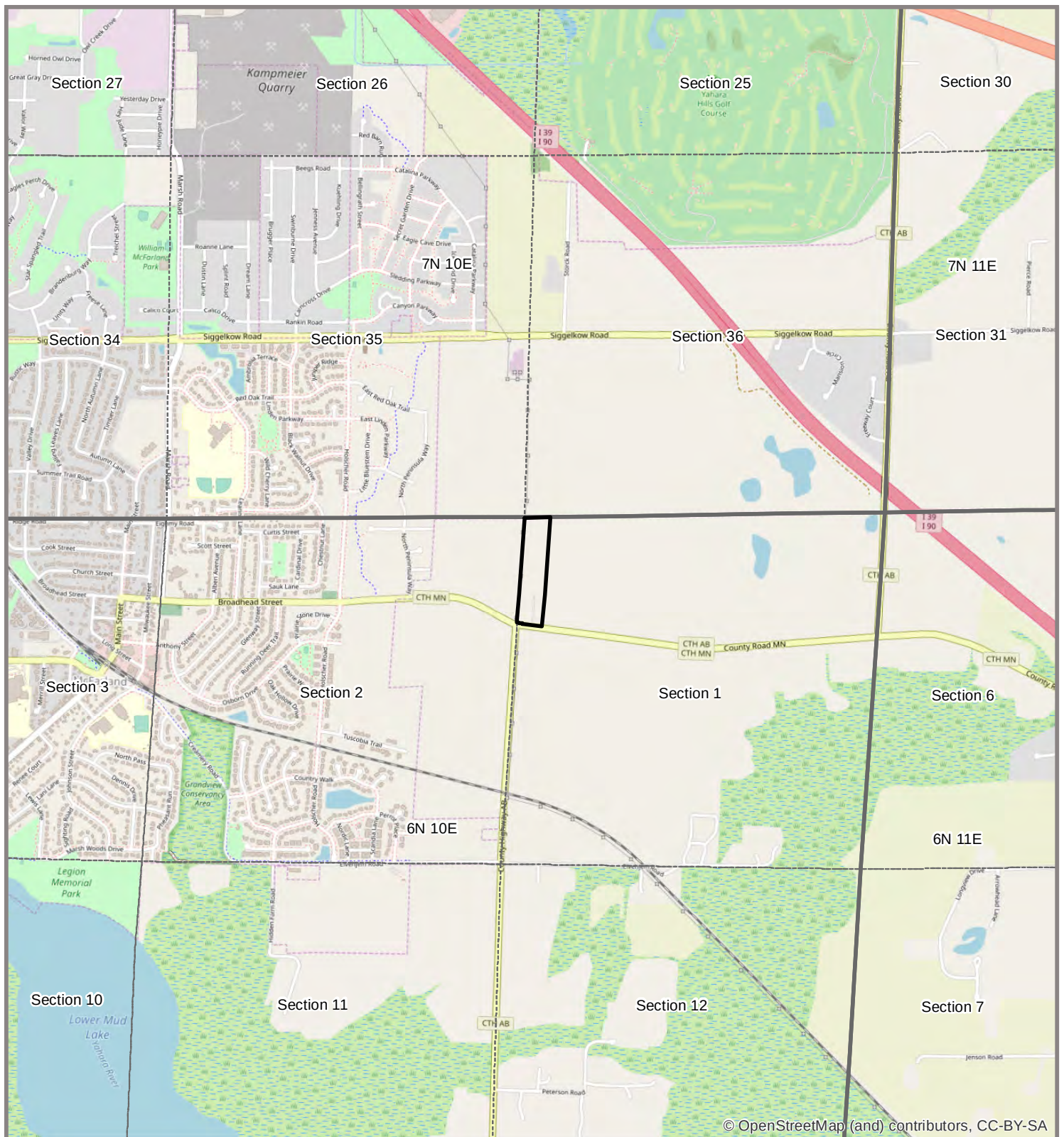
Attachments:

- 1 – Figures 1-6
- 2 – WETS Analysis
- 3 – Wetland Determination Data Sheets
- 4 – Site Photographs
- 5 – Qualifications

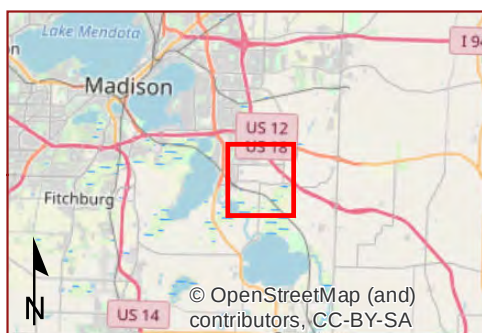


Skaalen Retirement Services
Budnar Parcel
Project #: 20190172
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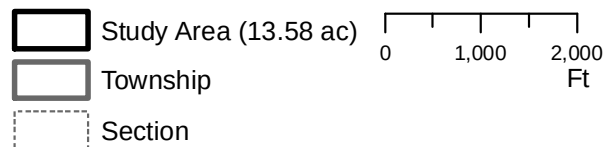
Attachment 1 | Figures



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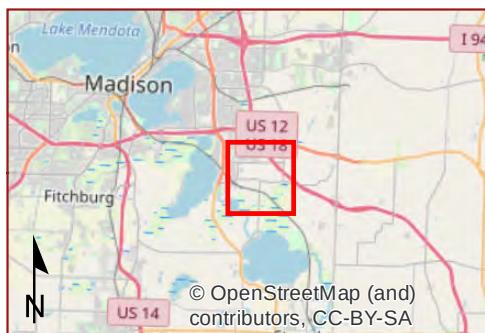
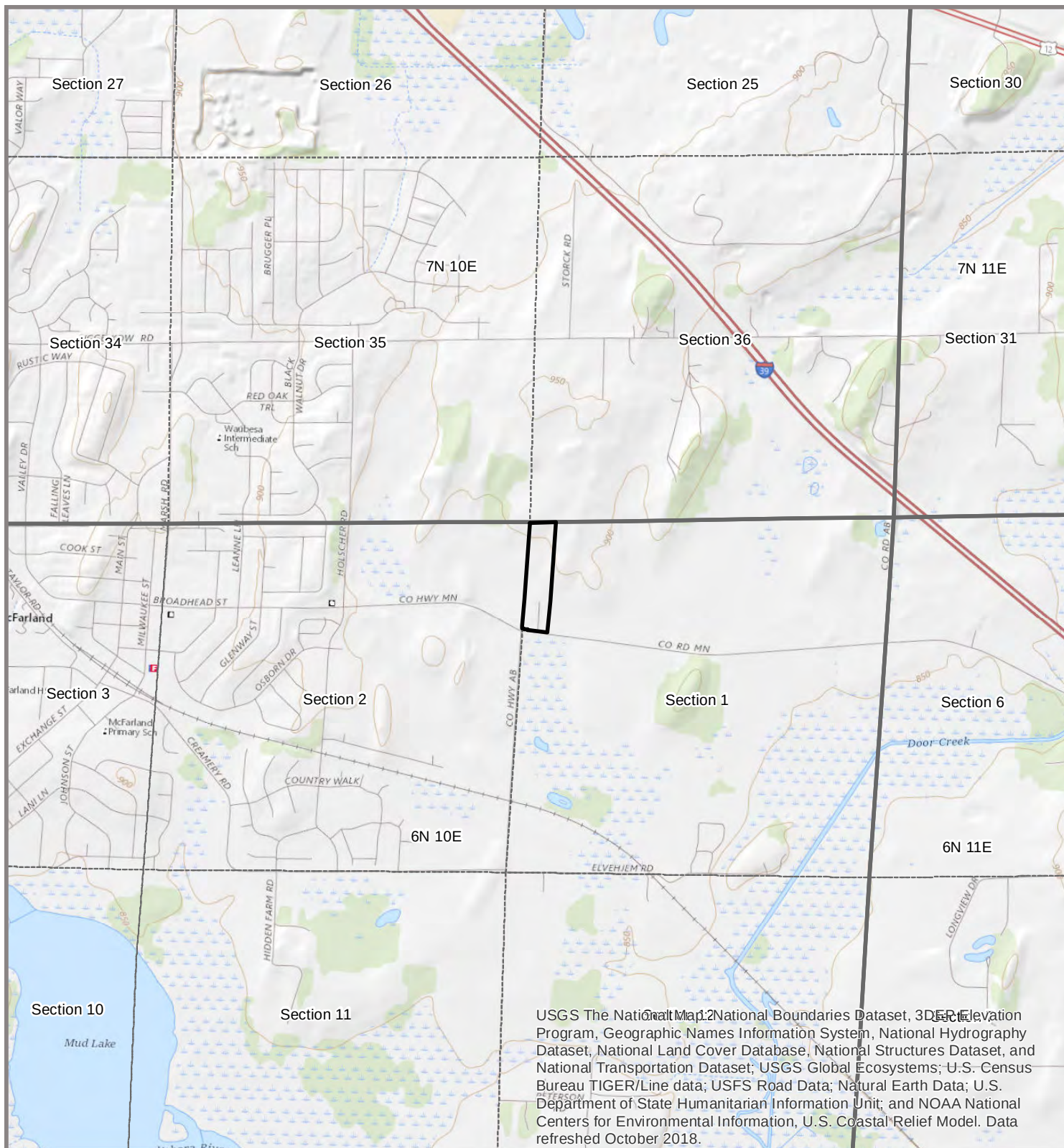
Heartland
ECOLOGICAL GROUP INC

Figure 1. Project Location

Budnar Parcel
Project #20190172
T6N, R10E, S01
T Dunn, Dane Co, WI

OpenStreetMap
Data: HEG

4/5/2019



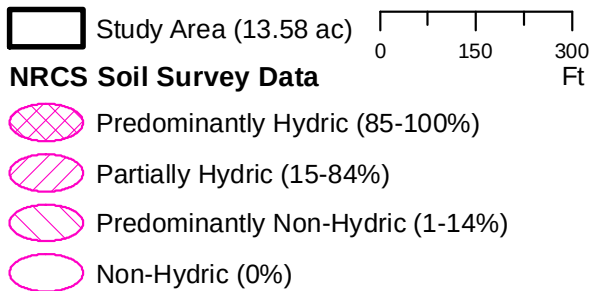
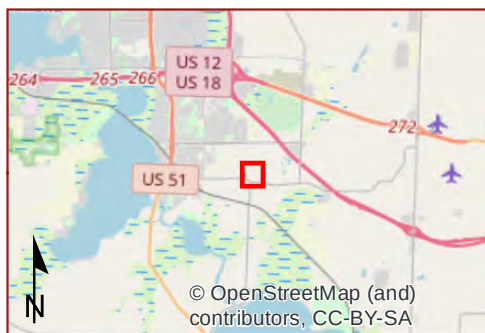
- Study Area (13.58 ac)
- Township
- Section
- 0 1,000 2,000 Ft

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ECOLOGICAL GROUP INC

Figure 2. USGS Topography

Budnar Parcel
Project #20190172
T6N, R10E, S01
T Dunn, Dane Co, WI

USGSTopo
Data: USGS, HEG 4/5/2019



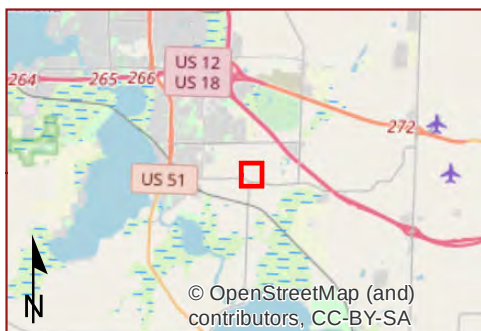
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ECOLOGICAL GROUP INC

**Figure 3. NRCS
Hydric Soils**

Budnar Parcel
Project #20190172
T6N, R10E, S01
T Dunn, Dane Co, WI

2018 NAIP
Data: NRCS, HEG

4/5/2019



- Study Area (13.58 ac)
- Maximum Extent Wetland Indicators
- Minimum Extent Wetland Indicators

0 150 300
Ft

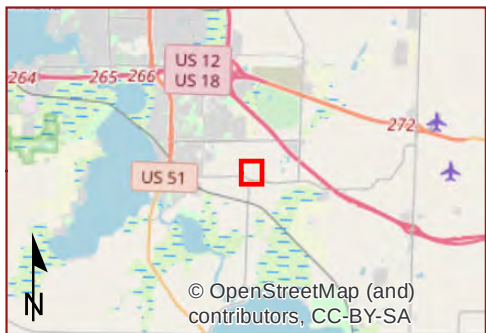
Heartland
ECOLOGICAL GROUP INC

**Figure 4. SWDV
Hydric Indicators**

Budnar Parcel
Project #20190172
T6N, R10E, S01
T Dunn, Dane Co, WI

2018 NAIP
Data: SWDV, HEG

4/5/2019



- Study Area (13.58 ac)
- WWI Wetlands
- NHD Waterway (No Features in Map Extent)

0 150 300
Ft

Heartland
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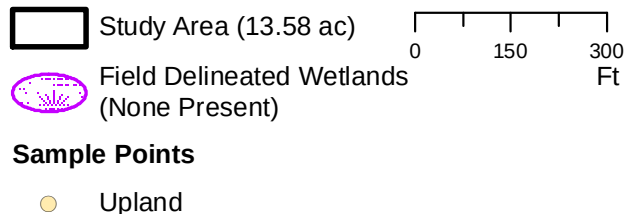
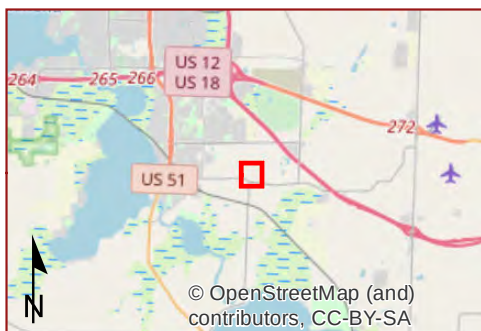
**Figure 5. Wisconsin
Wetland Inventory**

Budnar Parcel
Project #20190172
T6N, R10E, S01
T Dunn, Dane Co, WI

2018 NAIP

Data: WDNR, HEG

6/4/2019



Heartland
 ECOLOGICAL GROUP INC

Figure 6. Field Delineated Wetlands

Budnar Parcel
 Project #20190172
 T6N, R10E, S01
 T Dunn, Dane Co, WI

2018 NAIP
 Data: Dane Co, HEG 5/17/2019



Skaalen Retirement Services
Budnar Parcel
Project #: 20190172
October 11, 2019

Attachment 2 | WETS Analysis

WETS Analysis Worksheet

Project Name: Budnar Parcel
Project Number: 20190172
Period of interest: February - April 2019
Station: Stoughton, WI
County: Dane

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	April	2.75	3.93	4.67
2nd month prior:	March	1.33	2.25	2.73
3rd month prior:	February	0.85	1.60	1.96
Sum =		7.78		

Site determination

Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
3.24	Normal	2	3	6
0.96	Dry	1	2	2
3.19	Wet	3	1	3
Sum =	7.39		Sum*** =	11

*Normal precipitation with 30% to 70% probability of occurrence

Determination: _____ Wet
Dry
X Normal

**Condition value:

Dry = 1
Normal = 2
Wet = 3

***If sum is:

6 to 9 then period has been drier than normal
10 to 14 then period has been normal
15 to 18 then period has been wetter than normal

Precipitation data source: Midwest Regional Climate Center, cli-MATE: MRCC Application Tools Environment

Reference: Donald E. Woodward, ed. 1997. *Hydrology Tools for Wetland Determination*, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.



Skaalen Retirement Services
Budnar Parcel
Project #: 20190172
October 11, 2019

Attachment 3 | Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Budnar Parcel City/County: T Dunn/Dane Co Sampling Date: 5/14/2019
 Applicant/Owner: Skaalen Retirement Services State: WI Sampling Point: P1
 Investigator(s): Jeff Kraemer, Heartland Ecological Group Section, Township, Range: T6N, R10E, S01
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): None Slope %: 1
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Plano silt loam (PoA) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.) A WETS analysis was conducted and indicates that conditions are normal for the time of year of the field investigation. Sample point P1 recorded at the lowest lying portion of the property adjacent to County Road MN within mowed turf vegetation.	

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: P1

Tree Stratum (Plot size: <u>30ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Acer saccharum</u>	25	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
	25	=Total Cover		Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>142</u></td> <td>x 4 = <u>568</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>162</u> (A)</td> <td><u>668</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.12</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>142</u>	x 4 = <u>568</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>162</u> (A)	<u>668</u> (B)	Prevalence Index = B/A = <u>4.12</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>142</u>	x 4 = <u>568</u>																			
UPL species <u>20</u>	x 5 = <u>100</u>																			
Column Totals: <u>162</u> (A)	<u>668</u> (B)																			
Prevalence Index = B/A = <u>4.12</u>																				
Sapling/Shrub Stratum (Plot size: <u>15ft</u>)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
		=Total Cover																		
Herb Stratum (Plot size: <u>5ft</u>)																				
1. <u>Poa pratensis</u>	80	Yes	FACU	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Trifolium hybridum</u>	25	No	FACU																	
3. <u>Bromus inermis</u>	20	No	UPL																	
4. <u>Taraxacum officinale</u>	10	No	FACU																	
5. <u>Cirsium vulgare</u>	2	No	FACU																	
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
12. _____																				
	137	=Total Cover																		
Woody Vine Stratum (Plot size: <u>30ft</u>)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
		=Total Cover																		

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No X

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

No shrubs or woody vines observed. Sample point recorded at the edge of a tree plantation. Vegetation consists of mowed turf.

SOIL

Sampling Point P1

[illegible]



Skaalen Retirement Services
Budnar Parcel
Project #: 20190172
October 11, 2019

Attachment 4 | Site Photographs



Skaalen Retirement Services
Budnar Parcel
Project #: 20190172
October 11, 2019

Attachment 5 | Qualifications



Jeff Kraemer

Principal Scientist

506 Springdale Street

Mount Horeb, WI 53572

jeff@heartlandecological.com

(608) 490-2450

Jeff is the founder of Heartland Ecological Group, Inc. With over 16 years of experience as an environmental consultant, ecological and regulatory policy practitioner, and managing business leader, Jeff provides proven value to clients with his vast experience guiding often complex projects through environmental regulatory and technical challenges applied throughout a diversity of industry sectors. Jeff is recognized by the Wisconsin Department of Natural Resources Wetland Delineation Assurance Program and is the longest standing assured wetland delineator in the state of Wisconsin.

