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I. INTRODUCTION

A Setting and Client Information

Site Location:

Southeast ¼ of Section 13, Township 5 North, Range 21 East in Franklin, Milwaukee County, Wisconsin with the address of 8647 South 35th Street. The location of the subject property is shown in Figure 1.

Client Information:

Ryan Konicek
10125 South 52nd Street
Franklin, WI 53132

B Scope of Services

This Natural Resource Protection Plan (NRPP) has been prepared by GRAEF for Ryan Konicek (client/user). The scope includes conducting site reconnaissance, review of available records and a written report to determine natural resource features on the subject property. Field work and site reconnaissance has been completed by Laura A. B. Giese, Ph.D., PWS, CF, CSE and Geoffrey Parish, PG, PH of GRAEF. The report has been authored by Mike Al-wathiqui of GRAEF.

C Purpose

The purpose of this report is to document natural resource protection areas as they relate to the proposed re-division and development of the subject property in accordance with the City of Franklin Unified Development Division 15-4.0100. The subject property consists of 9 acres to be divided into three roughly equal parcels (Parcel #1 - #3) of approximately 3 acres each. The owner is seeking to build two houses on the property, one on proposed Parcel #2 and one on proposed Parcel #3 (See NRPP). The subject property was found to contain wetlands, young woodlands, a waterway and its associated 100 year floodplain. The proposed location of Home #2 impacts 0.042-acres (1,828.7 ft^2) of the young woodland that is located outside of the conservation easement. There are no impacts associated with the construction of Home #1 or subdivision of the lot. The subject property can be seen on the Site Location Map (Figure 1).

II. EXISITING NATURAL RESOURCES

A. STEEP SLOPES

There are no steep slopes, as defined by the UDO within the subject property.

B. WOODLANDS – MATURE AND YOUNG

The western portion of the property is occupied by 3.03 acres of young woodland. This area was determined to be young woodland as it meets the UDO definition of a young woodland having canopy cover of a half-acre or more with 50 percent of the trees having a DBH of three inches or greater. The young woodland is dominated by Green Ash (*Fraxinus pennsylvanica*). Other trees present in the young woodland include American Elm (*Ulmus Americana*), American Basswood (*Tilia Americana*), White Ash (*Faxinus americana*), Shagbark Hickory (*Caria ovata*), Tatarian Honeysuckle (*Lonicera tatarica*), Common Buckthorn (*Rhamnus cathartica*), Norway Maple (*Acer plantoides*) and Cockspur Hawthorn (*Crataegus crus-galli*). There is a 0.52 acre stand of young woods on the east end of the property as well along 35th street primarily occupied by Scotts Pine (*Pinus sylvestris*). The combined young woodland acreage on site is 3.55 acres.

Seventy two percent of young woodland is located within other natural resource features which have 100 percent protection standards, therefore seventy two percent or 2.55 acres will be placed in a conservation easement to be protected. The 0.52 acre young woodland located on the east end of the site along 35th street and 0.48 acres near the proposed location of Home #2 have been left out of the conservation easement. No trees of 8 inch DBH or greater were observed within 25 feet of the proposed location of home #2. Home #2 will impact 0.042 acres of young woodland. The area of young woods to be impacted by Home #2 is dominated by dense Common Buckthorn (*Rhamnus cathartica*), Bell's Honeysuckle (*Loncera x bella*) and young Green Ash (*Fraxinus pennsylvanica*) less than 8 inches DBH.

C. LAKES AND PONDS

There are no lakes or ponds, as defined by the UDO within the subject property.

D. STREAMS

A straightened and intermittent, ditched section of Oak Creek transects the site from north to south along the east edge of the young woodland. North of the parcel boundary Oak Creek splits into two branches. One branch travels to the east to a storm water pond and the other branch continues west. This section of Oak Creek is a vegetated swale like feature absent of standing water, therefore an ordinary high water mark was not mapped as none exists.

E. SHORE BUFFERS

A 75 foot shore buffer has been placed on either side of the straightened and ditched portion of Oak Creek which transects the property. This portion of the stream is a vegetated swale absent of an ordinary high water mark. The 75 foot buffer has been measured out from the centerline of the feature. The buffer occupies 2.11 acres.

F. FLOODPLAINS, FLOODWAYS, AND FLOOD LANDS

Per the FEMA FIRM map review the 100 year floodplain of Oak Creek occupies much of western and central portions of the site. The floodplain will be placed in a conservation easement to be protected.

G. WETLANDS, SHORE LAND WETLANDS, WETLAND BUFFERS, WETLAND SETBACKS.

There is one large wetland on the site with an associated wetland buffer and setback. It is a hardwood swamp occupying the majority of the young woodlands. There is a small finger of wet meadow wetland that extends from the young woodland, east into the managed turf lawn. The wetland boundary was concurred with by the WDNR during a site visit. The wetland and wetland buffer will be placed in a conservation easement to be protected. The wetland setback will not be disturbed as part of the development.