Jeff is a recognized expert in the field of wetland ecology and delineation; wetland restoration and mitigation banking; and regulatory policy and permitting associated with wetlands and waterways. His experience includes: Wetland Determination, Delineation & Functional Assessment; Wetland Restoration, Mitigation, Banking & Monitoring; Botanical / Biological Surveys & Natural Resource Inventories; Rare Species Surveys, Conservation Plans & Monitoring; Habitat Restoration, Wildlife Surveys, SCAT surveys, Environmental Assessments; Local, state, federal permit applications; Expert Witness testimony; and Regulatory permit compliance.

Education

MS, Biological Sciences (Emphasis in Wetland Ecology), University of Wisconsin – Milwaukee, WI, 2003

BS, Biological Sciences (Emphasis in Aquatic Biology) University of Wisconsin – La Crosse, WI, 1999

Regional Supplement Field Practicum
Wetland Training Institute (WTI)
Portage, WI, 2017

Basic and Advanced Wetland Delineation
Training, Continuing Education and Extension,
UW-La Crosse, WI, 2001

Identification of Sedges Workshop,
UW-Milwaukee, Saukville, WI, 2001

Vegetation of Wisconsin Workshop,
UW-Milwaukee, Saukville, WI 2000

Environmental Corridor Delineation Workshop,
Southeastern Wisconsin Regional Planning
Commission (SEWRPC), 2004

Wetland Soils and Hydrology Workshop,
Wetland Training Institute, Toledo, OH, 2003

Critical Methods in Wetland Delineation
University of Wisconsin - La Crosse Continuing
Education and Extension
Madison, WI, 2006 - 2018

Federal Wetland Regulatory Policy Course
Wetlands Training Institute (WTI)
Cottage Grove, WI, 2010

Registrations

Professionally Assured Wetland Delineator,
Wisconsin Department of Natural Resources
(2005-Present)

Wetland Professional in Training (WPIT),
Society of Wetland Scientists Certification
Programs



Project Experience

Energy

Ameren Corporation Transmission Line Projects: LaSalle-Ottawa, LaSalle Co., IL; Wood River Refinery, Madison Co., IL; Rockwood-Big River, Jefferson Co., MO; Saddle Creek 73, Franklin Co., MO.; Havana Rebuild, Mason Co., IL*

Managed support for environmental and GIS services to gain regulatory approvals for various new transmission lines. Provided project support for: transmission line siting; critical issues analysis; route matrices; GIS data acquisition and mapping services, coordination of regulatory agency meetings, completion of field wetland delineations; threatened and endangered species; biological assessment and Section 404 permitting, CPCN approvals; community advisory and public workshop support, and expert witness testimony.

Alliant Energy, Nelson Dewey Power Generation Facility Expansion Project, Cassville, WI

Completed field evaluations and delineations of wetlands in preparation of the National Environmental Policy Act (NEPA) documentation for a proposed expansion of the facility.

Enbridge, Inc., Southern Access Expansion Project, Crude Petroleum Pipeline Project, WI

Completed wetland delineations and habitat assessments along a 343-mile proposed crude petroleum pipeline corridor through Wisconsin as part of Enbridge Energy's Southern Access Expansion Program.

American Transmission Company, Arrowhead to Weston, WI, 345 kV Transmission Line Project

Completed wetland delineations, threatened and endangered plant surveys, and habitat assessments along a 208-mile proposed new electric transmission line.

Midwest Generation, Waukegan Power Generation Facility Expansion Project, Lake County, IL

Completed field evaluations of wetlands and threatened and endangered species in coordination with Section 404 permitting requirements for expansion of the power generation facility.

Commonwealth Edison Co. (ComEd), Prairie Program, Greater Chicago Area, IL

Managed ComEd's Prairie Program for over 10 years that involved nearly 200 acres of prairie restoration and management within their transmission line rights-of-way throughout the greater Chicago area.

Alliant Energy, Hydroelectric Dam, Prairie Du Sac, WI

Conducted purple loosestrife surveys on Lake Wisconsin shorelines and wetlands to develop a purple loosestrife management plan in support of the hydroelectric facility FERC licensing.

Alliant Energy, Edgewater Generation Facility, Sheboygan, WI

Managed and coordinated environmental regulatory process for expansion of existing fly ash disposal facility which required approvals from the USACE and WDNR for wetland impacts associated with the project.

Guardian, Pipeline Wetland Mitigation, Winnebago County, WI

Managed and lead the site selection, design, construction oversight, and long-term monitoring and management of a 30-acre wetland mitigation project consisting of prairie, wetland, and forested wetland restoration. The mitigation successfully compensated for wetland impacts associated with the Guardian gas pipeline construction.



Transportation

Canadian National Railroad, Stanberry Subdivision, Douglas County, WI

Supported CN with gaining approval to construct an approximate 2.5-mile new railroad siding track in Douglas County, WI. Completed wetland delineations and threatened and endangered resources assessments. Completed permit applications and gained approval for approximately 2-acres of wetland impacts and construction of bridges over navigable waterways.

Canadian National Railroad, Hawthorne Hill Phase 2, Douglas County, WI

Supported CN with gaining approval to construct new railroad siding track in Douglas County, WI. Completed assured wetland delineations along six miles of existing track. Completed permit applications for wetland impacts.

Canadian National Railroad, Stone Lake to Big Foot, Washburn County, WI

Completed assured wetland delineations along three miles of existing track and associate wetland delineation reports.

Canadian National Railroad, Nestle to Burlington, Racine County, WI

Completed assured wetland delineations along three miles of existing track and associate wetland delineation reports.

Wisconsin Department of Transportation (WisDOT), Neptune Wetland Mitigation Monitoring, Richland County WI

Completed annual comprehensive vegetation surveys, mapping, performance evaluations, and reporting of a 50-acre wetland mitigation site.

WisDOT, Threatened Plant Species Consultation, Port Wing, WI

Completed comprehensive study of a threatened plant species population in support of STH 13 Reconstruction project including preparation of relocation and monitoring plan, physical relocation of plants, and follow-up annual monitoring.

WisDOT, Wildcat Mountain Wetland Mitigation Monitoring, Vernon County, WI

Completed comprehensive vegetation surveys, mapping, performance evaluations, and reporting of 38-acre wetland mitigation site.

WisDOT, World Dairy Center Wetland Mitigation Bank, Madison, WI

Led the baseline studies, design and approval of an approximate 200-acre compensatory wetland mitigation bank on behalf of the WisDOT. The project involved lengthy stakeholder coordination, detailed hydrology evaluations and assessments, complex wetland determinations. The mitigation plan consisted of restoration of farmed and drained organic soils utilizing drain tile valves to wet meadow, sedge meadow, shallow marsh and mesic prairie.

City of Stoughton, Academy Street Reconstruction, Stoughton, WI

Completed wetland assessments and delineations within the study area of the Academy Street reconstruction project.

City of Tomah, Gopher Avenue Reconstruction, Tomah, WI

Completed wetland assessments and delineations within the project area of the Gopher Avenue reconstruction project.

Residential & Commercial Development

Veridian Homes, Smiths Crossing, Sun Prairie, WI

Completed wetland delineations on the approximate 50-acre portion of the proposed residential development project. Completed wetland permit applications and gained approval for impacts to jurisdictional wetlands. Completed and gained approval for artificial wetland exemptions per WI Act 183.



Hovde Properties, Sprecher Road Property, Madison, WI

Completed wetland delineations on the approximate 100-acre property proposed for residential and commercial development. Completed and gained approval for artificial wetland exemptions per WI Act 183.

Ruedeusch Development and Construction, Packers Avenue Parcel, Madison, WI

Completed wetland delineations on the approximate 30-acre property proposed for development. Completed and gained approval for artificial wetland exemptions per WI Act 183.

Newport Development Corp., Briarwoods Condominiums, Caledonia, WI

Completed wetland delineations on the approximate 10-acre property proposed for development. Completed and gained approval for artificial wetland exemptions per WI Act 183.

William Ryan Homes, West Prairie Village, Sun Prairie, WI

Completed wetland delineations throughout the approximate 80-acre property proposed for development. Completed and gained approval for artificial wetland exemptions per WI Act 183 and NR103.06.

Bielinski Homes, Chapman Property, Mukwonago, WI

Completed wetland delineations throughout the approximate 65-acre property proposed for residential development.

Logistics Property Company, Nelson-Heckel Properties, Kenosha County, WI

Completed wetland delineations throughout the approximate 105-acre property proposed for commercial development.

Country View Estates Development Project, DeForest, WI

Completed wetland delineation/evaluation, wetland permitting, and mitigation planning in support of a 400-acre mixed residential/commercial/recreational development project.

Industrial, Manufacturing & Institutional Facilities

Berlon Industries Expansion Project, Hustisford, WI

Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation planning in support of the expansion of the industrial facility.

Ashley Furniture Industries Expansion Project, Arcadia, WI

Developed and gained WDNR/USACE approval for 35-acre wetland mitigation plan in support of wetland impact application for expansion of the manufacturing facility; Managed the construction of the wetland bank and completed over 10 years of monitoring and management through project close-out.

AllEnergy Proposed Sand Mine, Trempealeau County, WI

Completed wetland delineations, wetland permitting support, and wetland mitigation support for a proposed sand mine in Trempealeau County. The project consisted of over 500 acres of wetland delineation and wetland and waterway permitting associated with a rail spur expansion. Supported community engagement through presentations at various town hall meetings.

Conway Central Express Expansion Wetland Permitting, Franklin, WI

Completed wetland delineation/evaluation, wetland permitting, and wetland mitigation design for expansion of the trucking facility.

Morrison Creek Cranberry Company, Wetland Mitigation Bank Monitoring and Remediation, Oakdale, WI

Completed annual mitigation site monitoring, vegetation surveys, and performance evaluations of 60-



acre mitigation bank site. Completed mitigation remediation management plan for compliance with USACE performance standards.

Northwestern Mutual Campus Facility, Native Landscape Management, Franklin, WI

Managed and coordinated the development of a native landscape plan for the 50 acres of open space surrounding Northwestern Mutual's campus facility. The plan consisted of wetland, woodland, and prairie restoration. Managed and coordinate the implementation of the native landscape installation and long-term management.

Daybreak Foods, Proposed Facility Expansion, Lake Mills, WI

Completed wetland assessment and delineations on over 175 acres of various properties of DayBreak Foods. Provided wetland regulatory guidance to support the expansion of the egg production and processing facilities.

Sinsinawa Dominican Sisters, Grant County, WI

Completed wetland delineations on the 57-acre Sinsinawa Dominican Sisters property in support of a land use planning study.

Government & Non-Government Organizations

City of Fitchburg, Fitchburg Northeast Neighborhood Plan, Fitchburg, WI

Completed wetland mapping and assessment and developed wetland protection standards for the City of Fitchburg's NE Neighborhood Plan.

Lake Koshkonong Wetlands Association, Lake Koshkonong Water Level and Wetland Studies, Lake Koshkonong, WI

Developed and conducted various scientific wetland studies for development of a water level management plan: E. prairie fringed orchid hydrology study; Floodplain forest/hydrology study; Floristic quality assessment/vegetation mapping within 4000 acres of wetlands on behalf of the Lake Koshkonong Wetlands Association.

Richland Center Utilities, New Force Main Project, Richland Center, WI

Supported the planning and approval of a new force main utility corridor on behalf of Richland Center Utilities. Completed wetland delineations and threatened and endangered species assessments along the approximate 3.5-mile project corridor. Completed wetland and waterway permit applications, wetland restoration plans, and completed annual monitoring of restored wetland areas.

Portage Parks Department, Samuelson Fen Restoration, Portage, IN

Developed a restoration plan to restore a degraded 30-acre fen, conducted vegetation surveys, floristic quality assessments and hydrology monitoring.

Badger Prairie Health Care Center Expansion, Verona, WI

Completed wetland delineation/evaluations and wetland permitting in support of the expansion of the healthcare facility.

City of Fitchburg, Native Restoration Support, Fitchburg, WI

Assisted the City of Fitchburg with restoration activities on multiple projects involving incorporating native restoration within various regional stormwater and outlot facilities.

City of Tomah, Proposed Bike Trail Project, Tomah, WI

Completed wetland delineations along an approximate 1-mile proposed bike trail path on behalf of the City of Tomah.

City of Sun Prairie, Sheehan Park, Sun Prairie, WI

Completed wetland delineations throughout the 50-acre Sheehan Park on behalf of the City of Sun Prairie.



City of Madison, Various Projects, Madison, WI

Completed numerous wetland delineations on behalf the City of Madison in support of stormwater improvement and other facility improvement projects.

Private Landowners & Recreational Properties

Erin Hills Golf Course, Washington County, WI

Completed wetland delineations throughout the approximate 200-acre golf course property. Provided wetland regulatory guidance in support of the renovation of Erin Hills in preparation for hosting the 2017 U.S. Open championships.

La Belle Golf Course, The Prestwick Group, Inc., Lac La Belle, WI

Completed wetland delineations throughout the approximate 250-acre golf course property. Provided wetland regulatory guidance in support of the renovation of the La Belle Golf Course.

Big Hollow Wetland Mitigation Bank, Spring Green, WI

Completed wetland delineations on the approximate 200-acre property and evaluated the potential for developing a private wetland mitigation bank. Coordinated detailed hydrology monitoring and modeling to address potential off-site water impacts and support the development of the hydrology restoration plan. Completed the prospectus documents and submittals to the Interagency Review Team. Organized and led public informational meetings, and various stakeholder meetings to address local concerns.

The Farm Golf Course, Cottage Grove, WI

Completed wetland delineations throughout the approximate 100-acre golf course property. Provided wetland regulatory guidance in support of residential development adjacent to the golf course.

Wetland Delineation Report
Helmke Property
Town of Dunn, Wisconsin

Prepared For:
Kevin Urso
Urso Brothers, LLC
4720 Farwell Street
McFarland, WI 53558

Prepared By:
Vierbicher
400 Viking Drive
Reedsburg, WI 53959

Prepared On:
June 4th, 2018
Project #180168

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vierbicher
planners | engineers | advisors



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Narrative

Narrative

1.1 Wetland Delineator Qualifications

Neil Pfaff holds two Bachelor of Science degrees: One from the University of Wisconsin – Stevens Point in Water Resources with a Major in Watershed Administration, as well as double minors in Soil Science and Geographic Information Systems and Spatial Analysis. Mr. Pfaff also holds a Bachelors of Science degree from the University of Wisconsin – Platteville in Environmental Engineering. Mr. Pfaff holds the following certifications and/or has completed the following courses that prepared him for performing wetland determinations and delineations in Wisconsin using the Army Corps of Engineers 1987 Manual Method:

- Wisconsin Certified Soil Tester (CST # 1041792)
- Professional Hydrologist – Wisconsin # 202-111
- Professional Hydrologist – American Institute of Hydrology #14-H-6020
- Professional Engineer – Wisconsin #43984 – 6
- Natural Resources 405 Plant Identification (July – Sept. 2005, UW Stevens Point)
- Basic Wetland Delineation Training(August 2013, Sturgeon Bay, WI – UW La Crosse Continuing Education/Extension)
- Advanced Wetland Delineation Training(July 2014, La Crosse, WI – UW La Crosse Continuing Education/Extension)

1.2 Introduction

On May 22, 2018, Neil Pfaff of Vierbicher performed a wetland determination and delineation on the subject property. The subject property is located north of Elvehjem Road, west of County Highway AB in the Town of Dunn (SW 1/4 SW 1/4 Sec. 1 T6N R10E Dane County, Wisconsin). The five areas delineated are depicted on Figure II. This wetland delineation was completed at the request of the client. The Wisconsin Department of Natural Resources Wetland Indicator Maps listed the site likely to contain wetlands. Therefore, wetland delineation was performed prior to applying for a Notice of Intent to disturb the land.

The project area primarily consists of both undisturbed vegetation and maintained farmland.

The investigation area was 22.3 Acres.

The purpose of this report is to explain the results of the wetland delineation and to describe the features of the wetlands and non-wetlands (uplands) in the project area.

1.3 Methods

The following reference materials were reviewed prior to performing field work:

- National Cooperative Soil Survey, Web Soil Survey.
- Wisconsin Wetland Inventory Maps (WDNR Surface Water Data Viewer - Wetlands Theme).
- U.S.G.S. 7.5 Minute Topographical Map, 7.5 min. Quadrangle.
- Natural Resource Conservation Service, hydric soil list for Dane County.



The wetland determinations and the delineations followed the procedures for the Routine Method set forth in The Corps of Engineers Wetlands Delineation Manual (US Army Corps of Engineers 1987) and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region. They also followed the methods set forth in the Basic Guide to Wisconsin Wetlands and their Boundaries (WI Dept. of Administration 1995).

a) Method of Data Collection

Vegetation, hydrology and soil information were gathered in sample plots and recorded on USACE data sheets. At each plot, a plot center was established and the presence or absence of normal circumstances or disturbances was noted. Next, herbaceous vegetation was sampled within a circular 5-foot radius plot. After that, vines, shrubs and trees were sampled within a circular 30-foot radius plot, centered on the herbaceous plot. Next, a 20-inch-deep soil pit was dug at the plot center. The presence or absence of hydrology indicators in the soil pit and within the surrounding 30-foot circular plot was noted. Finally, the soil profile in the pit was examined and described. A determination was then made as to whether the site was wetland or upland.

b) Location of Transects

Sample plots were located inside of areas that appeared to be wetlands. If the sample plot data suggested that the location was inside of a wetland, a second plot was placed in an upslope location with a different plant community. If data collected at this plot suggested that the location was inside of the upland, no further plots were sampled. Otherwise, the process was repeated. A total of 9 plots were sampled, 4 inside of wetlands and 5 on the uplands (Figure 2).

c) Procedure for Location Wetland Boundaries

The wetland boundaries were located by observing increases in elevation and the appearance of healthy, dominated populations of upland plants like grasses (*Phalaris* – FACU), and Queen Anne's lace (*Daucus carota* – UPL), as one moved upslope, away from the wetland. The wetland boundaries were recorded via GPS.

1.4 Results and Discussion

a) Regional Geology & Soils

The geology of the surrounding region consists of glacial deposits, primarily outwash plains and ground moraines. The land surfaces are gently sloping in the higher areas, which are ground moraine, and nearly level in low-lying areas, which are often outwash plains. Soils that formed in ground moraines have silt loam and loamy surface layers underlain by sandy loam material. Soils that formed in glacial outwash have silt loam and silty clay loam surface layers underlain by sand and gravel.

b) Historic Aerial Photography Review

Aerial photographs of the area were obtained from Google Imagery. Additional aerial photographs were obtained from the Dane County GIS website. These



photographs were used to evaluate land use and wetland indicators of the subject property over time. Each document provided a point-in-time record of visible features of the landscape. Photographic coverage of the site and surrounding areas was available for the years of 2017, 2010, 2008, 2005, 2004, 2000, 1987, 1968, 1955 and 1937. Copies of these photographs are included in Appendix IV.

c) Wetlands

(1) Overview of Wetlands & Wetland Boundary Characteristics

The wetland extents are limited to the eastern parcel near an unnamed tributary on the adjacent parcel.

(2) Wetland Vegetation

The wetland was primarily comprised of undisturbed vegetation. The wetland was dominated by reed canary grass (*Phalaris arundinacea* – FACW), Grey Willow (*Salix interior* – FACW) and wild parsnip (*Pastinaca sativa* – UPL). Overall the vegetation present is typically associated with low quality wetland and invasive plants.

(3) Wetland Hydrology

The primary sources of water to the wetland are surface water runoff.

Prior Rainfall Analysis:

(USDA Field Office Data – WETS Station: Dane County Regional Airport, Wisconsin.)

Month	30% Chance Less Than Normal Rainfall	Normal Rainfall	30% Chance More than Normal Rainfall	Actual Rainfall	Condition, Dry, Wet, Normal	Condition Value	Month Weight Value	Product of previous two columns
Apr	2.58	3.35	3.89	2.14	Dry	1	3	3
Mar	1.28	2.28	2.77	0.74	Dry	1	2	2
Feb	0.69	1.28	1.56	2.50	Wet	3	1	3
								8

(If sum is 6-9, prior period dry; 10-14, prior period normal; 15-18, prior period wet. From USDA, Natural Resource Conservation Service. 1997. Hydrology Tools for Wetland Determination. Part 650. Engineering Field Handbook.)

A sum of 8 indicates that moisture conditions are dryer than normal. Although the WETS table depicts the site conditions as “dryer than normal”, that was not the case during the on-site delineation. May rainfall totals as of May 21st, 2018 were depicted as 8.68 inches, significantly greater than the average monthly rainfall for May at 3.25 inches. Additionally the site received 0.79 inches of rain within the 48-hour period prior to the on-site delineation.

(4) Wetland Soils

The United States Department of Agriculture – Natural Resources Conservation Service mapped soil of the wetland as Palms Muck (PA) 0-2% slope, Colwood silt loam (Co), 0-2% and Dresden silt loam (DsB), 2 to 6% slope.



(5) Wisconsin Wetland Inventory Map

The Wisconsin Wetland inventory map indicates the presence of hydric soils and potential wetlands within the project boundary.

d) Uplands

Upland consisted of primarily open landscape with common prairie grasses (Plots 1B, 2B, 3B, 4B & 5A).

(1) Upland Vegetation

The upland consisted primarily of Kentucky bluegrass (*Poa pratensis* – FACU), and Queen Anne's lace (*Daucus carota* – UPL).

(2) Upland Hydrology

None of the upland sample plots showed hydrology indicators. All areas of the upland were well-elevated above the wetlands.

(3) Upland Soils

The Natural Resource Conservation Service – mapped soils of the uplands primarily consist of Batavia silt loam (BbA) and Kegonsa silt loam (KeB).

No hydric indicators were noted in any of the upland sample plots.

1.5 Conclusion

The project area consists of a relatively flat landscape. The vegetation, soils and hydrology has not been altered. Wetland delineations are based upon the presence of hydrology, hydric soils and wetland plants.

The wetland boundary marked in the field is the best estimate of the location of the boundary based on the available vegetation, hydrology, and soil evidence on May 22, 2018. Wetland boundaries can change overtime with changes in vegetation, precipitation, or regional hydrology. The US Army Corps of Engineers and/or the Wisconsin Department of Natural Resources have authority to make the final decision regarding the wetland boundary. Personnel from these agencies may adjust the boundary map upon field inspection. The client is advised to delay any development within the wetland boundary until receiving a formal opinion from regulatory authorities regarding the presence of jurisdictional wetlands on the property.

1.6 References

Hurt, G.W. & Vasilas, L.M. 2010. Field indicator of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, Version 7.0. Natural Resource Conservation Service, United States Department of Agriculture.

US Army Corps of Engineers, State of Wisconsin-Nation Wetland Plant List Final Draft Ratings, Cold Regions Research & Engineering Laboratory (CRREL).

US Army Corps of Engineers, Waterways Experiment Station. 1987. Corps of Engineers Wetlands Delineation Manual. Wetlands Research Program Technical Report Y-87-1.

Wisconsin Department of Administration, Coastal Management Program. 1995. Basic Guide to Wisconsin's Wetlands and their Boundaries.





Figures

Figure 1: USGS Quad Map

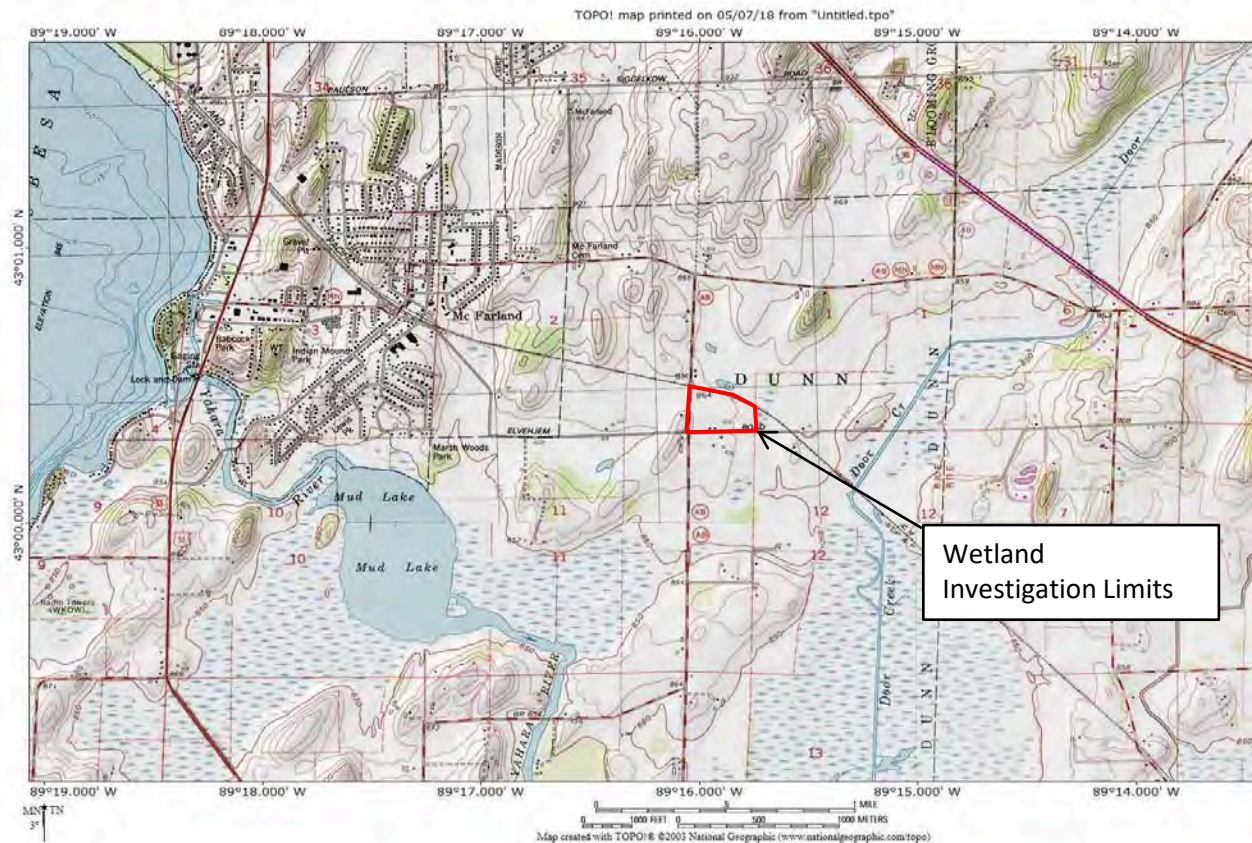


Figure 2: Project Area, Wetlands Boundaries
& Sample Plots

[illegible]

Figure 3: USDA -NRCS Soils Map



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ad	Adrian muck	1.4	5.6%
BbA	Batavia silt loam, gravelly substratum, 0 to 2 percent slopes	9.6	39.4%
Co	Colwood silt loam, 0 to 2 percent slopes	2.6	10.8%
DnC2	Dodge silt loam, 6 to 12 percent slopes, eroded	0.5	1.9%
DsB	Dresden silt loam, 2 to 6 percent slopes	4.5	18.4%
KeB	Kegonsa silt loam, 2 to 6 percent slopes	5.1	20.8%
KrD2	Kidder soils, 10 to 20 percent slopes, eroded	0.0	0.0%
MdD2	McHenry silt loam, 12 to 20 percent slopes, eroded	0.8	3.1%
Totals for Area of Interest		24.4	100.0%

Figure III - USDA Soils Map

Project Name: Helmke Property
 Project Location: Town of Dunn, WI

Figure 4: WDNR Surface Water Data Viewer
Wetland Map

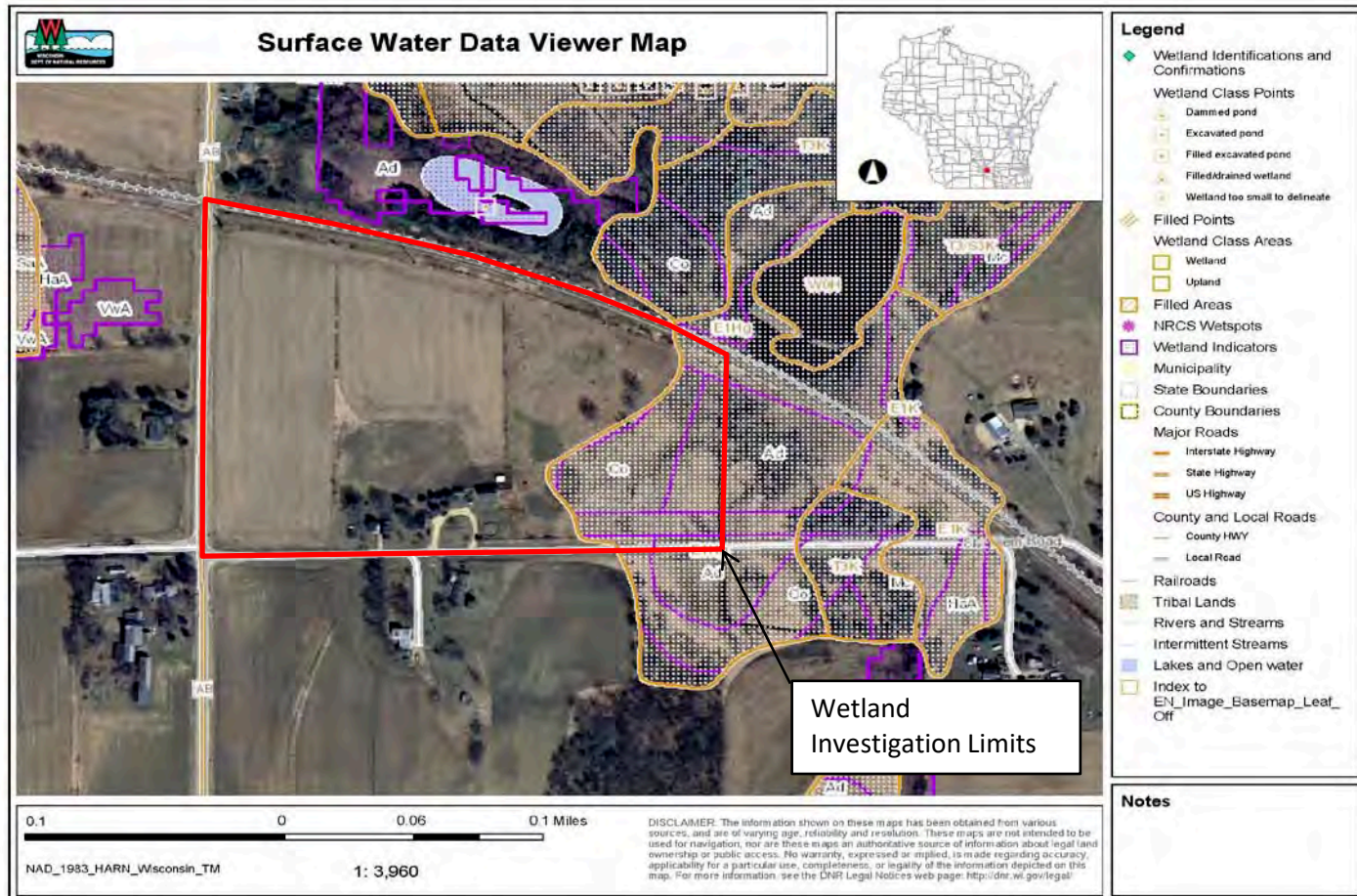


Figure IV-WDNR Surface Water Data Viewer Wetland Map

Project Name: Helmke Property

Project Location: Village of McFarland, WI

Appendix

Appendix I: Site Photos



Plot 1A located north of Elvehjem Road



Plot 1B viewing south at property and Elvehjem Road



Plot 2A viewing southeast



Plot 2B viewing southeast



Plot 3A viewing southwest



Plot 3B viewing north



Plot 4A viewing north



Plot 4B viewing north



Plot 5A viewing southeast

Appendix II: Data Sheets

Project/Site: Helmke Property City/County: Dunn/Dane Sampling Date: 5-22-2018
Applicant/Owner: Urso Brothers State: WI Sampling Point: 1A
Investigator(s): Neil Pfaff Section, Township, Range: S1 T6N R10E
Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope %: N/A
Subregion (LRR or MLRA): LRR K, MLRA 95B Lat: 43.006364 Long: 89.264995 Datum: NAVD1988
Soil Map Unit Name: Adrian muck NWI classification: F0K

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

Hydrophytic Vegetation Present?	Yes <u> X </u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u> X </u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> X </u>	No <u> </u>	
Remarks: (Explain alternative procedures here or in a separate report.)			

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)					
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)			
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)			
☒ Saturation (A3)	☐ Marl Deposits (B15)	☐ Moss Trim Lines (B16)			
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Dry-Season Water Table (C2)			
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Crayfish Burrows (C8)			
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Saturation Visible on Aerial Imagery (C9)			
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Stunted or Stressed Plants (D1)			
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ Geomorphic Position (D2)			
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)			
☐ Sparsely Vegetated Concave Surface (B8)		☐ Microtopographic Relief (D4)			
		☒ FAC-Neutral Test (D5)			
Field Observations:					
Surface Water Present?	Yes ☐ No ☒	Depth (inches):	Wetland Hydrology Present? Yes ☒ No ☐		
Water Table Present?	Yes ☒ No ☐	Depth (inches): 13			
Saturation Present?	Yes ☒ No ☐	Depth (inches): 10			
(includes capillary fringe)					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: USDA WETS Table depicts conditions are dryer than normal; however the rainfall total for the site as of May 21, 2018 was depicted as totalling 8.68 inches, significantly greater than the average May rainfall.					

VEGETATION – Use scientific names of plants.

Sampling Point: 1A

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>100</u></td> <td>x 2 = <u>200</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>270</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.35</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>100</u>	x 2 = <u>200</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>115</u> (A)	<u>270</u> (B)	Prevalence Index = B/A = <u>2.35</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>100</u>	x 2 = <u>200</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>115</u> (A)	<u>270</u> (B)																			
Prevalence Index = B/A = <u>2.35</u>																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. <u>Salix interior</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover																				
Herb Stratum (Plot size: _____)																				
1. <u>Phalaris arundinacea</u>	<u>90</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Daucus carota</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
3. <u>Carduus nutans</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Taraxacum</u>	<u>2</u>	<u>No</u>	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ =Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

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

SOIL

Sampling Point 1A

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Helmke Property City/County: Dunn/Dane Sampling Date: 5-22-2018
 Applicant/Owner: Urso Brothers State: WI Sampling Point: 1B
 Investigator(s): Neil Pfaff Section, Township, Range: S1 T6N R10E
 Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): convex Slope %: N/A
 Subregion (LRR or MLRA): LRR K, MLRA 95B Lat: 43.006364 Long: 89.264995 Datum: NAVD1988
 Soil Map Unit Name: Adrian muck NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u> </u> No <u>X</u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) ☐ High Water Table (A2) ☐ Aquatic Fauna (B13) ☐ Saturation (A3) ☐ Marl Deposits (B15) ☐ Water Marks (B1) ☐ Hydrogen Sulfide Odor (C1) ☐ Sediment Deposits (B2) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Drift Deposits (B3) ☐ Presence of Reduced Iron (C4) ☐ Algal Mat or Crust (B4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ ? Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: USDA WETS Table depicts conditions are dryer than normal; however the rainfall total for the site as of May 21, 2018 was depicted as totalling 8.68 inches, significantly greater than the average May rainfall.	

VEGETATION – Use scientific names of plants.