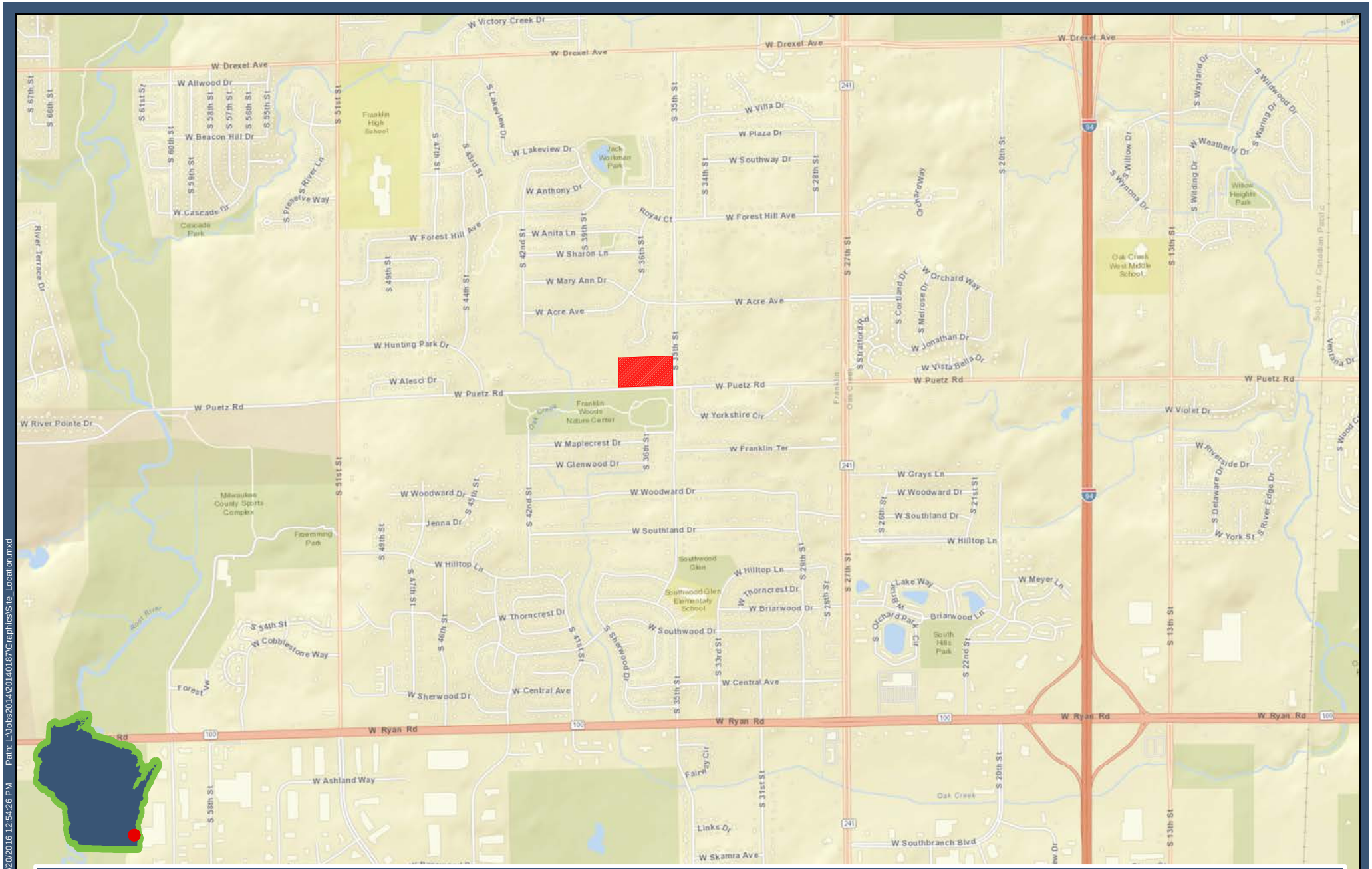
III. SUMMARY

The eastern portion of the subject property is primarily occupied by a large managed turf lawn with an existing house. The western portion of the property is dominated by young woodland and hardwood swamp. High elevations occur in the eastern portion of the site and appear to be associated with grading for the house and 35th street. The rest of the site is fairly flat with the lowest elevations occurring at the intermittent portion of Oak Creek which transects the site north to south along the eastern boundary of the young woodland. This intermittent portion of Oak Creek transecting the site is a vegetated swale absent of standing water and an ordinary high water mark. A buffer of 75 feet was placed on either side of the center line of the swale. The 100 year floodplain of Oak Creek occupies much of western and central portions of the site. There are no steep slopes present on the site.

All natural resource features with a 100 percent protection standard have been placed in a conservation easement to be protected which includes all of the 100 year floodplain, the wetland and wetland buffer and the 75 foot stream buffer. Seventy two percent of young woodland is located within other natural resource features which have a 100 percent protection standard, therefore seventy two percent (2.55 acres) will be placed in a conservation easement to be protected. The 0.52 acre young woodland located on the east end of the site along 35th street and 0.48 acres near the proposed location of Home #2 has been left out of the conservation easement. The end result is a 5.49 acres of natural resource land to be placed in a conservation easement and protected. No trees of 8 inch DBH or greater were observed within 25 feet of the proposed location of home #2. A driveway location has not yet been identified, but a future driveway location is not to impact the conservation easement or any protected resources. There are no impacts associated with the construction of Home #1 or subdivision of the lot.

Figure 1

Site Location Map



0 500 1,000 2,000
Feet

N

1 in = 2,000 ft

SITE LOCATION

35TH & PUETZ

FRANKLIN
MILWAUKEE CO., WISCONSIN

FIGURE #1

GRAEF

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APPENDIX A

Site Intensity Calculations

DIVISION 15-3.0500 SITE INTENSITY AND CAPACIETY CALCULATIONS

SECTION 15-3.0501 NATURAL RESOURCE PROTECTION AND SITE INTENSITY AND CAPACITY CALCULATIONS FOR RESIDENTIAL AND NONRESIDENTIAL USES REQUIRED

A. **Recognition of Natural Resource Features.** This Ordinance recognizes that landforms, parcel size and shape, and natural resource features vary from site to site and that development regulations must take into account these variations. The maximum density or intensity of use allowed in any zoning district is controlled by the various district standards set forth for each of the various zoning districts of this Ordinance.

B. **When Natural Resource Protection and Site Intensity and Capacity Calculations Are Required.** Natural resource protection is required for all development and the site intensity and capacity calculations set forth in this Division shall be made for each parcel of land to be used or built upon in the City of Franklin including all new Certified Survey Maps, Preliminary Plats, condominiums, multiple-family residential developments, all nonresidential development, and as may be required elsewhere in this Ordinance except as excluded under the provisions of Section 15-3.0501C. of the Unified Development Ordinance.

C. **Exclusions (When Natural Resource Protection and Site Intensity and Capacity Calculations Are Not Required).** Natural resource protection shall not be required and the site intensity and capacity calculations set forth in this Division shall not be required for the construction of single-family and two-family residential development located on non-divisible existing lots of record within existing platted Subdivisions (with an approved Final Plat), Certified Survey Maps, and Condominiums existing on August 1, 1998, the effective date of this Ordinance or for which a natural resource protection plan and site intensity capacity calculations were filed at the time of division after August 1, 1998.

SECTION 15-3.0502 CALCULATION OF BASE SITE AREA

The ***base site area*** shall be calculated as indicated in Table 15-3.0502 for each parcel of land to be used or built upon in the City of Franklin as referenced in Section 15-3.0501 of this Ordinance.

Table 15-3.0502

WORKSHEET FOR THE CALCULATION OF BASE SITE AREA FOR BOTH RESIDENTIAL AND NONRESIDENTIAL DEVELOPMENT

STEP 1:	Indicate the total gross site area (in acres) as determined by an actual on-site boundary survey of the property.	9 acres
STEP 2:	Subtract (-) land which constitutes any existing dedicated public street rights-of-way, land located within the ultimate road rights-of-way of existing roads, the rights-of-way of major utilities, and any dedicated public park and/or school site area.	- 0 acres
STEP 3:	Subtract (-) land which, as a part of a previously approved development or land division, was reserved for open space.	- 0 acres
STEP 4:	In the case of ***"Site Intensity and Capacity Calculations" for a proposed residential use***, subtract (-) the land proposed for nonresidential uses; *or* In the case of ***"Site Intensity and Capacity Calculations" for a proposed nonresidential use***, subtract (-) the land proposed for residential uses.	- 0 acres
STEP 5:	Equals "Base Site Area"	= 9 acres

SECTION 15-3.0503 CALCULATION OF THE AREA OF NATURAL RESOURCES TO BE PROTECTED

All land area with those natural resource features as described in Division 15-4.0100 of this Ordinance and as listed in Table 15-3.0503 and lying within the ***base site area*** (as defined in Section 15-3.0502), shall be measured relative to each natural resource feature present. The actual land area encompassed by each type of resource is then entered into the column of Table 15-3.0503 titled "Acres of Land in Resource Feature." The acreage of each natural resource feature shall be multiplied by its respective ***natural resource protection standard*** (to be selected from Table 15-4.0100 of this Ordinance for applicable agricultural, residential, or nonresidential zoning district) to determine the amount of resource protection land or area required to be kept in open space in order to protect the resource or feature. The sum total of all resource protection land on the site equals the ***total resource protection land***. The ***total resource protection land*** shall be calculated as indicated in Table 15-3.0503.