 Sampling Point: 1B

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>400</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.08</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>130</u> (A)	<u>400</u> (B)	Prevalence Index = B/A = <u>3.08</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>70</u>	x 2 = <u>140</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>40</u>	x 4 = <u>160</u>																			
UPL species <u>20</u>	x 5 = <u>100</u>																			
Column Totals: <u>130</u> (A)	<u>400</u> (B)																			
Prevalence Index = B/A = <u>3.08</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: _____)																				
1. <i>Phalaris arundinacea</i>	70	Yes	FACW	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u> </u> 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <i>Daucus carota</i>	20	No	UPL																	
3. <i>Solidago canadensis</i>	20	No	FACU																	
4. <i>Carduus nutans</i>	10	No	FACU																	
5. <i>Taraxacum officinale</i>	10	No	FACU																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		=Total Cover																		
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

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

SOIL

Sampling Point 1B

[illegible]

Project/Site: Helmke Property City/County: Dunn/Dane Sampling Date: 5-22-2018

Applicant/Owner: Urso Brothers State: WI Sampling Point: 2A

Investigator(s): Neil Pfaff Section, Township, Range: S1 T6N R10E

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope %: N/A

Subregion (LRR or MLRA): LRR K, MLRA 95B Lat: 43.006364 Long: 89.264995 Datum: NAVD1988

Soil Map Unit Name: Adrian muck NWI classification: F0K

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

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

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

Hydrophytic Vegetation Present?	Yes <u> X </u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u> X </u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> X </u>	No <u> </u>	
Remarks: (Explain alternative procedures here or in a separate report.)			

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)		
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)			
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)			
☐ Saturation (A3)	☐ Marl Deposits (B15)	☐ Moss Trim Lines (B16)			
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Dry-Season Water Table (C2)			
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Crayfish Burrows (C8)			
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Saturation Visible on Aerial Imagery (C9)			
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Stunted or Stressed Plants (D1)			
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ Geomorphic Position (D2)			
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)			
☐ Sparsely Vegetated Concave Surface (B8)		☐ Microtopographic Relief (D4)			
		☒ FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☒ No ☐ Depth (inches): 19 Saturation Present? Yes ☒ No ☐ Depth (inches): 15 (includes capillary fringe)			Wetland Hydrology Present? Yes ☒ No ☐		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: USDA WETS Table depicts conditions are dryer than normal; however the rainfall total for the site as of May 21, 2018 was depicted as totalling 8.68 inches, significantly greater than the average May rainfall.					

VEGETATION – Use scientific names of plants.

 Sampling Point: 2A

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>175</u></td> <td>x 2 = <u>350</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>185</u> (A)</td> <td><u>390</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.11</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>175</u>	x 2 = <u>350</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>185</u> (A)	<u>390</u> (B)	Prevalence Index = B/A = <u>2.11</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>175</u>	x 2 = <u>350</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
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Column Totals: <u>185</u> (A)	<u>390</u> (B)																			
Prevalence Index = B/A = <u>2.11</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. <i>Salix interior</i>	80	Yes	FACW																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
80 =Total Cover																				
Herb Stratum (Plot size: _____)																				
1. <i>Phalaris arundinacea</i>	80	Yes	FACW																	
2. <i>Heracleum maximum</i>	10	No	FACW																	
3. <i>Galium aparine</i>	10	No	FACU																	
4. <i>Equisetum sylvaticum</i>	5	No	FACW																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
105 =Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				

Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
X 2 - Dominance Test is >50%
X 3 - Prevalence Index is ≤3.0¹
4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point 2A

[illegible]

Project/Site: Helmke Property City/County: Dunn/Dane Sampling Date: 5-22-2018

Applicant/Owner: Urso Brothers State: WI Sampling Point: 2B

Investigator(s): Neil Pfaff Section, Township, Range: S1 T6N R10E

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope %: N/A

Subregion (LRR or MLRA): LRR K, MLRA 95B Lat: 43.006364 Long: 89.264995 Datum: NAVD1988

Soil Map Unit Name: Adrian muck NWI classification: N/A

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

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

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

Hydrophytic Vegetation Present?	Yes _____	No <u> X </u>	Is the Sampled Area within a Wetland? Yes _____ No <u> X </u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes _____	No <u> X </u>	
Wetland Hydrology Present?	Yes _____	No <u> X </u>	
Remarks: (Explain alternative procedures here or in a separate report.)			

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)					
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)			
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)			
☐ Saturation (A3)	☐ Marl Deposits (B15)	☐ Moss Trim Lines (B16)			
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Dry-Season Water Table (C2)			
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Crayfish Burrows (C8)			
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Saturation Visible on Aerial Imagery (C9)			
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Stunted or Stressed Plants (D1)			
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Geomorphic Position (D2)			
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)			
☐ Sparsely Vegetated Concave Surface (B8)		☐ Microtopographic Relief (D4)			
		☐ FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☐ No ☒ Depth (inches): Saturation Present? Yes ☐ No ☒ Depth (inches): (includes capillary fringe)				Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: USDA WETS Table depicts conditions are dryer than normal; however the rainfall total for the site as of May 21, 2018 was depicted as totalling 8.68 inches, significantly greater than the average May rainfall.					

VEGETATION – Use scientific names of plants.

 Sampling Point: 2B

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus alba</u>	60	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>20</u></td> <td>x 3 = <u>60</u></td> </tr> <tr> <td>FACU species <u>190</u></td> <td>x 4 = <u>760</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>220</u> (A)</td> <td><u>870</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.95</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>20</u>	x 3 = <u>60</u>	FACU species <u>190</u>	x 4 = <u>760</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>220</u> (A)	<u>870</u> (B)	Prevalence Index = B/A = <u>3.95</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>20</u>	x 3 = <u>60</u>																			
FACU species <u>190</u>	x 4 = <u>760</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>220</u> (A)	<u>870</u> (B)																			
Prevalence Index = B/A = <u>3.95</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	60	=Total Cover																		
Sapling/Shrub Stratum (Plot size: _____)																				
1. <u>Lonicera tatarica</u>	15	Yes	FACU	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
	15	=Total Cover																		
Herb Stratum (Plot size: _____)																				
1. <u>Phalaris canariensis</u>	80	Yes	FACU	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. <u>Equisetum arvense</u>	20	No	FAC																	
3. <u>Pastinaca sativa</u>	10	No	UPL																	
4. <u>Phleum pratense</u>	30	Yes	FACU																	
5. <u>Alliaria petiolata</u>	5	No	FACU																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
	145	=Total Cover																		
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
	_____	=Total Cover																		

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

SOIL

Sampling Point 2B

[illegible]

Project/Site: Helmke Property City/County: Dunn/Dane Sampling Date: 5-22-2018

Applicant/Owner: Urso Brothers State: WI Sampling Point: 3A

Investigator(s): Neil Pfaff Section, Township, Range: S1 T6N R10E

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope %: 2-6

Subregion (LRR or MLRA): LRR K, MLRA 95B Lat: 43.006364 Long: 89.264995 Datum: NAVD1988

Soil Map Unit Name: Dresden silt loam NWI classification: S0K

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

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

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

Hydrophytic Vegetation Present?	Yes <u> X </u>	No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> X </u> No <u> </u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u> X </u>	No <u> </u>	
Wetland Hydrology Present?	Yes <u> X </u>	No <u> </u>	
Remarks: (Explain alternative procedures here or in a separate report.)			

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)					
☐ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)			
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☐ Drainage Patterns (B10)			
☒ Saturation (A3)	☐ Marl Deposits (B15)	☐ Moss Trim Lines (B16)			
☐ Water Marks (B1)	☐ Hydrogen Sulfide Odor (C1)	☐ Dry-Season Water Table (C2)			
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Crayfish Burrows (C8)			
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Saturation Visible on Aerial Imagery (C9)			
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ Stunted or Stressed Plants (D1)			
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☒ Geomorphic Position (D2)			
☐ Inundation Visible on Aerial Imagery (B7)	☐ Other (Explain in Remarks)	☐ Shallow Aquitard (D3)			
☐ Sparsely Vegetated Concave Surface (B8)		☐ Microtopographic Relief (D4)			
		☒ FAC-Neutral Test (D5)			
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☒ No ☐ Depth (inches): 13 Saturation Present? Yes ☒ No ☐ Depth (inches): 10 (includes capillary fringe)				Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: USDA WETS Table depicts conditions are dryer than normal; however the rainfall total for the site as of May 21, 2018 was depicted as totalling 8.68 inches, significantly greater than the average May rainfall.					

VEGETATION – Use scientific names of plants.

 Sampling Point: 3A

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>90</u></td> <td>x 2 = <u>180</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>20</u></td> <td>x 4 = <u>80</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>260</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.36</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>90</u>	x 2 = <u>180</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>20</u>	x 4 = <u>80</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>260</u> (B)	Prevalence Index = B/A = <u>2.36</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>90</u>	x 2 = <u>180</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>20</u>	x 4 = <u>80</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>260</u> (B)																			
Prevalence Index = B/A = <u>2.36</u>																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. <i>Phalaris arundinacea</i>	90	Yes	FACW																	
2. <i>Phleum pratense</i>	20	No	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
_____ =Total Cover																				
Herb Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
_____ =Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

Hydrophytic Vegetation Indicators:
 _____ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is >50%
☒ 3 - Prevalence Index is ≤3.0¹
 _____ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ☒ No _____

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

SOIL

Sampling Point 3A

[illegible]

Project/Site: Helmke Property City/County: Dunn/Dane Sampling Date: 5-22-2018

Applicant/Owner: Urso Brothers State: WI Sampling Point: 3B

Investigator(s): Neil Pfaff Section, Township, Range: S1 T6N R10E

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope %: 2-6

Subregion (LRR or MLRA): LRR K, MLRA 95B Lat: 43.006364 Long: 89.264995 Datum: NAVD1988

Soil Map Unit Name: Dresden silt loam NWI classification: N/A

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

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

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

Hydrophytic Vegetation Present?	Yes _____	No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes _____	No <u>X</u>	
Wetland Hydrology Present?	Yes _____	No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.)			

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)					
☐ Surface Water (A1)	☐ High Water Table (A2)	☐ Saturation (A3)	☐ Water-Stained Leaves (B9)	☐ Aquatic Fauna (B13)	☐ Surface Soil Cracks (B6)
☐ Water Marks (B1)	☐ Sediment Deposits (B2)	☐ Drift Deposits (B3)	☐ Marl Deposits (B15)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Algal Mat or Crust (B4)	☐ Iron Deposits (B5)	☐ Inundation Visible on Aerial Imagery (B7)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Thin Muck Surface (C7)	☐ Dry-Season Water Table (C2)
					☐ Crayfish Burrows (C8)
					☐ Saturation Visible on Aerial Imagery (C9)
					☐ Stunted or Stressed Plants (D1)
					☐ Geomorphic Position (D2)
					☐ Shallow Aquitard (D3)
					☐ Microtopographic Relief (D4)
					☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☐ No ☒ Depth (inches): Saturation Present? Yes ☐ No ☒ Depth (inches): (includes capillary fringe)				Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: USDA WETS Table depicts conditions are dryer than normal; however the rainfall total for the site as of May 21, 2018 was depicted as totalling 8.68 inches, significantly greater than the average May rainfall.					

VEGETATION – Use scientific names of plants.

 Sampling Point: 3B

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>40</u></td> <td>x 2 = <u>80</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>115</u></td> <td>x 4 = <u>460</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>540</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.48</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>40</u>	x 2 = <u>80</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>115</u>	x 4 = <u>460</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>540</u> (B)	Prevalence Index = B/A = <u>3.48</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>40</u>	x 2 = <u>80</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
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Column Totals: <u>155</u> (A)	<u>540</u> (B)																			
Prevalence Index = B/A = <u>3.48</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: _____)																				
1. <i>Phleum pratense</i>	70	Yes	FACU																	
2. <i>Phalaris arundinacea</i>	40	Yes	FACW																	
3. <i>Solidago canadensis</i>	40	Yes	FACU																	
4. <i>Taraxacum officinale</i>	5	No	FACU																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
155 =Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
=Total Cover																				
Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																				

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

SOIL

Sampling Point 3B

[illegible]

Project/Site: Helmke Property City/County: Dunn/Dane Sampling Date: 5-22-2018

Applicant/Owner: Urso Brothers State: WI Sampling Point: 4A

Investigator(s): Neil Pfaff Section, Township, Range: S1 T6N R10E

Landform (hillside, terrace, etc.): Terrace Local relief (concave, convex, none): Concave Slope %: 2-6

Subregion (LRR or MLRA): LRR K, MLRA 95B Lat: 43.006364 Long: 89.264995 Datum: NAVD1988

Soil Map Unit Name: Kegonsa silt loam NWI classification: F0K

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

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

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u>X</u>	No _____	
Wetland Hydrology Present?	Yes <u>X</u>	No _____	
Remarks: (Explain alternative procedures here or in a separate report.)			

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)					
☐ Surface Water (A1)		☐ Water-Stained Leaves (B9)		☐ Surface Soil Cracks (B6)	
☒ High Water Table (A2)		☐ Aquatic Fauna (B13)		☐ Drainage Patterns (B10)	
☒ Saturation (A3)		☐ Marl Deposits (B15)		☐ Moss Trim Lines (B16)	
☐ Water Marks (B1)		☐ Hydrogen Sulfide Odor (C1)		☐ Dry-Season Water Table (C2)	
☐ Sediment Deposits (B2)		☐ Oxidized Rhizospheres on Living Roots (C3)		☐ Crayfish Burrows (C8)	
☐ Drift Deposits (B3)		☐ Presence of Reduced Iron (C4)		☐ Saturation Visible on Aerial Imagery (C9)	
☐ Algal Mat or Crust (B4)		☐ Recent Iron Reduction in Tilled Soils (C6)		☒ Stunted or Stressed Plants (D1)	
☐ Iron Deposits (B5)		☐ Thin Muck Surface (C7)		☒ Geomorphic Position (D2)	
☐ Inundation Visible on Aerial Imagery (B7)		☐ Other (Explain in Remarks)		☐ Shallow Aquitard (D3)	
☐ Sparsely Vegetated Concave Surface (B8)				☐ Microtopographic Relief (D4)	
				☒ FAC-Neutral Test (D5)	
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☒ No ☐ Depth (inches): 11 Saturation Present? Yes ☒ No ☐ Depth (inches): 7 (includes capillary fringe)				Wetland Hydrology Present? Yes ☒ No ☐	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: USDA WETS Table depicts conditions are dryer than normal; however the rainfall total for the site as of May 21, 2018 was depicted as totalling 8.68 inches, significantly greater than the average May rainfall.					

VEGETATION – Use scientific names of plants.

 Sampling Point: 4A

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>95</u></td> <td>x 2 = <u>190</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>100</u> (A)</td> <td><u>215</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.15</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>95</u>	x 2 = <u>190</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>100</u> (A)	<u>215</u> (B)	Prevalence Index = B/A = <u>2.15</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>95</u>	x 2 = <u>190</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>100</u> (A)	<u>215</u> (B)																			
Prevalence Index = B/A = <u>2.15</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: _____)																				
1. <u>Phalaris arundinacea</u>	<u>95</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Pastinaca sativa</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
=Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
=Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				
=Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																

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

SOIL

Sampling Point 4A

[illegible]

Project/Site: Helmke Property City/County: Dunn/Dane Sampling Date: 5-22-2018

Applicant/Owner: Urso Brothers State: WI Sampling Point: 4B

Investigator(s): Neil Pfaff Section, Township, Range: S1 T6N R10E

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope %: 2-6

Subregion (LRR or MLRA): LRR K, MLRA 95B Lat: 43.006364 Long: 89.264995 Datum: NAVD1988

Soil Map Unit Name: Kegonsa silt loam NWI classification: N/A

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

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

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

Hydrophytic Vegetation Present?	Yes ☐	No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒ If yes, optional Wetland Site ID:
Hydric Soil Present?	Yes ☐	No ☒	
Wetland Hydrology Present?	Yes ☐	No ☒	
Remarks: (Explain alternative procedures here or in a separate report.)			

Wetland Hydrology Indicators:				Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)					
☐ Surface Water (A1)	☐ High Water Table (A2)	☐ Saturation (A3)	☐ Water-Stained Leaves (B9)	☐ Aquatic Fauna (B13)	☐ Surface Soil Cracks (B6)
☐ Water Marks (B1)	☐ Sediment Deposits (B2)	☐ Drift Deposits (B3)	☐ Marl Deposits (B15)	☐ Hydrogen Sulfide Odor (C1)	☐ Drainage Patterns (B10)
☐ Algal Mat or Crust (B4)	☐ Iron Deposits (B5)	☐ Inundation Visible on Aerial Imagery (B7)	☐ Oxidized Rhizospheres on Living Roots (C3)	☐ Presence of Reduced Iron (C4)	☐ Moss Trim Lines (B16)
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)		☐ Recent Iron Reduction in Tilled Soils (C6)	☐ Thin Muck Surface (C7)	☐ Dry-Season Water Table (C2)
					☐ Crayfish Burrows (C8)
					☐ Saturation Visible on Aerial Imagery (C9)
					☐ Stunted or Stressed Plants (D1)
					☐ Geomorphic Position (D2)
					☐ Shallow Aquitard (D3)
					☐ Microtopographic Relief (D4)
					☐ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): Water Table Present? Yes ☐ No ☒ Depth (inches): Saturation Present? Yes ☐ No ☒ Depth (inches): (includes capillary fringe)				Wetland Hydrology Present? Yes ☐ No ☒	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks: USDA WETS Table depicts conditions are dryer than normal; however the rainfall total for the site as of May 21, 2018 was depicted as totalling 8.68 inches, significantly greater than the average May rainfall.					

VEGETATION – Use scientific names of plants.