PROTECTION LAND

Natural Resource Feature	Protection Standard Based Upon Zoning District Type (circle applicable standard from Table 15-4.0100 for the type of zoning district in which the parcel is located)			Acres of Land in Resource Feature	
	Agricultural District	Residential District	Non-Residential District.		
Steep Slopes:					
10-19%	0.00	0.60	0.40	X _____ =	_____
20-30%	0.65	0.75	0.70	X _____ =	_____
+ 30%	0.90	0.85	0.80	X _____ =	_____
Woodlands & Forests:					
Mature	0.70	0.70	0.70	X _____ =	_____
Young	0.50	0.50	0.50	X 3.55 =	1.775
Lakes & Ponds	1	1	1	X _____ =	
Streams	1	1	1	X _____ =	
Shore Buffer	1	1	1	X 2.11 =	2.11
Floodplains/Floodlands	1	1	1	X 5.02 =	5.02
Wetland Buffers	1	1	1	X 1.51 =	1.51
Wetlands & Shoreland Wetlands	1	1	1	X _____ =	
TOTAL RESOURCE PROTECTION LAND (Total of Acres of Land in Resource Feature to be Protected)					5.49

***Note**: In conducting the calculations in Table 15-3.0503, if two or more natural resource features are present on the same area of land, only the most restrictive resource protection standard shall be used. For example, if floodplain and young woodlands occupy the same space on a parcel of land, the resource protection standard would be 1.0 which represents the higher of the two standards.*

The majority of natural resources present occupy space within the 5.02 acre 100-year floodplain except for 0.47 acres of Shore and wetland buffer which extends beyond the 100-year floodplain. The result is 5.49 acres of land in resource features to be protected.

SECTION 15-3.0504 CALCULATION OF SITE INTENSITY AND CAPACITY FOR RESIDENTIAL USES

In order to determine the maximum number of dwelling units which may be permitted on a parcel of land zoned in a residential zoning district, the site intensity and capacity calculations set forth in Table 15-3.0504 shall be performed.

Table 15-3.0504

WORKSHEET FOR THE CALCULATION OF SITE INTENSITY AND CAPACITY FOR RESIDENTIAL DEVELOPMENT

STEP 1:	**CALCULATE MINIMAL REQUIRED ON-SITE OPEN SPACE** Take ***Base Site Area*** (from Step 5 in Table 15-3.0502): 9 Multiple by Minimum ***Open Space Ratio (OSR)*** (see specific residential zoning district OSR standard): X 0 Equals **MINIMUM REQUIRED ON-SITE OPEN SPACE** =	0 acres
STEP 2:	**CALCULATE NET BUILDABLE SITE AREA:** Take ***Base Site Area*** (from Step 5 in Table 15-3.0502): 9 Subtract ***Total Resource Protection Land*** from Table 15-3.0503) or ***Minimum Required On-Site Open Space*** (from Step 1 above), whichever is greater: - 5.49 Equals **NET BUILDABLE SITE AREA** =	3.51 acres
STEP 3:	**CALCULATE MAXIMUM NET DENSITY YIELD OF SITE:** Take ***Net Buildable Site Area*** (from Step 2 above): 3.51 Multiply by Maximum ***Net Density (ND)*** (see specific residential zoning district ND standard): X 2.972 Equals **MAXIMUM NET DENSITY YIELD OF SITE** =	10.43 D.U.s
STEP 4:	**CALCULATE MAXIMUM GROSS DENSITY YIELD OF SITE:** Take ***Base Site Area*** (from Step 5 of Table 15-3.0502): 9 Multiple by Maximum ***Gross Density (GD)*** (see specific residential zoning district GD standard): X 2.972 Equals **MAXIMUM GROSS DENSITY YIELD OF SITE** =	26.748 D.U.s
STEP 5:	**DETERMINE MAXIMUM PERMITTED D.U.s OF SITE:** Take the ***lowest*** of Maximum Net Density Yield of Site (from Step 3 above) or Maximum Gross Density Yield of Site (from Step 4 above):	10.43 D.U.s

APPENDIX B

Site Photographs

SITE PHOTOGRAPHS

Natural Resource Protection Plan
Milwaukee County, Wisconsin

Photos Taken by GRAEF on 10-21-14

Photo #: 1

Direction of View:

Northwest

Comment:

View of the managed lawn taken from the southeast corner of the Study Area.

Photo #: 2

Direction of View:

Northeast

Comment:

View lof managed lawn, looking towards 35th Street.

SITE PHOTOGRAPHS

Natural Resource Protection Plan
Milwaukee County, Wisconsin

Photos Taken by GRAEF on 10-21-14

Photo #: 3

Direction of View:

-

Comment:

Overview of young woodlands within the 100-year floodplain.

Photo #: 4

Direction of View:

-

Comment:

View of young woodlands and hardwood swamp.

SITE PHOTOGRAPHS

Natural Resource Protection Plan
Milwaukee County, Wisconsin

Photos Taken by GRAEF on 10-21-14

Photo #: 5

Direction of View:

East

Comment:

Overview of 0.52 acres of young woodland on east edge of site.

Photo #: 6

Direction of View:

South

Comment:

View of south end of straightened and ditched section of Oak Creek which transects the site along the young woodland. This portion of Oak Creek is a vegetated swale with intermittent flow.

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APPENDIX C

Wetland Delineation Report and WDNR Concurrence Letter

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
101 S. Webster Street
P.O. Box 7921
Madison, WI 53707-7921

Scott Walker, Governor
Cathy Stepp, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711

November 23, 2016

WIC-SE-2016-41-03657

Bridgestone Capital LLC
Ryan Konicek
10125 S 52nd Street
Franklin, WI 53132

RE: Wetland Delineation Report for an approximately 9 acre project area located in the SE1/4 of the SW1/4 of Section 13, Township 5 North, Range 21 East (Northwest of the Intersection of 35th Street and Puetz Road), City of Franklin, Milwaukee County

Dear Mr. Konicek:

We have received and reviewed the wetland delineation report prepared for the above mentioned site by GRAEF. This letter will serve as confirmation that the wetland boundaries as shown on the attached wetland delineation map are acceptable. This finding is based upon an October 28, 2016 field visit. Any filling or grading within these areas will require DNR approvals. Our wetland confirmation is valid for five years unless altered site conditions warrant a new wetland delineation be conducted. Be sure to send a copy of the report, as well as any approved revisions, to the U.S. Army Corps of Engineers.

In order to comply with Chapter 23.321, State Statutes, please supply the department with a polygon shapefile of the wetland boundaries delineated within the project area. Please do not include data such as parcel boundaries, project limits, wetland graphic representation symbols, etc. If internal upland polygons are found within a wetland polygon, then please label as UPLAND. The shapefile should utilize a State Plane Projection, and be overlain onto recent aerial photography. If a different projection system is used, please indicate what system the data are projected to. In the correspondence sent with the shapefile, please supply a brief description of each wetland's plant community (eg: wet meadow, floodplain forest, etc.). Please send these data to Calvin Lawrence (608-266-0756, or calvin.lawrence@wisconsin.gov).

There is a waterway identified on the property that may be considered to be navigable by the DNR. DNR Chapter 30 permits may be needed if earthwork (filling, dredging, etc.) or structures (culverts, bridges, erosion control, etc.) are proposed in or adjacent to navigable waterways. The Wetland ID Program recommends that a navigability determination be conducted on the waterway within the project area, if the waterway has not been evaluated previously.

If you are planning development on the property, you are required to avoid take of endangered and threatened species, or obtain an incidental take authorization, to comply with the state's Endangered Species Law. To insure compliance with the law, you should submit an endangered resources review form (Form 1700-047), available at http://dnr.wi.gov/topic/ERReview/Review.html. The Endangered Resources Program will provide

a review response letter identifying any endangered and threatened species and any conditions that must be followed to address potential incidental take.