 Sampling Point: 4B

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>70</u></td> <td>x 2 = <u>140</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>95</u></td> <td>x 4 = <u>380</u></td> </tr> <tr> <td>UPL species <u>10</u></td> <td>x 5 = <u>50</u></td> </tr> <tr> <td>Column Totals: <u>175</u> (A)</td> <td><u>570</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.26</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>70</u>	x 2 = <u>140</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>95</u>	x 4 = <u>380</u>	UPL species <u>10</u>	x 5 = <u>50</u>	Column Totals: <u>175</u> (A)	<u>570</u> (B)	Prevalence Index = B/A = <u>3.26</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>70</u>	x 2 = <u>140</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>95</u>	x 4 = <u>380</u>																			
UPL species <u>10</u>	x 5 = <u>50</u>																			
Column Totals: <u>175</u> (A)	<u>570</u> (B)																			
Prevalence Index = B/A = <u>3.26</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: _____)																				
1. <u>Poa pratensis</u>	<u>70</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Phalaris arundinacea</u>	<u>70</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Taraxacum officinale</u>	<u>25</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Daucus carota</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>175</u> =Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
=Total Cover																				
Woody Vine Stratum (Plot size: _____)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				
=Total Cover				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																

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

SOIL

Sampling Point 4B

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Helmke Property City/County: Dunn/Dane Sampling Date: 5-22-2018
 Applicant/Owner: Urso Brothers State: WI Sampling Point: 5A
 Investigator(s): Neil Pfaff Section, Township, Range: S1 T6N R10E
 Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope %: 0-2
 Subregion (LRR or MLRA): LRR K, MLRA 95B Lat: 43.006364 Long: 89.264995 Datum: NAVD 1988
 Soil Map Unit Name: Batavia silt loam NWI classification: NONE

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No X (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u> Hydric Soil Present? Yes <u>X</u> No <u> </u> Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u> If yes, optional Wetland Site ID: <u> </u>
Remarks: (Explain alternative procedures here or in a separate report.)	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ Water-Stained Leaves (B9) ☐ High Water Table (A2) ☐ Aquatic Fauna (B13) ☐ Saturation (A3) ☐ Marl Deposits (B15) ☐ Water Marks (B1) ☐ Hydrogen Sulfide Odor (C1) ☐ Sediment Deposits (B2) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Drift Deposits (B3) ☐ Presence of Reduced Iron (C4) ☐ Algal Mat or Crust (B4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Iron Deposits (B5) ☐ Thin Muck Surface (C7) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Other (Explain in Remarks) ☐ Sparsely Vegetated Concave Surface (B8)	<u>Secondary Indicators (minimum of two required)</u> ☐ Surface Soil Cracks (B6) ☐ Drainage Patterns (B10) ☐ Moss Trim Lines (B16) ☐ Dry-Season Water Table (C2) ☐ Crayfish Burrows (C8) ☐ Saturation Visible on Aerial Imagery (C9) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: USDA WETS Table depicts conditions are dryer than normal; however the rainfall total for the site as of May 21, 2018 was depicted as totalling 8.68 inches, significantly greater than the average May rainfall.	

VEGETATION – Use scientific names of plants.

 Sampling Point: 5A

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

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

SOIL

Sampling Point 5A

[illegible]

Appendix III: WETS Table

WETS Station: MADISON DANE COUNTY REGIONAL AP, WI

Requested years: 1971 - 2000

Month	Temperature (°F)			Precipitation (inches)				
	Avg daily max	Avg daily min	Avg daily mean	Avg	30% chance will have		Avg number of days with 0.10 inch or more	Average total snowfall
					less than	more than		
Jan	25.6	8.5	17.0	1.25	0.81	1.51	4	13.0
Feb	31.3	13.5	22.4	1.28	0.69	1.56	4	8.6
Mar	43.4	24.0	33.7	2.28	1.28	2.77	5	7.1
Apr	57.4	34.6	46.0	3.35	2.58	3.89	7	3.5
May	70.2	45.2	57.7	3.25	2.11	3.91	7	0.1
Jun	79.2	54.8	67.0	4.05	2.45	4.91	7	0.0
Jul	82.9	60.0	71.4	3.93	2.93	4.60	6	0.0
Aug	80.1	57.7	68.9	4.33	3.14	5.10	7	0.0
Sep	72.1	49.0	60.5	3.08	1.65	3.76	6	0.0
Oct	60.1	37.9	49.0	2.17	1.37	2.63	5	0.4
Nov	43.8	26.8	35.3	2.31	1.45	2.80	5	4.5
Dec	30.6	14.9	22.7	1.67	0.94	2.03	4	12.5
Annual:					30.12	35.42		
Average	56.4	35.6	46.0	-	-	-	-	-
Total	-	-	-	32.96			66	49.7

GROWING SEASON DATES

Requested years of data: 1971 - 2000
 Years with missing data: 24 deg = 0 28 deg = 0 32 deg = 0
 Years with no occurrence: 24 deg = 0 28 deg = 0 32 deg = 0
 Data years used: 24 deg = 30 28 deg = 30 32 deg = 30

Probability	Temperature		
	24 F or higher	28 F or higher	32 F or higher
	Beginning and Ending Dates Growing Season Length		
50 percent *	4/14 to 10/25 194 days	4/25 to 10/10 168 days	5/10 to 10/1 144 days
70 percent *	4/10 to 10/30 203 days	4/20 to 10/15 178 days	5/6 to 10/5 152 days

* Percent chance of the growing season occurring between the Beginning and Ending dates.

STATS TABLE

Total precipitation (inches)

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
2018	1.68	2.50	0.74	2.14	M3.44								10.50
2017	2.76	1.94	2.83	5.30	2.83	6.73	6.52	3.85	0.55	3.56	0.68	0.73	38.28
2016	0.98	0.52	3.96	2.11	2.22	5.35	5.23	7.87	8.46	4.96	1.87	2.03	45.56
2015	0.66	0.54	0.76	4.38	4.18	3.15	5.02	4.10	5.99	2.73	4.75	3.33	39.59
2014	0.65	1.24	1.26	5.13	3.47	9.55	1.08	5.43	1.84	3.09	1.54	1.03	35.31
2013	2.87	2.41	2.41	5.83	6.57	10.86	4.00	1.53	3.19	1.89	2.20	1.62	45.38
2012	1.40	1.03	2.61	2.85	3.19	0.31	4.00	1.58	1.33	4.56	0.90	2.60	26.36
2011	1.28	1.59	2.96	3.61	2.40	3.55	1.85	3.06	3.31	1.35	3.35	2.23	30.54
2010	0.88	1.02	0.71	3.65	3.79	8.38	7.98	3.92	2.65	2.30	1.09	1.49	37.86
2009	0.54	1.91	6.19	4.43	3.68	4.17	1.94	2.49	4.68	3.80	1.32	3.20	38.35
2008	2.17	3.30	2.47	6.43	2.55	10.93	5.62	1.41	2.23	2.20	1.46	3.29	44.06
2007	0.84	1.59	3.39	4.68	1.40	4.82	2.69	15.18	2.45	3.35	0.39	3.63	44.41
2006	1.96	0.81	2.34	5.04	4.61	2.29	4.45	5.43	3.33	2.87	2.24	1.36	36.73
2005	2.20	1.45	1.56	1.68	3.96	1.65	3.92	1.22	1.95	0.76	3.36	0.99	24.70
2004	0.62	1.44	3.61	1.76	10.84	3.93	6.05	3.96	1.00	3.20	1.51	1.46	39.38
2003	0.36	0.50	1.72	2.95	3.67	2.10	4.24	0.87	4.24	1.60	7.49	2.00	31.74
2002	0.63	2.17	1.70	3.45	2.92	3.70	2.06	3.04	2.74	2.10	1.01	0.67	26.19
2001	0.99	2.64	0.59	3.07	4.16	5.40	3.09	7.64	5.53	2.62	1.59	1.13	38.45
2000	0.91	1.95	1.17	3.18	9.63	8.63	3.27	3.94	3.59	0.68	2.00	1.39	40.34
1999	2.10	0.91	0.47	6.91	3.72	5.57	4.49	3.26	1.55	0.88	1.21	0.86	31.93
1998	2.24	1.44	5.46	4.10	4.58	7.46	2.50	4.24	2.48	3.20	1.95	0.29	39.94
1997	1.24	2.52	1.54	2.50	1.94	5.23	6.23	2.33	1.38	1.23	1.25	1.25	28.64
1996	2.53	0.53	0.82	2.76	2.95	9.69	4.08	1.84	1.07	3.14	1.01	1.27	31.69
1995	2.12	0.06	2.17	4.14	3.92	1.22	4.36	5.58	1.78	4.29	3.17	0.77	33.58
1994	1.46	2.76	0.46	2.57	1.33	5.66	4.10	4.56	6.14	0.65	2.77	1.08	33.54
1993	1.60	1.18	3.29	5.33	3.81	6.67	9.34	5.57	3.74	0.91	1.55	0.35	43.34
1992	0.78	1.34	1.90	3.17	1.12	1.53	5.54	2.48	5.99	1.06	4.83	2.39	32.13
1991	1.17	0.44	4.24	4.89	2.20	3.75	5.18	2.34	3.96	5.35	3.86	1.71	39.09
1990	1.60	0.99	4.18	1.90	5.35	4.88	2.61	6.03	1.64	2.25	1.65	3.46	36.54
1989	0.61	0.57	1.69	1.69	1.72	1.67	4.97	6.46	0.89	1.88	0.98	0.26	23.39
1988	1.82	0.46	1.20	2.65	0.92	2.06	2.44	2.95	3.33	1.60	3.58	1.56	24.57
1987	0.68	0.62	1.99	2.46	3.90	1.17	3.26	7.16	3.61	1.24	3.24	4.09	33.42
1986	1.02	2.72	1.55	2.27	1.97	3.24	4.31	4.38	6.82	1.85	1.03	0.69	31.85
1985	1.43	1.89	3.13	1.52	3.35	3.06	4.48	2.98	5.00	4.58	5.13	2.39	38.94
1984	0.36	1.26	1.15	3.86	3.32	7.01	1.96	1.89	2.79	5.63	1.83	2.66	33.72
1983	0.53	2.26	2.70	2.23	4.21	1.85	1.92	5.05	2.85	2.59	3.18	2.30	31.67

Monthly Analysis

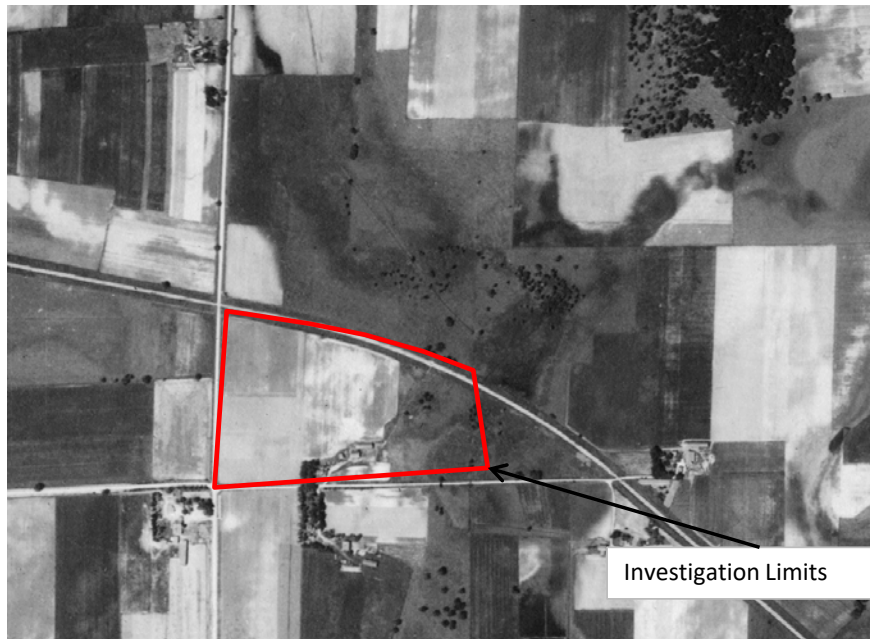
Month	30% Chance Less Than Normal Rainfall	Normal Rainfall	30% Chance More than Normal Rainfall	Actual Rainfall	Condition, Dry, Wet, Normal	Condition Value	Month Weight Value	Product of previous two columns
April	2.58	3.35	3.89	2.14	Dry	1	3	3
March	1.28	2.28	2.77	0.74	Dry	1	2	2
February	0.69	1.28	1.56	2.50	Wet	3	1	3

*As of May 7th, 2018 the rainfall total was depicted above at 3.44 inches, which was already exceeding the normal month total rainfall for May. Although the WETS table depicts the site conditions as *dryer than normal*, that was not the case during the on-site delineation. May rainfall total as of May 21st, 2018 was depicted as 8.68 inches, with the site receiving 0.79 inches 48-hours prior to the on-site delineation.

Sum: 8

Wet=3 Rating 6 to 9 = Dryer than Normal, 10 to 14 = Normal, 15 to 18 Wetter than Normal
Normal=2
Dry=1
Conditions: **Dryer than Normal**

Appendix IV: Historic Aerial Photos



Year 1937



Year 1955

PAGE - 1

Appendix IV - Historical Photo Log

Project Name: Helmke Property

Project Location: Town of Dunn

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Year 1968



Year 1987

PAGE - 2

Appendix IV - Historical Photo Log

Project Name: Helmke Property

Project Location: Town of Dunn



5/15/2000



8/30/2004

PAGE - 3

Appendix IV - Historical Photo Log

Project Name: Helmke Property

Project Location: Town of Dunn

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5/31/2005



6/22/2008

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Appendix IV - Historical Photo Log

Project Name: Helmke Property

Project Location: Town of Dunn

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9/26/2010



Year 2017

PAGE - 5

Appendix IV - Historical Photo Log

Project Name: Helmke Property

Project Location: Town of Dunn

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Assured Wetland Delineation Report

Lower Yahara River Trail Extension

Town of Dunn, Dane County, Wisconsin

March 13, 2019

Project Number: 20180124

Lower Yahara River Trail Extension

Town of Dunn, Dane County, Wisconsin

March 13, 2019

Prepared for:

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Prepared by:

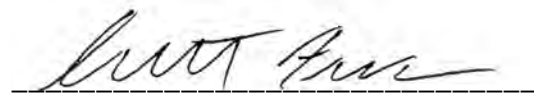
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Appendix C | Wetland Determination Data Sheets

Appendix D | Site Photographs

Appendix E | Delineator Qualifications



1.0 Introduction

Heartland Ecological Group, Inc. (“Heartland”) completed an assured wetland determination and delineation on the Lower Yahara River Trail Extension site on October 17 and November 14, 2018 at the request of the Village of McFarland. Fieldwork was completed by Jeff Kraemer, an assured delineator qualified via the Wisconsin Department of Natural Resources (WDNR) Wetland Delineation Assurance Program (Appendix E, Qualifications) and Scott Fuchs, Environmental Technician. The 56.1-acre site (the “Study Area”) is immediately east of Hidden Farm Road and southwest of the intersection of County Trunk Highway (CTH) AB and Elvehjem Road, in Section 11, T6N, R10E, Town of Dunn, Dane County, WI (Figure 1, Appendix A). The purpose of the wetland delineation was to determine the location and extent of wetlands within the Study Area.

One (1) wetland area totaling approximately 22.20 acres was delineated and mapped within the Study Area (Figure 5, Appendix A). Wetlands discussed in this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corps of Engineers (USACE), state regulation under the jurisdiction of the WDNR, and local zoning authorities. Heartland recommends this report be submitted to local authorities, the WDNR, and USACE for final jurisdictional review and concurrence.



2.0 Methods

2.1 Wetlands

Wetlands were determined and delineated using the criteria and methods described in the USACE Wetlands Delineation Manual, T.R. Y-87-1 ("1987 Corps Manual") and the applicable *Regional Supplement to the Corps of Engineers Wetland Delineation Manual*. In addition, the *Guidance for Submittal of Delineation Reports to the St. Paul District USACE and the WDNR* (WDNR, 2015) was followed in completing the wetland delineation and report.

Determinations and delineations utilized available resources including the U.S. Geological Survey's (USGS) *WI 7.5 Minute Series (Topographic) Map* (Figure 2, Appendix A), the Natural Resource Conservation Service's (NRCS) Soil Survey Geographic Database (SSURGO), U.S. Department of Agriculture's (USDA) *Web Soil Survey* (Figure 3, Appendix A), the U.S. Fish and Wildlife Service's (USFWS) *National Wetland Inventory* mapping (Figure 4, Appendix A), and aerial imagery available through the USDA Farm Service Agency's (FSA) National Agriculture Imagery Program (NAIP) and Dane County's interactive mapping. The USGS *National Hydrography Dataset* is included on Figures 2 & 4, Appendix A.

Wetland determinations were completed on-site at sample points, often along transects, using the three (3) criteria (vegetation, soil, and hydrology) approach per the 1987 Corps Manual and the Regional Supplement. Procedures in these sources were followed to demonstrate that, under normal circumstances, wetlands were present or not present based on a predominance of hydrophytic vegetation, hydric soils, and wetland hydrology.

Recent weather conditions influence the visibility or presence of certain wetland hydrology indicators. An assessment of recent precipitation patterns helps to determine if climatic/hydrologic conditions were typical when the field investigation was completed. Therefore, a review of the antecedent precipitation in the three (3) months leading up to the field investigation was completed. Using a WETS analysis developed by the NRCS, the amounts of precipitation in these three (3) months were compared to averages and standard deviation thresholds over the past 30 years to generally represent if conditions encountered during the investigation were normal, wet, or dry. Recent precipitation events in the week prior to the investigation were considered while interpreting wetland hydrology



indicators. In some cases, the Palmer Drought Index was checked for long-term drought or moist conditions (NOAA, 2018).

The uppermost wetland boundary and sample points were identified and marked with wetland flagging and located with a Global Positioning System (GPS) capable of sub-meter accuracy. In some cases, wetland flagging was not utilized to mark the boundary and the location was only recorded with a GPS unit, particularly in active agricultural areas. The GPS data was then used to map the wetlands using ESRI ArcMap™ 10.6 software.

3.0 Results and Discussion

3.1 Desktop Review

Climatic Conditions

According to the WETS analysis using the previous three (3) months of precipitation data, conditions encountered at the time of the fieldwork were expected to be wet for the time of year (Appendix B). More than double the precipitation for an average year had occurred in August through October. The Palmer Drought Index was checked on line and the long-term conditions at the time of the fieldwork were in the extremely moist range. Fieldwork was completed outside the dry-season based on long-term regional hydrology data utilized in the WebWIMP Climatic Water Balance web site. Conditions at the time of the fieldwork were in fact wetter than normal, inundated soils were observed near the upper wetland margin and in some cases, non-wetland areas were inundated.