In addition to contacting WDNR, be sure to contact your local zoning office and U.S. Army Corps of Engineers to determine if any local or federal permits may be required for your project.

If you have any questions, please contact me at (608) 261-6430 or email Neil.Molstad@wisconsin.gov.

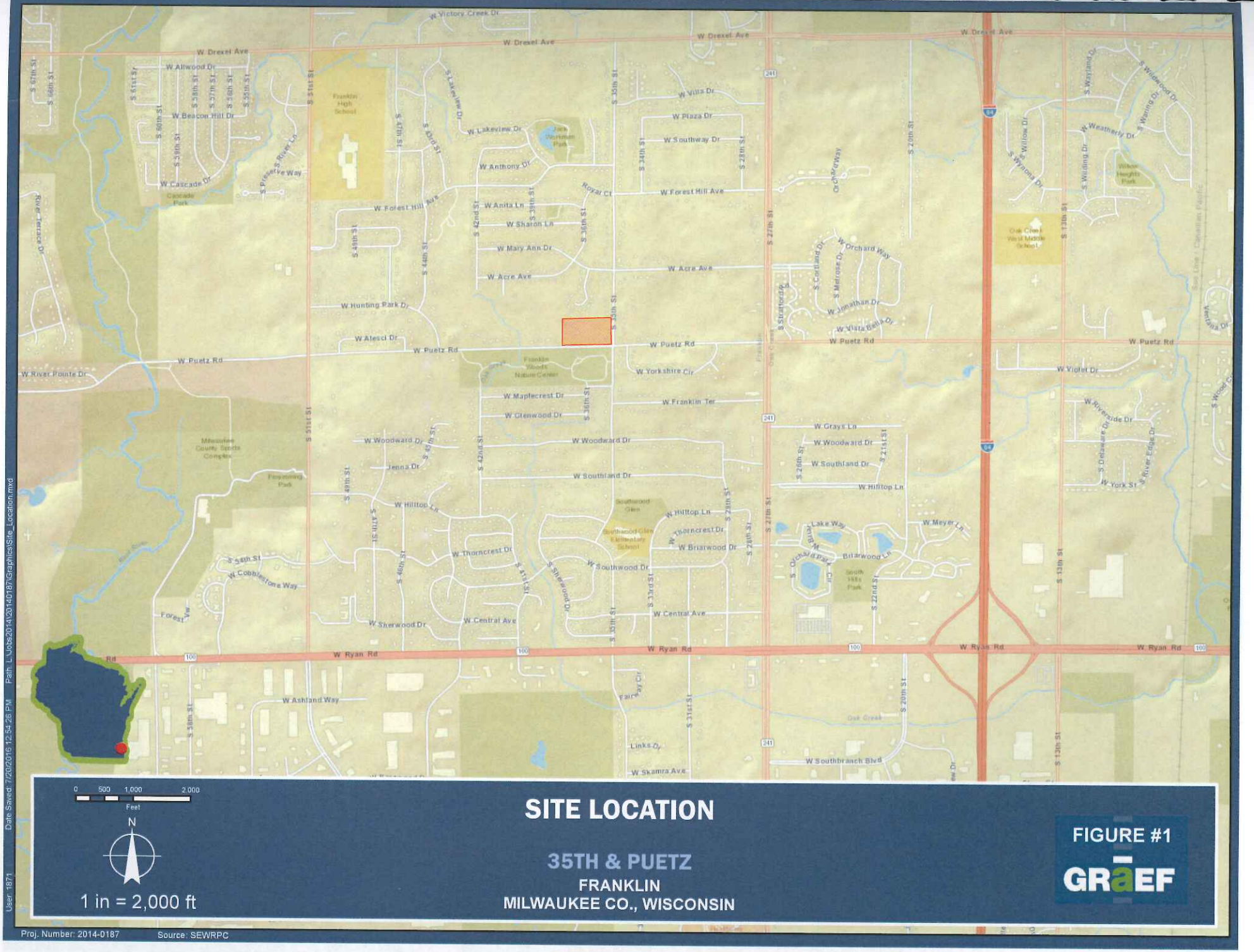
Sincerely,

Neil Molstad
Wetland Identification Specialist

cc: April Marcangeli, Project Manager, U.S. Army Corps of Engineers
Joel Dietl, Planning Manager, City of Franklin
Mike Al-wathiqui, GRAEF
Joshua Wied, DNR Water Management Specialist
Intake, DNR Stormwater SE Region
Chris Jors, SEWRPC

Attachments:

General Site Location Mapping for the Project Area
Wetland Delineation Mapping for the Project Area



SITE LOCATION

35TH & PUETZ

FRANKLIN
MILWAUKEE CO., WISCONSIN

FIGURE #1

GRAEF

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S 36th St
S 35th St
W Puetz Rd
SP-4
SP-3
SP-1
SP-2
W-1
1.65 AC
Legend
Sample Point
Parcel Line
Wetland Delineation
Site Boundary
0 37.5 75 150
Feet
N
1 in = 150 ft
WETLAND DELINEATION
35TH & PUETZ
FRANKLIN
MILWAUKEE CO., WISCONSIN
EXHIBIT #1
GRAEF
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Date Saved: 11/2/2016 9:18:55 AM
User: 1871

8647 South 35th Street
Wetland Delineation
Milwaukee County

July 2016

Prepared for
Ryan Konicek
10125 South 52nd Street
Franklin, WI 53132

Prepared by

125 S 84th St., Suite 401
Milwaukee, WI 53214
(414) 259-1500

Project Manager: Michael J. Ratzburg, P.L.S.
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Report Author: Mike Al-wathiqui
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Project No.: 2014-0187.00

CONTENTS

1.0 INTRODUCTION 1
2.0 METHODS 1
3.0 RESULTS AND DISCUSSION 2
3.1 BACKGROUND REVIEW 2
3.1.1 Topography 2
3.1.2 Wisconsin Wetland Inventory 2
3.1.3 Soils 2
3.1.4 Precipitation Data. 2
3.2 FIELD STUDY 3
3.2.1 Site Description 3
3.2.2 Wetlands 3
4.0 CONCLUSION 4
5.0 LIMITATIONS 4
6.0 REFERENCES 5

APPENDICES

Appendix A: Figures
Appendix B: WETS Analysis
Appendix C: Wetland Delineation Map
Appendix D: Site Photographs
Appendix E: Wetland Determination Data Forms
Appendix F: Statement of Qualifications

1.0 INTRODUCTION

Per the request of Mr. Ryan Konicek, GRAEF conducted a wetlands delineation within a designated Study Area at 8647 South 35th Street (Figure 1, Appendix A). The site is located in Section 13, Township 5 North, Range 21 East in the City of Franklin, Milwaukee County, Wisconsin. The Study Area is primarily occupied by a large managed turf lawn with a house on the east edge of the property. The western portion of the property is dominated by young woodland.

The purpose of this wetland delineation was to determine the location and extent of wetlands located within designated Study Areas. Our study is presented here in terms of methodology, results, and conclusions.

The wetlands delineation field investigation was conducted by GRAEF scientists Geoffrey B. Parish and Laura A. B. Giese on October 20th and October 21st, 2014. A Statement of Qualifications on the field investigators is provided in Appendix G.

2.0 METHODS

This delineation was conducted in accordance with the guidelines of the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory, 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0, 2010), the Corps of Engineers and the Wisconsin Department of Natural Resources guidance on delineation reports (2015) and the Wisconsin Department of Natural Resources guidelines (WI Department of Administration, WI Coastal Management Program, 1995). National Wetland Indicator status and taxonomic nomenclature is referenced from The National Wetland Plant List (Lichvar et al., 2016). National Wetland Indicator status is based on the Midwest Region.

Prior to conducting fieldwork, GRAEF scientists reviewed several maps including the United States Geological Survey (USGS) 7.5' Quadrangle maps, Wisconsin Wetland Inventory Map, Natural Resource Conservation Service (NRCS) Soil Survey Map, and aerial photographs. *Note: NRCS no longer releases their NRCS Wetland Inventory Maps to other than the landowner or operator without documented permission from the landowner or operator; therefore they were not reviewed nor are they included with this report.*

Precipitation data from approximately 90 days prior to the field investigation was obtained from a weather station near the Study Area and compared with 30-year average precipitation data obtained from an NRCS WETS Table for the County where the Study Area was located to determine if antecedent hydrologic conditions at the time of the site visit were normal for the time of the year.

Sampling points were located in areas exhibiting wetland and upland characteristics to document the presence and/or absence of wetlands and to provide support for the delineated wetland boundaries. At each sampling point, data were collected to document the vegetation, soils, and indicators of wetland

hydrology. The wetland boundaries were staked using wire pin flags and when needed flagging tape. Wetland boundaries were generally determined by distinct to subtle differences in the abundance of hydrophytic vegetation and upland vegetation, apparent topographic breaks, and regular probing of soils.

3.0 RESULTS AND DISCUSSION

3.1 BACKGROUND REVIEW

3.1.1 Topography

The topographic map (Figure 4, Appendix A) showed elevations ranging from 749 to 760 above sea level. High elevations occur in the eastern portion of the site and appear to be associated with grading for the house and 35th street. The site slopes from both the east and west sides toward Oak Creek, which appears to have been realigned and straightened.

3.1.2 Wisconsin Wetland Inventory

The Wisconsin Wetland Inventory (WWI) map (Figure 2, Appendix A) depicted one T3K, forested, broad-leaved deciduous, wet soil wetland within the Study Area.

3.1.3 Soils

According to the NRCS Soil Survey map (Figure 3, Appendix A) two mapped soil units are located within the Study Area. Mapped soils include Ashkum silty clay loam, 0 to 2 percent slopes (AsA) which is classified as a hydric soil and Morley silt loam, 2 to 6 percent slopes (MzdB) which is classified as a non-hydric soil.

3.1.4 Precipitation Data.

The WETS analysis worksheet is provided in Appendix B. According to the USDA eFOTG Database, the total precipitation from a nearby weather station (Milwaukee MT MARY CLG, WI5474) for the 14 days prior to the October 20th site visit was 1.62 inches. The most recent rainfall event prior to the October 20th site visit was 0.08 inches on October 19th. It also rained 0.02 inches on the day of the October 21st site visit. The total precipitation for the 90 days prior to the month of October was approximately 8.88 inches, which was 1.94 inches below a 30-year average. The precipitation data for the 90 day period preceding the month of October were entered into a WETS analysis worksheet to determine antecedent hydrologic conditions at the time of the site visit for field investigation purposes. Based on this analysis, the precipitation total for the 90 days prior to the site visits was considered below average. However, despite the dryer than normal conditions for the previous three months, the relatively significant rain events immediately before the October 20th site visit and during the day of the October 21st site visit may have contributed to wetter than normal site conditions during the time of field work.

3.2 FIELD STUDY

3.2.1 Site Description

The Study Area is primarily occupied by a large managed turf lawn with a house on the east edge of the property. The western third of the property is dominated by young woodland. High elevations occur in the eastern portion of the site and appear to be associated with grading for the house and 35th street. The rest of the sight site slopes from both east and west sides toward Oak Creek, which appears to have been realigned and straightened. Oak Creek is located at the eastern boundary of the woodlands.

3.2.2 Wetlands

One wetland (W-1) was delineated. The delineated wetland boundaries and data points are shown on a map (Exhibit 1) in Appendix C. Data was collected and recorded on Wetland Determination Data Forms at four data points to document wetland and upland locations (Appendix E). Photographs were taken at each data point and other notable locations (Appendix D).

Wetland W-1 was 1.65 acres and extended outside of the Study Area. The wetland was mostly comprised of a hardwood swamp with a finger of wet meadow extending east into the managed field. The wet meadow portion of wetland W-1 was dominated by Creeping Bentgrass (*Agrostis stolonifera*) with vegetation in the hardwood swamp portion dominated by Common Buckthorn (*Rhamnus cathartica*), American Elm (*Ulmus americana*), Green Ash (*Fraxinus pennsylvanica*) and Blisterwort (*Ranunculus recurvatus*). Soils in the wetland were depleted below a dark surface with a presence of redoximorphic features meeting the criteria for hydric soil indicators A11 (Depleted Below Dark Surface) and F3 (Depleted Matrix). Indicators of hydrology included standing water in the wet meadow as well as D2 (Geomorphic Position) and D5 (FAC-neutral Test). Indicators of hydrology in the hardwood swamp portion of wetland W-1 included D2 (Geomorphic Position) and D5 (FAC-neutral Test).

The upland adjacent to the wet meadow portion of wetland W-1 was dominated by Canada Bluegrass (*Poa compressa*) and Dandelion (*Taraxacum officinale*). Vegetation in the upland adjacent to the hardwood swamp portion of wetland W-1 was dominated by Green Ash (*Fraxinus pennsylvanica*), Tartarian Honeysuckle (*Lonicera tatarica*), Gray Dogwood (*Cornus racemose*), Cockspur Hawthorn (*Crataegus crus-galli*) and Common Buckthorn (*Rhamnus cathartica*). Soils in the upland immediately adjacent to the wet meadow portion of W-1 were dark with a presence of redoximorphic features near the surface meeting the hydric indicator criteria for F6 (Redox Dark Surface). This may be an artifact of the sample point's proximity to the wetland boundary. There was also a water table at 8" with saturation at 2" at the upland sample point adjacent the wet meadow portion of W-1. However it had rained a total 0.14 inches three days prior to the site visit including the day of the site visit. Topography and vegetation were also used to delineate the wetland boundary in this area. The soils in the upland adjacent to the hardwood swamp portion of wetland W-1 were fairly high in chroma and light in value and did not meet any of the criteria for hydric soil indicators. There were no indicators of hydrology in the upland adjacent to the hardwood swamp portion of wetland W-1.

A channelized section of Oak Creek was identified within the Study Area entering into the site on the north side of the Study Area on the edge of the woods. The waterway runs along the edge of the wooded area and exits the site through a culvert under Puetz Road at the south end of the Study Area.

4.0 CONCLUSION

Based on the wetlands delineation completed by GRAEF one wetland (W-1) was delineated with a total of 1.65 acres. One waterway was also identified.

Activity in delineated wetlands or waterways may require permits from the U.S. Army Corps of Engineers, Wisconsin Department of Natural Resources, and local governments prior to beginning any work.

5.0 LIMITATIONS

The results of this field study are based on site conditions at the time of the field study, which was conducted in accordance with current regulatory policy and methods. Unknown and future conditions that affect observations of field indicators, and change in interpretation of regulatory policy, may modify future findings.

Statements within this report about the connectivity of the delineated wetlands to surface waters are the professional opinions of GRAEF's scientists and are not significant nexus determinations or jurisdictional determinations. Opinions on connectivity are based on general field observations and a cursory review available map resources. The ultimate authority to determine jurisdiction resides with the U.S. Army Corps of Engineers and the Wisconsin Department of Natural Resources.