General Topography and Land Use

The topography within the Study Area was both flat and rolling, with a large mostly flat area proximate to the wetland, and various hills, depressions, and slopes on the balance of the Study Area. A topographic high of approximately 896 feet mean above sea level (msl) is in the southeast corner of the Study Area. A topographic low of approximately 855 feet above msl was observed within a ditch in the northern portion of the Study Area (Figures 2 and 5, Appendix A). The Study Area contains the McFarland dog park, a gravel parking lot, oak woodlands, and a large wetland area that includes a pond on its eastern side. Land uses in the surrounding areas are primarily agricultural row cropping with residential and woodland areas also present. General drainage is to the west toward Lower Mud Lake and the Yahara River, which lie approximately ½ mile to the southwest.



Soil Mapping

Soils mapped by the NRCS Soil Survey within the Study Area and their hydric status are summarized in Table 1. Wetlands identified during the field investigation are located primarily within areas mapped as hydric or partially hydric soils including wetland indicator soils (Figure 3, Appendix A).

Table 1. Summary of NRCS Mapped Soils within the Study Area

Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
DnC2: Dodge SiL, 6-12% slopes	Dodge-Eroded	80-90	Drumlins	No
	St. Charles-Eroded	7-13	Till plains	No
	McHenry-Eroded	3-7	Moraines	No
KrD2: Kidder soils, 10-20% slopes, eroded	Kidder-Loam	60	Recessionial and terminal moraines, drumlins	No
	Kidder-Sandy loam	30	Drumlins, recessionial and terminal moraines	No
SaA: Sable SiCL, 0-2% slopes	Sable	85-100	Swales	Yes
	Muscature	0-6	Ground moraines	No
	Ipava	0-7	Ground moraines	No
	Buckhart	0-4	Knolls	No
	Elburn	0-3	Outwash plains	No
ScB: St. Charles SiL, 2-6% slopes	St. Charles	80-90	Till plains	No
	St. Charles-MWD	5-10	Till plains	No
	Virgil	3-5	Till plains	No
	Pella	2-5	Drainageways	Yes
VwA: Virgil SiL, gravel Subst, 0-3% slopes	Virgil-Gravelly substratum	85-95	Outwash plains	No
	Sebewa	2-5	Outwash plains	Yes
	Drummer-Drained	2-6	Outwash plains	Yes
	Sable	1-4	Outwash plains	Yes



Soil symbol: Soil Unit Name	Soil Unit Component	Soil Unit Component Percentage	Landform	Hydric status
Wa: Wacousta SiCL, 0-2% slopes	Wacousta	80-90	Interdrumlins	Yes
	Sable	5-10	Interdrumlins	Yes
	Sebewa	5-10	Interdrumlins	Yes

Wetland Mapping

The National Wetlands Inventory (NWI) mapping (Figure 4, Appendix A) depicts one (1) wetland areas within the Study Area: an emergent wetland that encompasses northern and east-central portions of the Study Area. The National Wetlands Inventory also documents the presence of a pond near the center of the Study Area.

3.2 Field Review

One (1) 22.2 acre wetland was identified and delineated within the Study Area. Wetland determination data sheets (Appendix C) were completed at 21 sample points that were representative of the wetland and upland conditions near the boundary and where potential wetlands may be present based on the desktop review and field reconnaissance. Appendix D provides photographs, typically at the sample point locations of the wetlands and adjacent uplands. The wetland boundary and sample point locations are shown on Figure 5 (Appendix A) and the wetland is summarized in Table 2 and detailed in the following sections.

Table 2. Summary of Wetlands Identified within the Study Area

Wetland ID	Wetland Description	*Surface Water Connections	*NR151 Protective Area	Acreage (on-site)
W-1	Wet Meadow/ Shallow Marsh/ Shrub Carr/ Hardwood Swamp/ Pond	Connection to Mud Lake / Yahara River by an unnamed tributary	Moderately susceptible, 50 feet	22.2
<i>*Classification based on Heartland's professional opinion. Jurisdictional authority of wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities may have additional restrictions. USACE has authority for determining federal jurisdiction of wetlands and waterways.</i>				22.2



Wetland 1 (W-1)

Wetland 1 (W-1) is a 22.2-acre complex of wet meadow, shallow marsh, shrub carr, and hardwood swamp located in a large portion of the Study Area.

Dominant vegetation observed in W-1 included reed canary grass (*Phalaris arundinacea*, FACW), bentgrass (*Agrostis stolonifera*, FACW), tussock sedge (*Carex stricta*, OBL), gray dogwood (*Cornus racemosa*, FAC), red osier dogwood (*Cornus alba*, FACW), common buckthorn (*Rhamnus cathartica*, FAC), sandbar willow (*Salix interior*, FACW), and green ash (*Fraxinus pennsylvanica*, FACW). Dominant species were mostly hydrophytic and met the wetland vegetation parameter.

Histic Epipedon (A2), Depleted Below Dark Surface (A11), Depleted Matrix (F3), and Redox Dark Surface (F6) hydric soil indicators were noted in W-1. Soils were predominantly hydric and met the hydric soil parameter.

The primary wetland hydrology indicators of Surface Water (A1), High Water Table (A2), Saturation (A3) were noted within W-1. Secondary wetland hydrology indicators included Drainage Patterns (B10), Geomorphic Position (D2), and a positive FAC-Neutral Test (D5).

The boundary of W-1 varied from well defined to poorly defined, especially in areas of transitional zones between shrub carr and oak woodland vegetative communities. Along its northern edges, the boundary of the wetland area generally followed a moderately to well-defined topographic break.



3.3 Other Considerations

This report is limited to the identification and delineation of wetlands within the Study Area. Other regulated environmental resources that result in land use restrictions may be present within the Study Area that were not evaluated by Heartland (e.g. navigable waterways, floodplains, cultural resources, and threatened or endangered species).

Wisconsin Act 183 provides exemptions to permitting requirements for certain nonfederal wetlands. Nonfederal wetlands are wetlands that are not subject to federal jurisdiction. Exemptions apply to projects in urban areas with wetland impacts up to 1-acre per parcel. An urban area is defined as an incorporated area; an area within ½ mile of an incorporated area; or an area served by a sewerage system. Exemptions for nonfederal wetlands also apply to projects in rural areas with wetland impacts up to three (3) acres per parcel. Exemptions in rural areas only apply to structures with an agricultural purpose such as buildings, roads, and driveways. The determination of federal and nonfederal wetlands MUST be made by the USACE through an Approved Jurisdictional Determination (AJD). This report may be submitted to the USACE to assist with their determination.

Wis. Adm. Code NR 151 ("NR 151") requires that a "protective area" (buffer) be determined from the Ordinary High-Water Mark (OHWM) of lakes, streams and rivers, or at the delineated boundary of wetlands. Per NR 151.12, the protective area width for "less susceptible" wetlands is determined by using 10% of the average wetland width, no less than 10 feet or more than 30 feet. "Moderately susceptible" wetlands, lakes, and perennial and intermittent streams identified on recent mapping require a protective area width of 50 feet; while "highly susceptible wetlands" are associated with outstanding or exceptional resource waters in areas of special natural resource interest and require protective area width of 75 feet. Table 2 above lists the potential wetland buffers per NR 151 for each wetland identified based on Heartland's professional opinion. Please note that jurisdictional authority on wetland and waterway protective areas under NR 151 lies with the WDNR. Local zoning authorities and regional planning organizations may have additional land use restrictions within or adjacent to wetlands.



4.0 Conclusion

Heartland completed an assured wetland determination and delineation within the Lower Yahara River Trail Extension site on October 17 and November 14, 2018 at the request of the Village of McFarland. Fieldwork was completed by Jeff Kraemer and Scott Fuchs of Heartland. The Study Area lies in Section 11, T6N, R10E, Town of Dunn, Dane County, WI.

One (1) wetland area was delineated and mapped within the 56.1-acre Study Area. The wetland, which may be classified as a wet meadow / shallow marsh / shrub carr / Hardwood Swamp complex measures approximately 22.2 acres within the Study Area.

Wetlands and waterways discussed in this report may be subject to federal regulation under the jurisdiction of the USACE, state regulation under the jurisdiction of the WDNR, and the local zoning authority. Heartland recommends this report be submitted to the USACE for final jurisdictional review and concurrence. Review by local authorities may be necessary for determination of any applicable zoning and setback restrictions.

Heartland recommends that all applicable regulatory agency reviews and permits are obtained prior to beginning work within the Study Area or within or adjacent to wetlands or waterways. Heartland can assist with evaluating the need for additional environmental reviews, surveys, or regulatory agency coordination in consideration of the proposed activity and land use as requested but is outside of the scope of the wetland delineation.

Experienced and qualified professionals completed the wetland determination and delineation using standard practices and professional judgment. Wetland boundaries may be affected by conditions present within the Study Area at the time of the fieldwork. All final decisions on wetlands and their boundaries are made by the USACE, the WDNR, and/or sometimes a local unit of government. Wetland determination and boundary reviews by regulatory agencies may result in modifications to the findings presented to the Client. These modifications may result from varying conditions between the time the wetland delineation was completed and the time of the review. Factors that may influence the findings may include but not limited to precipitation patterns, drainage modifications, changes or modification to vegetation, and the time of year.



5.0 References

Eggers, S. D., & D. M. Reed. (2014). *Wetland Plants and Plant Communities of Minnesota and Wisconsin* (V. 3.1). U.S. Army Corps of Engineers, Regulatory Branch, St. Paul, MN District. See: <http://www.mvp.usace.army.mil/>.

Environmental Laboratory (1987). *Corps of Engineers Wetlands Delineation Manual*, Tech. Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Lichvar, R.W., D. L. Banks, W. N. Kirchner, and N.C. Melvin. (2016). *The National Wetland Plant List: 2016 wetland ratings*. Phytoneuron 2016-30: 1-17. Published 28 April 2016. ISSN 2153 733X. See: <http://www.phytoneuron.net/>.

Midwestern Regional Climate Center. (2014). *cli-MATE* [climate data access tool]. See: <http://mrcc.isws.illinois.edu/CLIMATE/>.

National Oceanic and Atmospheric Administration (NOAA). (2015) Regional Climate Centers Applied Climate Information System. *WETS table*. See: <http://agacis.rcc-acis.org>.

NOAA National Center for Environmental Information. (2018) *Historic Palmer Drought Indices*. See: <https://www.ncdc.noaa.gov/temp-and-precip/drought/historical-palmers/psi/201512-201601>.

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture (USDA). (2018). *Soil Survey Geographic (SSURGO) Database*. See: <http://websoilsurvey.nrcs.usda.gov/> or <http://datagateway.nrcs.usda.gov/>.

Soil Survey Staff, Natural Resources Conservation Service, USDA. (2018). *Web Soil Survey*. See: <http://websoilsurvey.nrcs.usda.gov/>.

U.S. Army Corps of Engineers (USACE) and Wisconsin Department of Natural Resources (WDNR). (March 2015). "Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources". See: <http://dnr.wi.gov/topic/wetlands/documents/FinalWisconsinDelineationGuidance.pdf>.

USACE. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)*. (2011). ed. J.S. Wakely, R.W. Lichvar,



C.V. Nobel, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

USACE St. Paul District & Minnesota Board of Water & Soil Resources. (July 2016). *Guidance for Offsite Hydrology/Wetland Determinations*. See:

<http://www.mvp.usace.army.mil/Missions/Regulatory/Delineation/>.

United States Department of Agriculture (USDA), Farm Service Agency (FSA). (2017) [Dane County, Wisconsin aerial photographs]. National Agriculture Imagery Program (NAIP). Salt Lake City, UT: Aerial Photography Field Office.

USDA, Natural Resource Conservation Service (NRCS). (2010). *Field Indicators of Hydric Soils in the United States*, Version 8.1. L.M. Vasilas, G.W. Hurt, and C.V. Noble (eds.).

USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils.

United States Department of the Interior (USDI) Fish & Wildlife Service – Ecological Services. (2018). *National Wetland Inventory*. See: <https://www.fws.gov/wetlands/>.

USDI, U.S. Geological Survey (USGS). *Wisconsin 7.5 Minute Series (Topographic) Maps*. 1:24,000. Reston, VA.

USDI, USGS. National Hydrography Dataset (NHD) 24K scale data. See:

<https://nhd.usgs.gov/>.

Wetland Training Institute, Inc (WTI). (2010). *Pocket guide to hydric soil field indicators*. (Robert J. Pierce, Ed.). (7th ed.). Glenwood, NM: Wetland Training Institute, Inc.

Willmott, C.J. and K. Matsuura. (2016). *Web-Based Water-Budget Interactive Modeling Program (WebWIMP)*. University of Delaware Department of Geography. Newark, DE. See: climate.geog.udel.edu/~wimp/.

WDNR, Surface Water Data Viewer Interactive Web-mapping Tool. (2018). See: <https://dnr.wi.gov/topic/surfacewater/swdv/>.

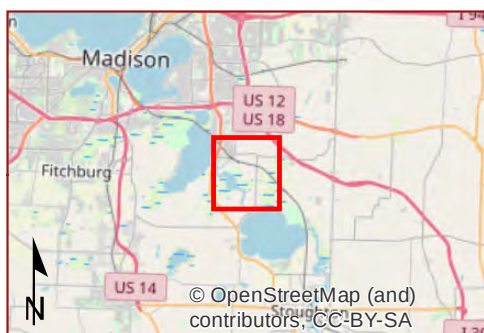
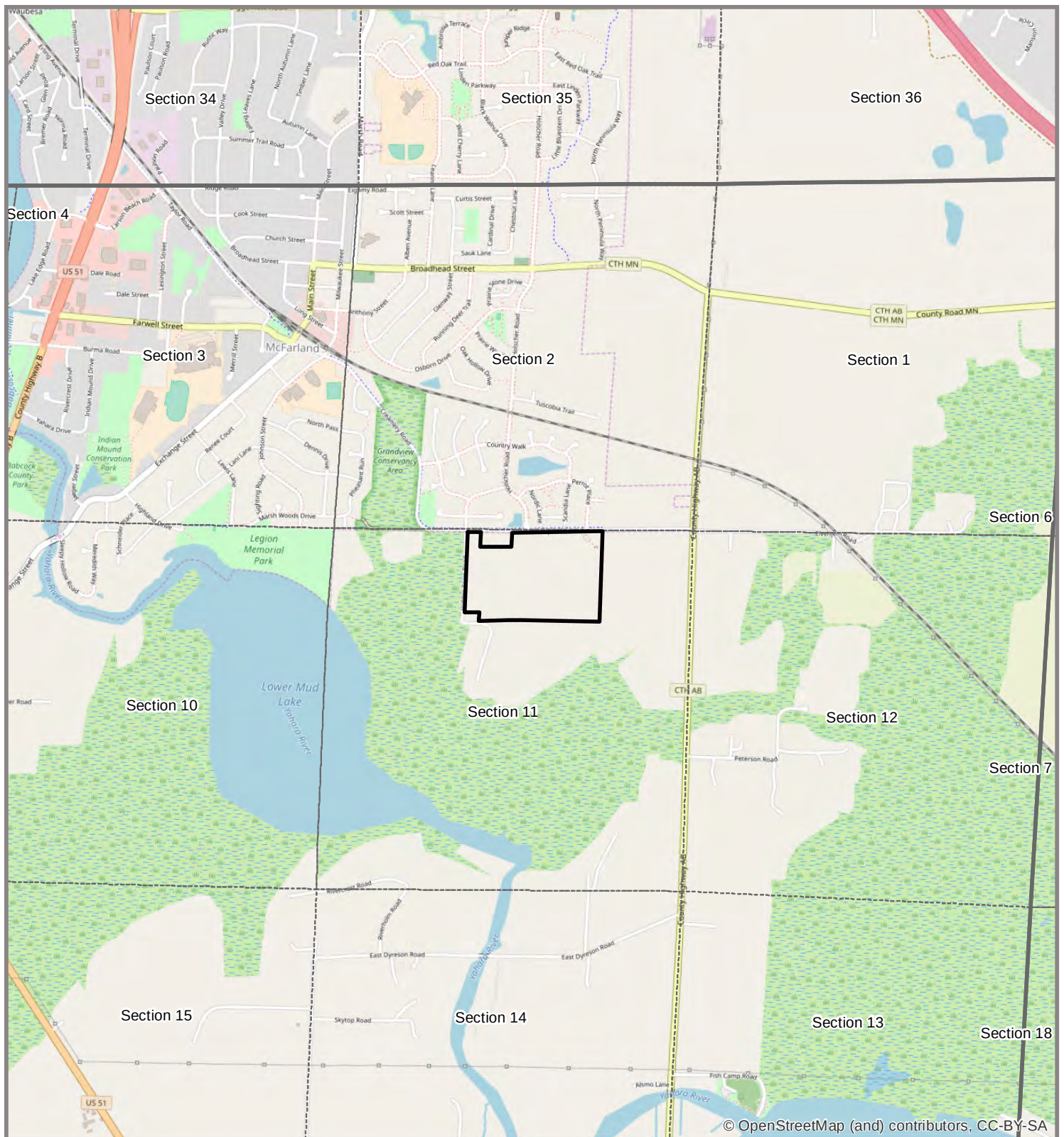
WDNR, Division of Water. (2010). [24k hydrography geospatial data layer]. See: ftp://dnrftp01.wi.gov/geodata/hydro_24k/.

Woodward, D.E. ed. (1997). *Hydrology Tools for Wetland Determination*, WETS Analysis, Chapter 19. Engineering Field Handbook. USDA, NRCS, Fort Worth, TX.