The U.S. Army Corps of Engineers and the Wisconsin Department of Natural Resources have the ultimate authority to determine wetland boundaries, and adjustments to wetland boundaries may occur based on decisions made by these regulatory agencies.

6.0 REFERENCES

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APPENDICES

Appendix A Figures

Appendix B WETS Analysis

Appendix C Wetland Delineation Map

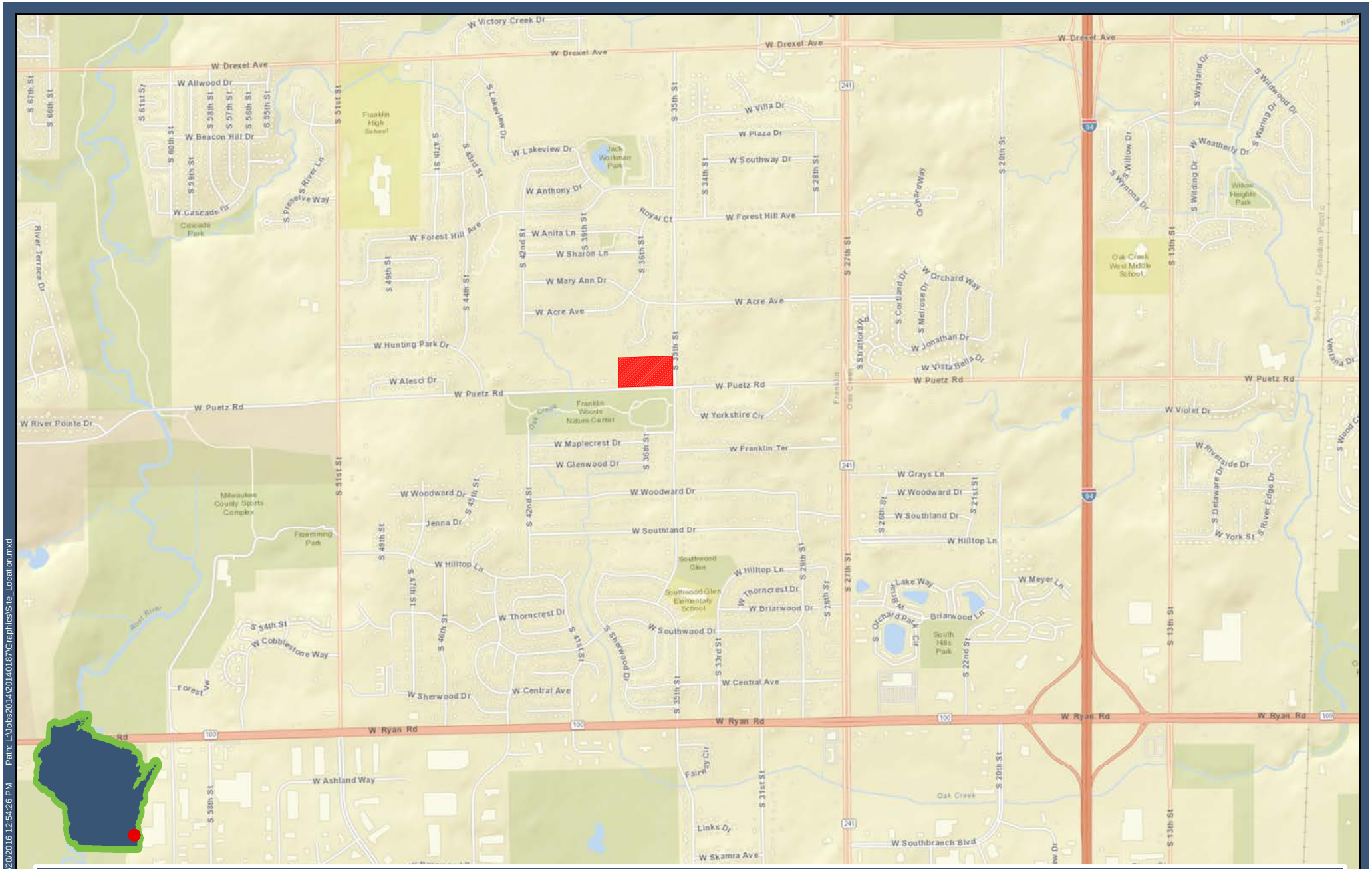
Appendix D Site Photographs

Appendix E Wetland Determination Data Forms

Appendix F Statement of Qualifications

APPENDIX A

Figures



0 500 1,000 2,000
Feet

N

1 in = 2,000 ft

SITE LOCATION

35TH & PUETZ

FRANKLIN
MILWAUKEE CO., WISCONSIN

FIGURE #1

GRAEF

User: 1871 Date Saved: 7/20/2016 12:54:26 PM Path: L:\Jobs\2014\2014040187\Graphics\Site_Location.mxd

Proj. Number: 2014-0187 Source: SEWRPC

WISCONSIN WETLAND INVENTORY

35TH & PUETZ

FRANKLIN
MILWAUKEE CO., WISCONSIN

FIGURE #2

GRAEF

Path: L:\Jobs\2014\20140187\Graphics\WWI.mxd
Date Saved: 7/20/2016 1:42:20 PM
User: 1871

Proj. Number: 2014-0187
Source: SEWRPC


MzdC2
MzdB
S 36th St
BlA
S 35th St
AsA
MzdB
W Puetz Rd
AsA
MzdC2
W Yorkshire Cir
BlA
0 50 100 200
Feet
N
1 in = 200 ft
Legend
Soil Unit
Site Boundary
Map Unit Name | Map Symbol | Hydric Classification
Ashkum silty clay loam, 0 to 2 percent slopes | AsA | Hydric
Morley silt loam, 2 to 6 percent slopes | MzdB | Not Hydric
SOIL MAP
35TH & PUETZ
FRANKLIN
MILWAUKEE CO., WISCONSIN
FIGURE #3
GRAEF
Path: L:\Jobs\2014\20140187\Graphics\Soil_Map.mxd
Date Saved: 7/20/2016 1:38:46 PM
User: 1871
Proj. Number: 2014-0187
Source: SEWRPC

CONTOUR MAP

35TH & PUETZ

FRANKLIN
MILWAUKEE CO., WISCONSIN

FIGURE #4

GRAEF

Path: L:\Jobs\2014\2014040187\Graphics\Contour.mxd
Date Saved: 7/20/2016 2:21:40 PM
User: 1871

Proj. Number: 2014-0187
Source: SEWRPC

2000 AERIAL

35TH & PUETZ

FRANKLIN
MILWAUKEE CO., WISCONSIN

FIGURE #5

GRAEF

Path: L:\Jobs\2014\2014-0187\Graphics\2000_Aerial.mxd
Date Saved: 7/20/2016 2:30:58 PM
User: 1871

Proj. Number: 2014-0187 Source: SEWRPC

2005 AERIAL

35TH & PUETZ

FRANKLIN
MILWAUKEE CO., WISCONSIN

FIGURE #6

GRAEF

User: 1871 Date Saved: 7/20/2016 2:38:31 PM Path: L:\Jobs\2014\2014018 7\Graphics\2005_Aerial.mxd

Proj. Number: 2014-0187 Source: SEWRPC

2010 AERIAL

35TH & PUETZ

FRANKLIN
MILWAUKEE CO., WISCONSIN

FIGURE #7

GRAEF

User: 1871 Date Saved: 7/20/2016 2:40:41 PM Path: L:\Jobs\2014\2014018 7\Graphics\2010_Aerial.mxd

Proj. Number: 2014-0187 Source: SEWRPC

2015 AERIAL

35TH & PUETZ

FRANKLIN
MILWAUKEE CO., WISCONSIN

FIGURE #8

GRAEF

Path: L:\Jobs\2014\20140187\Graphics\2015_Aerial.mxd
Date Saved: 7/20/2016 2:31:40 PM
User: 1871

Proj. Number: 2014-0187
Source: SEWRPC

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APPENDIX B

WETS Analysis

WETS Analysis

Project Site: 8647 South 35th Street
Project Number: 2014-0187.00
Period of interest: July-September, 2014
County: Milwaukee

Long-term rainfall records (from WETS table)

	Month	3 years in 10 less than	Normal	3 years in 10 greater than
1st month prior:	September	1.57	3.38	4.13
2nd month prior:	August	2.81	3.98	4.72
3rd month prior:	July	2.4	3.46	4.11
		Sum =	**10.82**	

Site determination

Site Rainfall (in)	Condition Dry/Normal*/Wet	Condition** Value	Month Weight	Product
1.39	Dry	1	3	3
4.45	Normal	2	2	4
3.04	Normal	2	1	2
Sum = **8.88**			Sum*** =	**9**

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

Determination: 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: USDA eFOTG

WETS Station: MILWAUKEE MT MARY CLG, WI5474

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.

APPENDIX C

Wetland Delineation Map


S 36th St
S 35th St
W Puetz Rd
SP-4
SP-3
SP-1
SP-2
W-1
1.65 AC
Legend
Sample Point
Wetland Delineation
Site Boundary
Parcel Line
0 37.5 75 150
Feet
N
1 in = 150 ft
WETLAND DELINEATION
35TH & PUETZ
FRANKLIN
MILWAUKEE CO., WISCONSIN
EXHIBIT #1
GRAEF
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Date Saved: 7/20/2016 2:28:42 PM
User: 1871
Proj. Number: 2014-0187
Source: SEWRPC

APPENDIX D

Site Photographs

SITE PHOTOGRAPHS

8647 South 35th Street
Milwaukee County, Wisconsin

Photos Taken by GRAEF on 10/20/2014

Photo #: 1

Direction of View:

West

Comment:

Wetland sample point SP-1 in wetland W-1.

Photo #: 2

Direction of View:

East

Comment:

Upland sample point SP-2.

SITE PHOTOGRAPHS

8647 South 35th Street
Milwaukee County, Wisconsin

Photos Taken by GRAEF on 10/20/2014

Photo #: 3

Direction of View:

-

Comment:

Wetland sample point SP-3 in wetland W-1.

Photo #: 4

Direction of View:

-

Comment:

Upland sample point SP-4.

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APPENDIX E

Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 8647 South 35th Street City/County: Franklin/Milwaukee Sampling Date: 20-Oct-14

Applicant/Owner: Ryan Konicek State: WI Sampling Point: **SP-1 wtd**

Investigator(s): Laura Giese, Geof Parish Section, Township, Range: S 13 T 5 N R 21 E

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave

Slope: 1.0% / 0.6 ° Lat.: Long.: Datum:

Soil Map Unit Name: Ashkum silty clay loam, 0 to 2 percent slopes (AsA), Hydric WWI classification: None

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.)

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

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

Remarks:
This is on the toeslope of a microtopragraphic depression in a mown field. All three of the criteria are met indicating that this area is wetland. Wetland ID: W-1. It has rained 0.14 inches over the past three days, including today, making hydrological conditions naturally problematic.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' R)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15' R)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' R)				
1. Agrostis stolonifera	75	☑	71.4%	FACW
2. Poa compressa	20	☐	19.0%	FACU
3. Taraxacum officinale	10	☐	9.5%	FACU
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	105	= Total Cover		
Woody Vine Stratum (Plot size: 30' R)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	0	x 3 =	0
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	105 (A)		270 (B)

Prevalence Index = B/A = 2.571

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes ◉ No ○**

Remarks: (Include photo numbers here or on a separate sheet.)
This is an area of a mown field, dominated by Creeping Bentgrass. The hydrophytic vegetation criterion is met.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **SP-1 wtd**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc [2]	Texture	Remarks
0-3	10YR	3/2	95	7.5YR	5/8	5	C	M	Silty Clay Loam	
3-4	10YR	5/1	90	7.5YR	5/8	10	C	M	Silty Clay	
4-16	10YR	4/2	50	7.5YR	5/8	15	C	M	Silty Clay	
	N	2/1	30	10YR	5/6	5	C	M		

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2] Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric Soil Present? Yes ◉ No ○

Remarks:

The hydric soil criterion is met by indicators A11 (Depleted Below Dark Surface) and F3 (depleted Matrix).

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ○	No ◉	Depth (inches):	
Water Table Present?	Yes ◉	No ○	Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	0

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

The water table is present at the surface. Multiple secondary hydrology indicators are present as well. The criterion is met. It has rained 0.14 inches overe the past three days, including today, making hydrological conditions naturally problematic.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 8647 South 35th Street City/County: Franklin/Milwaukee Sampling Date: 20-Oct-14

Applicant/Owner: Ryan Konicek State: WI Sampling Point: **SP-2 upl**

Investigator(s): Laura Giese, Geof Parish Section, Township, Range: S 13 T 5 N R 21 E

Landform (hillslope, terrace, etc.): Shoulder slope Local relief (concave, convex, none): convex

Slope: 2.0% / 1.1 ° Lat.: Long.: Datum:

Soil Map Unit Name: Ashkum silty clay loam, 0 to 2 percent slopes (AsA), Hydric WWI classification: None

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.)

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

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

Remarks:
This is on the shoulder slope of a depression in an area of microtopagraphic relief. Hydric soils are present, but are likely an artifact of the proximity of the sample point to the wetland boundary. Recent rainfall has made hydrological conditions naturally problematic as well.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' R)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15' R)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	0	= Total Cover		
Herb Stratum (Plot size: 5' R)				
1. Poa compressa	75	☑	60.0%	FACU
2. Taraxacum officinale	35	☑	28.0%	FACU
3. Agrostis gigantea	15	☐	12.0%	FACW
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	125	= Total Cover		
Woody Vine Stratum (Plot size: 30' R)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

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

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

Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	0	x 3 =	0
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals:	125 (A)		470 (B)

Prevalence Index = B/A = 3.760

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ○ **No** ◉

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

This is part of a mown lawn dominated by Canada Blue Grass. The vegetation indicate that this area is upland. The hydrophytic vegetation criterion is not met.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **SP-2 upl**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-2	10YR	3/2	100						Silty Clay Loam	
2-6	10YR	3/2	96	10YR	5/6	2	C	M	Silty Clay Loam	
				7.5YR	5/8	2	C	M		
6-16	10YR	3/1	90	10YR	5/6	5	C	M	Silty Clay Loam	
				7.5YR	5/8	5	C	M		
16-19	10YR	5/1	60	7.5YR	5/8	15	C	M	Silty Clay	
	10YR	5/2	25							

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

The hydric soil criterion is met by indicator F6 (Redox Dark Surface).