Village of McFarland
Lower Yahara River Trail Extension
Project #: 20180124
March 13, 2019

Appendix A | Figures



 Study Area (56.1 ac)

0 1,000 2,000
Ft

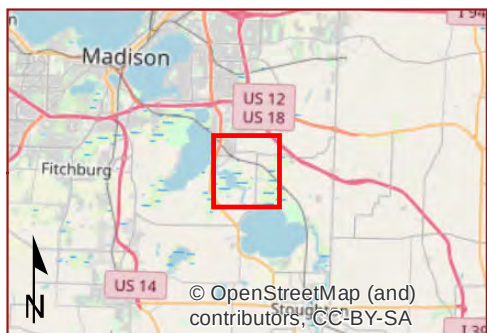
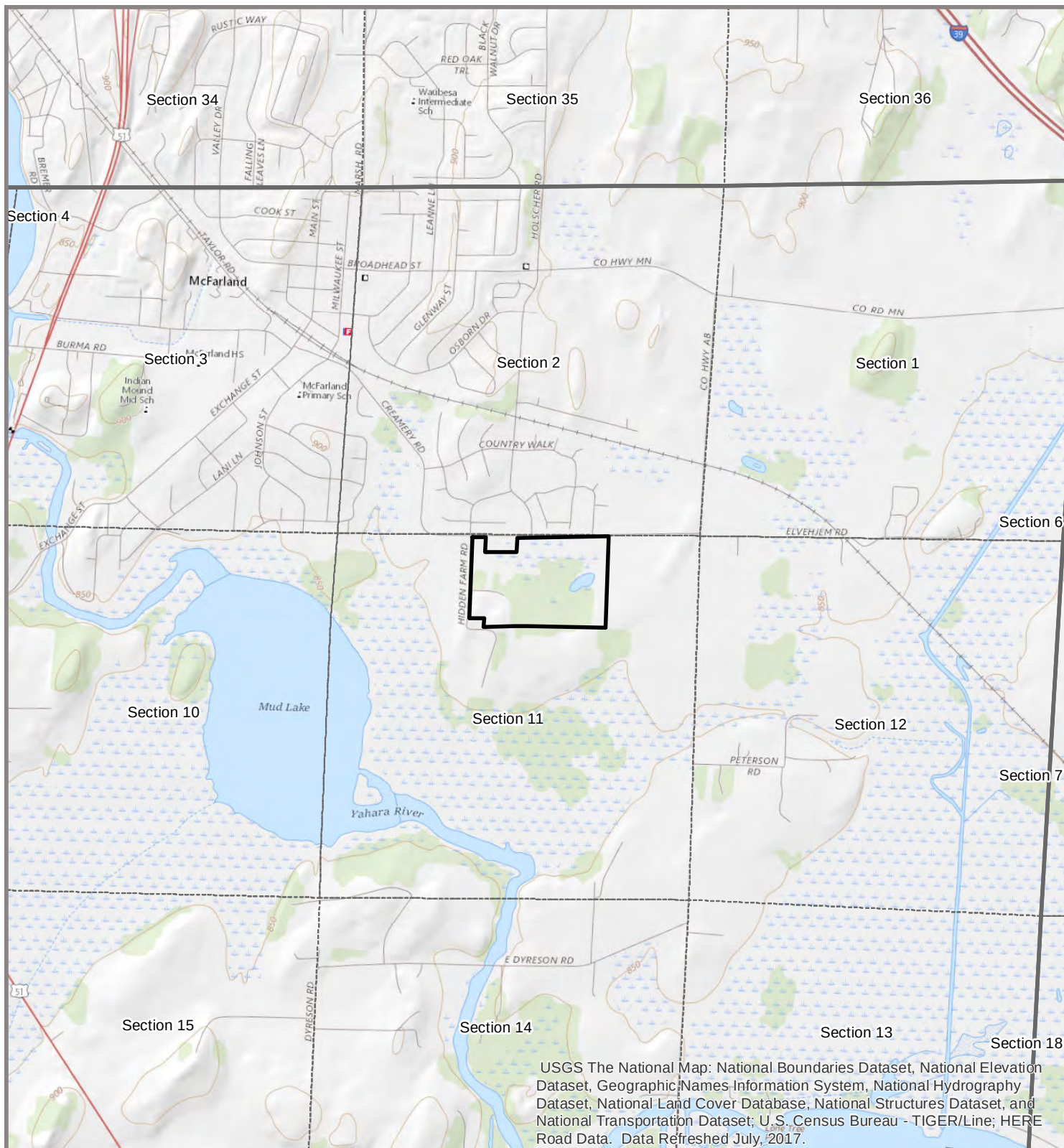
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Figure 1. Project Location

Lower Yahara River Trail
Project #20180124
T6N, R10E, S11
T Dunn, Dane Co, WI

OpenStreetMap
Data: HEG

10/15/2018



Study Area (56.1 ac)

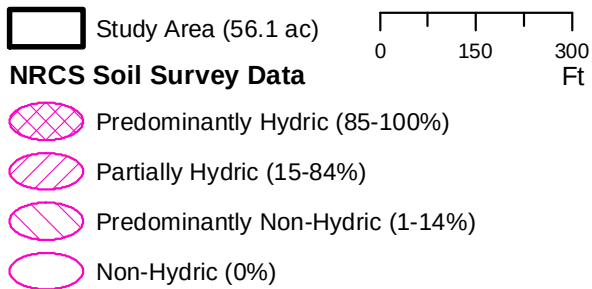
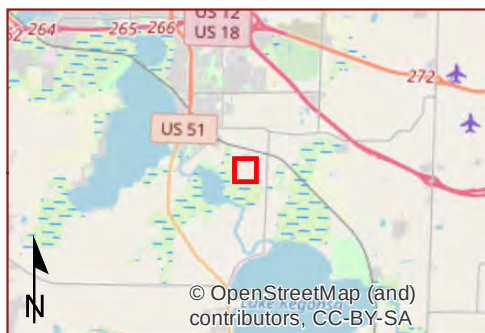
0 1,000 2,000
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Figure 2. USGS Topography

Lower Yahara River Trail
Project #20180124
T6N, R10E, S11
T Dunn, Dane Co, WI

USGSTopo
Data: USGS, HEG 10/15/2018



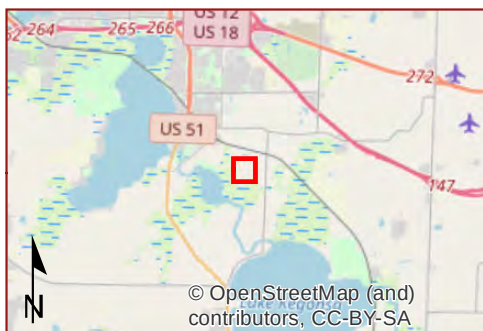
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**Figure 3. NRCS
Hydric Soils**

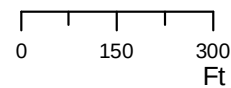
Lower Yahara River Trail
Project #20180124
T6N, R10E, S11
T Dunn, Dane Co, WI

2017 NAIP
Data: NRCS, HEG

3/12/2019



- Study Area (56.1 ac)
- NWI Wetlands
- NHD Waterbody



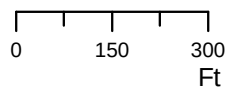
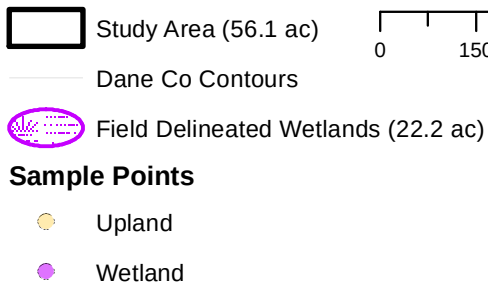
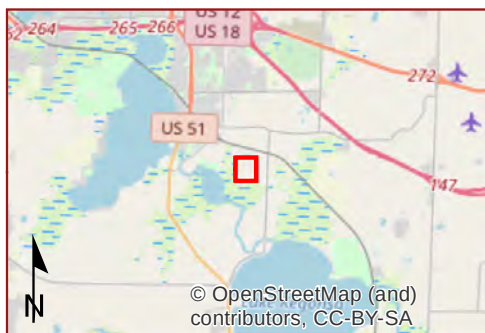
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Figure 4. National Wetland Inventory

Lower Yahara River Trail
Project #20180124
T6N, R10E, S11
T Dunn, Dane Co, WI

2017 NAIP
Data: USGS, HEG

10/15/2018



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Figure 5. Field Delineated Wetlands

Lower Yahara River Trail
Project #20180124
T6N, R10E, S11
T Dunn, Dane Co, WI

2017 NAIP
Data: Dane Co, HEG 11/16/2018



Village of McFarland
Lower Yahara River Trail Extension
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Appendix B | WETS Analysis

WETS Analysis Worksheet

Project Name: Lower Yahara River Trail Extension
 Project Number: 20180124
 Period of interest: August - October 2018
 Station: Dane County Regional Airport
 County: Dane County

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	October	1.66	2.56	3.08
2nd month prior:	September	1.99	3.18	3.84
3rd month prior:	August	2.67	4.34	5.25
Sum =		10.08		

Site determination

Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
5.36	Wet	3	3	9
5.46	Wet	3	2	6
10.10	Wet	3	1	3
Sum =	20.92	Sum*** =		18

*Normal precipitation with 30% to 70% probability of occurrence

Determination: **X** Wet
 _____ Dry
 _____ Normal

**Condition value:

Dry = 1
 Normal = 2
 Wet = 3

***If sum is:

6 to 9 then period has been drier than normal
 10 to 14 then period has been normal
 15 to 18 then period has been wetter than normal

Precipitation data source: Midwest Regional Climate Center, cli-MATE: MRCC Application Tools Environment

Reference: Donald E. Woodward, ed. 1997. *Hydrology Tools for Wetland Determination*, Chapter 19. Engineering Field Handbook. U.S. Department of Agriculture, Natural Resources Conservation Service, Fort Worth, TX.

WETS Station: MADISON DA
Requested years: 1988 - 201

Month	Avg Max Temp	Avg Min Temp	Avg Mean Temp	Avg Precip	30% chance precip less than	30% chance precip more than	Avg number days	Avg Snowfall
Jan	27.7	11.9	19.8	1.41	0.96	1.68	4	12.9
Feb	31.3	14.5	22.9	1.41	0.82	1.72	4	11.8
Mar	44	25	34.5	2.27	1.34	2.76	5	6.8
Apr	57.4	35.7	46.5	3.69	2.83	4.28	7	2.5
May	69.5	46.9	58.2	3.85	2.49	4.64	7	0.2
Jun	79	57.1	68.1	5.05	2.99	6.13	8	0
Jul	82.4	61.3	71.8	4.26	3.14	5	6	0
Aug	80.4	59.5	70	4.34	2.67	5.25	6	0
Sep	73.3	50.7	62	3.18	1.99	3.84	5	0
Oct	60.1	39.5	49.8	2.56	1.66	3.08	5	0.4
Nov	45.3	28.6	37	2.2	1.36	2.66	5	3
Dec	32	17.3	24.6	1.66	1.02	2.01	4	12.2
Annual:					31.92	39.18		
Average	56.9	37.3	47.1	-	-	-	69	49.8
Total	-	-	-	35.88	-	-	-	-

GROWING SEASON DATES

Years with missing data: 24 deg = 0 28 deg = 0 32 deg = 0
Years with no occurrence: 24 deg = 0 28 deg = 0 32 deg = 0
Data years used: 24 deg = 31 28 deg = 31 32 deg = 31
Probability: 24 F or higher 28 F or higher 32 F or higher
50 percent * 4/6 to 10/30: 207 days 4/20 to 10/15: 178 days 5/5 to 10/7: 155 days
70 percent * 4/2 to 11/4: 216 days 4/15 to 10/20: 188 days 5/2 to 10/11: 162 days
* Percent chance of the grow

STATS TABLE - total precipita

Yr	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annl
1939											1.67	0.24	0.29 2.2
1940	0.91	0.76	1.07	2.4	2.7	5.04	2.88	6.76	0.81	2.39	2.49	1.21	29.42
1941	2.72	0.78	1.82	1.93	3.03	3.42	2.93	1.29	9.87	2.86	0.93	1.29	32.87
1942	1.16	0.5	1.46	0.81	4.49	4.26	3.58	4.14	3.43	2.44	3.27	2.55	32.09
1943	2.15	0.76	2.48	0.99	2.88	2.33	1.54	2.31	0.37	0.83	3.15	0.99	20.78
1944	1.4	1.69	2.46	3.74	2.33	3.42	2.77	1.54	3.05	0.29	1.54	1.14	25.37
1945	0.31	1.4	1.4	2.89	5.27	2.81	2.65	4.07	6.27	0.78	2.34	1.47	31.66
1946	1.97	0.88	2.88	0.94	2.14	2.81	0.95	1.63	1.28	1.79	2.08	1.54	20.89
1947	2.26	0.29	1.73	3.68	4.35	3.98	2.17	1.58	6.03	1.85	2.82	1.72	32.46
1948	0.49	2.13	2.85	2.97	2.9	2.55	2.55	0.7	1.87	1.29	3.56	1.75	25.61
1949	1.97	1.26	2.35	1.1	2.22	6.43	5.76	2.2	1.12	1.86	1.04	1.7	29.01
1950	2.43	1.65	2.34	2.67	3.43	6.24	10.93	2.69	2.09	1.23	1.04	1.97	38.71
1951	1.44	1.7	2.13	4.42	3	2.55	3.08	3.08	1.56	5.37	2.17	1.47	31.97
1952	2.21	0.6	2.92	1.21	3.18	4.08	7.6	4.73	0.49	0.06	2.94	1.67	31.69
1953	0.64	2.77	2.58	3.12	1.02	5.15	4.28	3.49	2.11	1.81	0.52	2.17	29.66
1954	0.76	0.63	1.19	4.09	2.98	7.36	5.73	2.78	3.82	3.72	0.81	1.2	35.07
1955	0.65	1.67	0.96	3.65	2.1	2.78	3.93	1.55	0.8	3.24	0.57	0.59	22.49
1956	0.43	1	2.53	3.54	5.11	3.24	4.5	5.64	1.42	0.31	2.78	1.01	31.51
1957	0.41	0.38	1.19	2.4	5.8	6.41	4	4.86	0.95	2.14	2.91	1.41	32.86
1958	0.52	0.08	0.38	2.73	3.93	2.16	1.69	2.06	2.44	2.5	2.29	0.31	21.09
1959	1.4	1.58	2.9	4.01	3.06	3.86	4.12	5.68	3.44	5.55	2.29	2.45	40.34
1960	2.19	1.14	1.93	4.02	6.26	2.09	6.04	6.18	3.9	3.32	1.47	0.25	38.79
1961	0.19	1.01	3.42	1.33	1.17	1.84	3.67	1.78	7.92	3.75	3.94	1.02	31.04
1962	1.12	1.39	1.73	1.43	3.01	2.09	4.39	2.04	1.31	1.68	0.34	0.9	21.43
1963	0.76	0.39	2.33	1.67	1.82	8.15	2.29	3.23	2.3	0.64	1.96	0.65	26.19
1964	0.93	0.26	2.12	3.15	3.87	2.28	4.28	2.52	1.85	0.08	1.94	0.34	23.62
1965	1.8	0.74	2.51	2.94	1.86	2.31	3.3	6.77	9.22	1.69	1.96	2.5	37.6
1966	1.07	1.36	2.11	1.54	4.31	2.91	3.24	3.83	0.51	1.65	1.28	2.62	26.43
1967	1.63	1.17	1.49	2.57	3.53	6.46	2.51	2.71	2.68	5.52	1.83	1.89	33.99
1968	0.56	0.49	0.59	4.18	2.02	7.82	2.54	2.58	4.45	0.85	1.74	2.89	30.71
1969	2.26	0.18	1.47	2.72	3.45	7.96	4.28	0.96	1.35	2.65	0.7	1.66	29.64
1970	0.44	0.16	1.17	2.53	6.09	2.26	2.42	0.97	8.82	2.65	1.06	2.12	30.69
1971	1.48	2.59	1.52	2.42	0.98	2.27	1.65	3.96	1.87	1.3	3.48	3.64	27.16
1972	0.4	0.42	2.23	2.02	2.83	1.65	3.49	7.47	5.26	2.42	0.86	1.91	30.96
1973	1.54	1.2	5.04	7.11	5.27	0.81	2.68	2.53	3.59	2.3	1.48	1.98	35.53
1974	2.45	1.17	3.43	4.24	5.77	3.86	2.69	4.6	1.08	3.18	1.79	1.8	36.06
1975	0.98	1.54	3.09	4.19	4.57	4.3	6.05	5.25	0.84	0.64	2.79	0.29	34.53
1976	0.56	1.72	4.75	4.8	1.95	1.38	1.46	1.99	0.5	1.49	0.11	0.37	21.08
1977	0.53	1.44	3.03	2.59	2.52	2.63	6.63	5.19	2.84	1.41	2.12	1.6	32.53
1978	1.03	0.24	0.28	3.5	3.96	9.95	4.54	1.63	5.44	1.11	3.05	1.71	36.44
1979	1.69	0.9	2.67	2.46	2.7	2.53	2.8	4.96	0.11	3.1	2.27	1.93	28.12
1980	1.11	0.64	0.68	2.36	2.08	3.43	2.67	9.49	7.84	1.13	1.33	1.62	34.38
1981	0.14	2.47	0.33	3.42	0.64	4.99	4.81	7.06	3.1	2.68	1.71	0.75	32.1
1982	1.42	0.17	2.11	3.26	4.34	3.4	3.47	2.67	1.42	1.46	4.21	3.65	31.58
1983	0.53	2.26	2.7	2.23	4.21	1.85	1.92	5.05	2.85	2.59	3.18	2.3	31.67
1984	0.36	1.26	1.15	3.86	3.32	7.01	1.96	1.89	2.79	5.63	1.83	2.66	33.72
1985	1.43	1.89	3.13	1.52	3.35	3.06	4.48	2.98	5	4.58	5.13	2.39	38.94
1986	1.02	2.72	1.55	2.27	1.97	3.24	4.31	4.38	6.82	1.85	1.03	0.69	31.85
1987	0.68	0.62	1.99	2.46	3.9	1.17	3.26	7.16	3.61	1.24	3.24	4.09	33.42
1988	1.82	0.46	1.2	2.65	0.92	2.06	2.44	2.95	3.33	1.6	3.58	1.56	24.57
1989	0.61	0.57	1.69	1.69	1.72	1.67	4.97	6.46	0.89	1.88	0.98	0.26	23.39
1990	1.6	0.99	4.18	1.9	5.35	4.88	2.61	6.03	1.64	2.25	1.65	3.46	36.54
1991	1.17	0.44	4.24	4.89	2.2	3.75	5.18	2.34	3.96	5.35	3.86	1.71	39.09
1992	0.78	1.34	1.9	3.17	1.12	1.53	5.54	2.48	5.99	1.06	4.83	2.39	32.13
1993	1.6	1.18	3.29	5.33	3.81	6.67	9.34	5.57	3.74	0.91	1.55	0.35	43.34
1994	1.46	2.76	0.46	2.57	1.33	5.66	4.1	4.56	6.14	0.65	2.77	1.08	33.54
1995	2.12	0.06	2.17	4.14	3.92	1.22	4.36	5.58	1.78	4.29	3.17	0.77	33.58
1996	2.53	0.53	0.82	2.76	2.95	9.69	4.08	1.84	1.07	3.14	1.01	1.27	31.69
1997	1.24	2.52	1.54	2.5	1.94	5.23	6.23	2.33	1.38	1.23	1.25	1.25	28.64
1998	2.24	1.44	5.46	4.1	4.58	7.46	2.5	4.24	2.48	3.2	1.95	0.29	39.94
1999	2.1	0.91	0.47	6.91	3.72	5.57	4.49	3.26	1.55	0.88	1.21	0.86	31.93
2000	0.91	1.95	1.17	3.18	9.63	8.63	3.27	3.94	3.59	0.68	2	1.39	40.34
2001	0.99	2.64	0.59	3.07	4.16	5.4	3.09	7.64	5.53	2.62	1.59	1.13	38.45
2002	0.63	2.17	1.7	3.45	2.92	3.7	2.06	3.04	2.74	2.1	1.01	0.67	26.19
2003	0.36	0.5	1.72	2.95	3.67	2.1	4.24	0.87	4.24	1.6	7.49	2	31.74
2004	0.62	1.44	3.61	1.76	10.84	3.93	6.05	3.96	1	3.2	1.51	1.46	39.38
2005	2.2	1.45	1.56	1.68	3.96	1.65	3.92	1.22	1.95	0.76	3.36	0.99	24.7
2006	1.96	0.81	2.34	5.04	4.61	2.29	4.45	5.43	3.33	2.87	2.24	1.36	36.73
2007	0.84	1.59	3.39	4.68	1.4	4.82	2.69	15.18	2.45	3.35	0.39	3.63	44.41
2008	2.17	3.3	2.47	6.43	2.55	10.93	5.62	1.41	2.23	2.2	1.46	3.29	44.06
2009	0.54	1.91	6.19	4.43	3.68	4.17	1.94	2.49	4.68	3.8	1.32	3.2	38.35
2010	0.88	1.02	0.71	3.65	3.79	8.38	7.98	3.92	2.65	2.3	1.09	1.49	37.86
2011	1.28	1.59	2.96	3.61	2.4	3.55	1.85	3.06	3.31	1.35	3.35	2.23	30.54
2012	1.4	1.03	2.61	2.85	3.19	0.31	4	1.58	1.33	4.56	0.9	2.6	26.36
2013	2.87	2.41	2.41	5.83	6.57	10.86	4	1.53	3.19	1.89	2.2	1.62	45.38
2014	0.65	1.24	1.26	5.13	3.47	9.55	1.08	5.43	1.84	3.09	1.54	1.03	35.31
2015	0.66	0.54	0.76	4.38	4.18	3.15	5.02	4.1	5.99	2.73	4.75	3.33	39.59
2016	0.98	0.52	3.96	2.11	2.22	5.35	5.23	7.87	8.46	4.96	1.87	2.03	45.56
2017	2.76	1.94	2.83	5.3	2.83	6.73	6.52	3.85	0.55	3.56	0.68	0.73	38.28
2018	1.68	2.5	0.74	2.14	9.78	5.67	3.12	10.4	5.46	5.36	1.69	2.1	50.64
2019 M1.13													1.13

Notes: Data missing in any m
Data missing for all days in a
Creation date: 2016-07-22



Village of McFarland
Lower Yahara River Trail Extension
Project #: 20180124
March 13, 2019

Appendix C | Wetland Determination Data Sheets

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lower Yahara River Trail Extension City/County: T Dunn/Dane Co. Sampling Date: 10/17/2018
 Applicant/Owner: Matt Schuenke / Village of McFarland State: WI Sampling Point: P1
 Investigator(s): Jeff Kraemer, Scott Fuchs, Heartland Ecological Group Section, Township, Range: T6N, R10E, S11
 Landform (hillside, terrace, etc.): Subtle Drainageway Local relief (concave, convex, none): Concave Slope %: 1
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Wacousta silty clay loam NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) A WETS analysis was conducted to gauge wetness on site compared to a year of normal precipitation. The WETS analysis indicated that conditions are likely wetter than normal. This area received an abnormally high amount of rainfall during late summer and fall, with the months of October and August more than doubling their normal amounts of precipitation. Sample point P1 was recorded in a subtle drainageway near the eastern boundary of the wetland area.		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) <u>X</u> Drainage Patterns (B10) _____ Moss Trim Lines (B16) <u>X</u> Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>20</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>16</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Sample point recorded within a subtle drainageway.		

VEGETATION – Use scientific names of plants.

 Sampling Point: P1

Tree Stratum (Plot size: <u>30ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>105</u></td> <td>x 2 = <u>210</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>140</u> (A)</td> <td><u>320</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.29</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>105</u>	x 2 = <u>210</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>140</u> (A)	<u>320</u> (B)	Prevalence Index = B/A = <u>2.29</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>105</u>	x 2 = <u>210</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>140</u> (A)	<u>320</u> (B)																			
Prevalence Index = B/A = <u>2.29</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15ft</u>)																				
1. <u>Cornus racemosa</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Cornus alba</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5ft</u>)																				
1. <u>Phalaris arundinacea</u>	<u>95</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																
2. <u>Solidago canadensis</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		=Total Cover																		
Woody Vine Stratum (Plot size: <u>30ft</u>)																				
1. <u>Vitis riparia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

 Remarks: (Include photo numbers here or on a separate sheet.)
 No trees observed. Shrub carr/wet meadow vegetation present.

SOIL

Sampling Point P1

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

10/17/2018

Project/Site: Lower Yahara River Trail Extension City/County: T Dunn/Dane Co. Sampling Date: 11/14/2018
 Applicant/Owner: Matt Schuenke / Village of McFarland State: WI Sampling Point: P2
 Investigator(s): Jeff Kraemer, Scott Fuchs, Heartland Ecological Group Section, Township, Range: T6N, R10E, S11
 Landform (hillside, terrace, etc.): Graded Land Local relief (concave, convex, none): Concave Slope %: 3
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: St. Charles silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation X, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.) A WETS analysis was conducted to gauge wetness on site compared to a year of normal precipitation. The WETS analysis indicated that conditions are likely wetter than normal. This area received an abnormally high amount of rainfall during late summer and fall, with the months of October and August more than doubling their normal amounts of precipitation. Sample point P2 recorded within mowed vegetation - part of dog park walking paths.	

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: P2

Tree Stratum (Plot size: <u>30ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>125</u></td> <td>x 4 = <u>500</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>130</u> (A)</td> <td><u>515</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>3.96</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>125</u>	x 4 = <u>500</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>130</u> (A)	<u>515</u> (B)	Prevalence Index = B/A = <u>3.96</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>125</u>	x 4 = <u>500</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>130</u> (A)	<u>515</u> (B)																			
Prevalence Index = B/A = <u>3.96</u>																				
=Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15ft</u>)																				
1. <u>Acer negundo</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
2. <u>Lonicera X bella</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
=Total Cover																				
Herb Stratum (Plot size: <u>5ft</u>)																				
1. <u>Poa pratensis</u>	<u>100</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Taraxacum officinale</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Trifolium repens</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
=Total Cover				Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height.																
=Total Cover																				
Woody Vine Stratum (Plot size: <u>30ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
=Total Cover																				
=Total Cover				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																

 Remarks: (Include photo numbers here or on a separate sheet.)
 Vegetation consists of mowed turf vegetation. No woody vines, or trees present.

SOIL

Sampling Point P2

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

10/17/2018

Project/Site: Lower Yahara River Trail Extension City/County: T Dunn/Dane Co. Sampling Date: 11/14/2018
 Applicant/Owner: Matt Schuenke / Village of McFarland State: WI Sampling Point: P3
 Investigator(s): Jeff Kraemer, Scott Fuchs, Heartland Ecological Group Section, Township, Range: T6N, R10E, S11
 Landform (hillside, terrace, etc.): Plain Local relief (concave, convex, none): Concave Slope %: 1
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Sable silty clay loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.) A WETS analysis was conducted to gauge wetness on site compared to a year of normal precipitation. The WETS analysis indicated that conditions are likely wetter than normal. This area received an abnormally high amount of rainfall during late summer and fall, with the months of October and August more than doubling their normal amounts of precipitation. Sample point P3 recorded within weedy old field vegetation at the edge of a treeline adjacent to a mowed trail.	

HYDROLOGY

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

VEGETATION – Use scientific names of plants.

 Sampling Point: P3

Tree Stratum (Plot size: <u>30ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus alba</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>7</u></td> <td>x 2 = <u>14</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>20</u></td> <td>x 5 = <u>100</u></td> </tr> <tr> <td>Column Totals: <u>127</u> (A)</td> <td><u>514</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.05</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>7</u>	x 2 = <u>14</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>20</u>	x 5 = <u>100</u>	Column Totals: <u>127</u> (A)	<u>514</u> (B)	Prevalence Index = B/A = <u>4.05</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>7</u>	x 2 = <u>14</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>100</u>	x 4 = <u>400</u>																			
UPL species <u>20</u>	x 5 = <u>100</u>																			
Column Totals: <u>127</u> (A)	<u>514</u> (B)																			
Prevalence Index = B/A = <u>4.05</u>																				
2. <u>Quercus rubra</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>20</u> =Total Cover																				
Sapling/Shrub Stratum (Plot size: <u>15ft</u>)																				
1. <u>Cornus alba</u>	<u>2</u>	<u>No</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>2</u> =Total Cover																				
Herb Stratum (Plot size: <u>5ft</u>)																				
1. <u>Solidago canadensis</u>	<u>60</u>	<u>Yes</u>	<u>FACU</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. <u>Poa pratensis</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
3. <u>Rubus allegheniensis</u>	<u>10</u>	<u>No</u>	<u>FACU</u>																	
4. <u>Bromus inermis</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
5. <u>Rubus occidentalis</u>	<u>10</u>	<u>No</u>	<u>UPL</u>																	
6. <u>Cornus alba</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
<u>105</u> =Total Cover																				
Woody Vine Stratum (Plot size: <u>30ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
_____ =Total Cover																				

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

SOIL

Sampling Point P3

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

10/17/2018

Project/Site: Lower Yahara River Trail Extension City/County: T Dunn/Dane Co. Sampling Date: 11/14/2018
 Applicant/Owner: Matt Schuenke / Village of McFarland State: WI Sampling Point: P4
 Investigator(s): Jeff Kraemer, Scott Fuchs, Heartland Ecological Group Section, Township, Range: T6N, R10E, S11
 Landform (hillside, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope %: 0
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Sable silty clay loam NWI classification: PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____ If yes, optional Wetland Site ID: <u>W-1 Shrub carr</u>
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: (Explain alternative procedures here or in a separate report.) A WETS analysis was conducted to gauge wetness on site compared to a year of normal precipitation. The WETS analysis indicated that conditions are likely wetter than normal. This area received an abnormally high amount of rainfall during late summer and fall, with the months of October and August more than doubling their normal amounts of precipitation. Sample point P6 recorded within a depression adjacent to a large pond.		

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>X</u> Surface Water (A1) _____ Water-Stained Leaves (B9) <u>X</u> High Water Table (A2) _____ Aquatic Fauna (B13) <u>X</u> Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>12</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>8</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Standing water with some ice present.		

VEGETATION – Use scientific names of plants.

 Sampling Point: P4

Tree Stratum (Plot size: <u>30ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>150</u></td> <td>x 2 = <u>300</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>155</u> (A)</td> <td><u>315</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.03</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>150</u>	x 2 = <u>300</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>155</u> (A)	<u>315</u> (B)	Prevalence Index = B/A = <u>2.03</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>150</u>	x 2 = <u>300</u>																			
FAC species <u>5</u>	x 3 = <u>15</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>155</u> (A)	<u>315</u> (B)																			
Prevalence Index = B/A = <u>2.03</u>																				
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15ft</u>)																				
1. <u>Salix interior</u>	<u>40</u>	<u>Yes</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <u>X</u> 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% <u>X</u> 3 - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Cornus alba</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Acer negundo</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
		=Total Cover																		
Herb Stratum (Plot size: <u>5ft</u>)																				
1. <u>Phalaris arundinacea</u>	<u>100</u>	<u>Yes</u>	<u>FACW</u>	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. <u>Solidago gigantea</u>	<u>5</u>	<u>No</u>	<u>FACW</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
12. _____	_____	_____	_____																	
		=Total Cover																		
Woody Vine Stratum (Plot size: <u>30ft</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
		=Total Cover																		

 Remarks: (Include photo numbers here or on a separate sheet.)
 Shrub carr vegetation, no woody vines or trees observed.

SOIL

Sampling Point P4

[illegible]

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

10/17/2018

Project/Site: Lower Yahara River Trail Extension City/County: T Dunn/Dane Co. Sampling Date: 11/14/2018
 Applicant/Owner: Matt Schuenke / Village of McFarland State: WI Sampling Point: P5
 Investigator(s): Jeff Kraemer, Scott Fuchs, Heartland Ecological Group Section, Township, Range: T6N, R10E, S11
 Landform (hillside, terrace, etc.): Backslope Local relief (concave, convex, none): Linear Slope %: 2-3
 Subregion (LRR or MLRA): LRR K Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Virgil silt loam NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u> If yes, optional Wetland Site ID: _____
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: (Explain alternative procedures here or in a separate report.) A WETS analysis was conducted to gauge wetness on site compared to a year of normal precipitation. The WETS analysis indicated that conditions are likely wetter than normal. This area received an abnormally high amount of rainfall during late summer and fall, with the months of October and August more than doubling their normal amounts of precipitation. Sample point P5 recorded within an oak woodland approximately 30 feet from microdepression/ponded area.	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ Water-Stained Leaves (B9) _____ High Water Table (A2) _____ Aquatic Fauna (B13) _____ Saturation (A3) _____ Marl Deposits (B15) _____ Water Marks (B1) _____ Hydrogen Sulfide Odor (C1) _____ Sediment Deposits (B2) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Drift Deposits (B3) _____ Presence of Reduced Iron (C4) _____ Algal Mat or Crust (B4) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Iron Deposits (B5) _____ Thin Muck Surface (C7) _____ Inundation Visible on Aerial Imagery (B7) _____ Other (Explain in Remarks) _____ Sparsely Vegetated Concave Surface (B8)		<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>20</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>18</u> (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Observations of saturation is too deep to meet wetland hydrology indicator.		

VEGETATION – Use scientific names of plants.

 Sampling Point: P5

Tree Stratum (Plot size: <u>30ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status																																	
1. <u>Quercus velutina</u>	20	Yes	UPL	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B) Prevalence Index worksheet: <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Total % Cover of:</th> <th style="width: 20%;"></th> <th style="width: 20%;">Multiply by:</th> <th style="width: 20%;"></th> </tr> </thead> <tbody> <tr> <td>OBL species</td> <td style="text-align: center;">0</td> <td>x 1 =</td> <td style="text-align: center;">0</td> </tr> <tr> <td>FACW species</td> <td style="text-align: center;">5</td> <td>x 2 =</td> <td style="text-align: center;">10</td> </tr> <tr> <td>FAC species</td> <td style="text-align: center;">25</td> <td>x 3 =</td> <td style="text-align: center;">75</td> </tr> <tr> <td>FACU species</td> <td style="text-align: center;">40</td> <td>x 4 =</td> <td style="text-align: center;">160</td> </tr> <tr> <td>UPL species</td> <td style="text-align: center;">22</td> <td>x 5 =</td> <td style="text-align: center;">110</td> </tr> <tr> <td>Column Totals:</td> <td style="text-align: center;">92</td> <td>(A)</td> <td style="text-align: center;">355 (B)</td> </tr> <tr> <td colspan="3">Prevalence Index = B/A =</td> <td style="text-align: center;"><u>3.86</u></td> </tr> </tbody> </table>	Total % Cover of:		Multiply by:		OBL species	0	x 1 =	0	FACW species	5	x 2 =	10	FAC species	25	x 3 =	75	FACU species	40	x 4 =	160	UPL species	22	x 5 =	110	Column Totals:	92	(A)	355 (B)	Prevalence Index = B/A =			<u>3.86</u>
Total % Cover of:		Multiply by:																																		
OBL species	0	x 1 =	0																																	
FACW species	5	x 2 =	10																																	
FAC species	25	x 3 =	75																																	
FACU species	40	x 4 =	160																																	
UPL species	22	x 5 =	110																																	
Column Totals:	92	(A)	355 (B)																																	
Prevalence Index = B/A =			<u>3.86</u>																																	
2. <u>Carya ovata</u>	10	Yes	FACU																																	
3. <u>Quercus alba</u>	10	Yes	FACU																																	
4. <u>Prunus serotina</u>	5	No	FACU																																	
5. <u>Fraxinus pennsylvanica</u>	5	No	FACW																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
50		=Total Cover																																		
Sapling/Shrub Stratum (Plot size: <u>15ft</u>)																																				
1. <u>Viburnum lentago</u>	2	No	UPL	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																																
2. <u>Rosa multiflora</u>	2	No	FACU																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
4		=Total Cover																																		
Herb Stratum (Plot size: <u>5ft</u>)																																				
1. <u>Geum canadense</u>	20	Yes	FAC	Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vines – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																																
2. <u>Lonicera X bella</u>	5	No	FACU																																	
3. <u>Rhamnus cathartica</u>	5	No	FAC																																	
4. <u>Solidago canadensis</u>	5	No	FACU																																	
5. <u>Rosa multiflora</u>	3	No	FACU																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
9. _____	_____	_____	_____																																	
10. _____	_____	_____	_____																																	
11. _____	_____	_____	_____																																	
12. _____	_____	_____	_____																																	
38		=Total Cover																																		
Woody Vine Stratum (Plot size: <u>30ft</u>)																																				
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
_____		=Total Cover																																		

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