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ◉ No ○ Depth (inches): 8

Saturation Present? (includes capillary fringe) Yes ◉ No ○ Depth (inches): 2

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

The water table is present at 8" with saturation at 2". The hydrology criterion is met, however it has rained 0.14 inches overe the past three days, including today, making hydrological conditions naturally problematic.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 8647 South 35th Street City/County: Franklin/Milwaukee Sampling Date: 21-Oct-14

Applicant/Owner: Ryan Konicek State: WI Sampling Point: **SP-3 wtd**

Investigator(s): Laura Giese, Geof Parish Section, Township, Range: S 13 T 5 N R 21 E

Landform (hillslope, terrace, etc.): Toeslope Local relief (concave, convex, none): concave

Slope: 1.0% / 0.6 ° Lat.: Long.: Datum:

Soil Map Unit Name: Ashkum silty clay loam, 0 to 2 percent slopes (AsA), Hydric WWI classification: None

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.)

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

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

Remarks:
This is an depressional area in the woods. All three of the criteria are met indicating that this area is wetland. Wetland ID: W-1. It has rained 0.14 inches overe the past three days making hydrological conditions naturally problematic.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' R)	Absolute % Cover	Dominant Species?	Rel.Strat. Cover	Indicator Status
1. Ulmus americana	70	☑	56.0%	FACW
2. Fraxinus pennsylvanica	30	☑	24.0%	FACW
3. Rhamnus cathartica	25	☑	20.0%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	125	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15' R)				
1. Rhamnus cathartica	35	☑	100.0%	FAC
2.	0	☐	0.0%	
3.	0	☐	0.0%	
4.	0	☐	0.0%	
5.	0	☐	0.0%	
	35	= Total Cover		
Herb Stratum (Plot size: 5' R)				
1. Rhamnus cathartica	25	☑	35.7%	FAC
2. Ranunculus recurvatus	35	☑	50.0%	FACW
3. Hydrophyllum virginianum	10	☐	14.3%	FAC
4.	0	☐	0.0%	
5.	0	☐	0.0%	
6.	0	☐	0.0%	
7.	0	☐	0.0%	
8.	0	☐	0.0%	
9.	0	☐	0.0%	
10.	0	☐	0.0%	
	70	= Total Cover		
Woody Vine Stratum (Plot size: 30' R)				
1.	0	☐	0.0%	
2.	0	☐	0.0%	
	0	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	135	x 2 =	270
FAC species	95	x 3 =	285
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	230 (A)		555 (B)

Prevalence Index = B/A = 2.413

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes ◉ No ○**

Remarks: (Include photo numbers here or on a separate sheet.)
This is a hardwood swamp. The hydrophytic vegetation criterion is met.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **SP-3 wtd**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-10	10YR	2/1	100						Silty Clay Loam	
10-14	10YR	3/1	95	5YR	4/4	5	C	M	Silty Clay Loam	
14-17	10YR	3/1	85	10YR	4/6	15	C	M	Silty Clay	
17-20	10YR	4/2	80	10YR	4/6	20	C	M	Silty Clay	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☑ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ◉ No ○

Remarks:

It is in the best professional judgement of the delineator that organic material was masking the redox within the upper 10 inches of the soil profile and it is likely that indicator F6 (Dark Surface Redox) is met.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ◉ No ○

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

Remarks:

Multiple secondary hydrology indicators are present. The criterion is met. It has rained 0.14 inches overe the past three days making hydrological conditions naturally problematic, but there is no standing water or water table present in this area.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: 8647 South 35th Street City/County: Franklin/Milwaukee Sampling Date: 21-Oct-14

Applicant/Owner: Ryan Konicek State: WI Sampling Point: **SP-4 upl**

Investigator(s): Laura Giese, Geof Parish Section, Township, Range: S 13 T 5 N R 21 E

Landform (hillslope, terrace, etc.): Shoulder slope Local relief (concave, convex, none): convex

Slope: 5.0% / 2.9 ° Lat.: Long.: Datum:

Soil Map Unit Name: Ashkum silty clay loam, 0 to 2 percent slopes (AsA), Hydric WWI classification: None

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.)

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

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

Remarks:
This is in the wooded area upslope of the hardwood swamp. The hydrophytic vegetation criterion is met, but the soils and a lack of hydrology indicate that this area is upland.

VEGETATION - Use scientific names of plants.

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot size: 30' R)			
1. Fraxinus pennsylvanica	50	☑ 83.3%	FACW
2. Ulmus americana	10	☐ 16.7%	FACW
3.	0	☐ 0.0%	
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	60	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15' R)			
1. Lonicera tatarica	30	☑ 37.5%	FACU
2. Cornus racemosa	30	☑ 37.5%	FAC
3. Crataegus crus-galli	20	☑ 25.0%	FAC
4.	0	☐ 0.0%	
5.	0	☐ 0.0%	
	80	= Total Cover	
Herb Stratum (Plot size: 5' R)			
1. Rhamnus cathartica	40	☑ 66.7%	FAC
2. Lonicera tatarica	10	☐ 16.7%	FACU
3. Symphyotrichum lateriflorum	5	☐ 8.3%	FACW
4. Frangula alnus	5	☐ 8.3%	FACW
5.	0	☐ 0.0%	
6.	0	☐ 0.0%	
7.	0	☐ 0.0%	
8.	0	☐ 0.0%	
9.	0	☐ 0.0%	
10.	0	☐ 0.0%	
	60	= Total Cover	
Woody Vine Stratum (Plot size: 30' R)			
1.	0	☐ 0.0%	
2.	0	☐ 0.0%	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	70	x 2 =	140
FAC species	90	x 3 =	270
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	200 (A)		570 (B)

Prevalence Index = B/A = 2.850

Hydrophytic Vegetation Indicators:

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

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

Hydrophytic Vegetation Present? **Yes** ◉ **No** ○

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

The hydrophytic vegetation criterion is met, but the soils and a lack of hydrology indicate that this area is upland.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **SP-4 upl**

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

Depth (inches)	Matrix Color (moist)		%	Redox Features Color (moist)		%	Type [1]	Loc²	Texture	Remarks
0-10	10YR	4/3	95	10YR	5/6	5	C	M	Silty Clay	
10-20	10YR	3/2	100						Silty Clay Loam	

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

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

Indicators for Problematic Hydric Soils [3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ○ No ◉

Remarks:

There are no indicators of hydric soil present. The criterion is not met.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ○ No ◉ Depth (inches): _____

Water Table Present? Yes ○ No ◉ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ○ No ◉ Depth (inches): _____

Wetland Hydrology Present? Yes ○ No ◉

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

Remarks:

There are no indicators of hydrology here. This is uplslope of the hardwood swamp. The criterion is not met.

GRĀEF

collaborāte / formulāte / innovāte

APPENDIX F

Statement of Qualifications

STATEMENT OF QUALIFICATIONS

FIELD INVESTIGATORS:

Laura A. B. Giese, Ph.D., PWS, CF, CSE

Dr. Giese has more than 20 years of experience working in natural resources: research, private consulting, teaching, and outreach. Dr. Giese's experience includes wetland delineation and functional analyses, stream assessment and restoration, mitigation monitoring, threatened and endangered species surveys, vegetation surveys, and forest management. Her ecology background (forestry and wetland) and diverse scientific interests complement the consulting profession. She has authored numerous wetland and forestry technical reports and analysis of impacts to natural resources. Dr. Giese also teaches two graduate level courses: Wetlands Ecology and Policy and Invasive Species Ecology and Policy, and serves on the Board of the Southeastern Wisconsin Invasive Species Consortium, Inc

Geoffrey B. Parish, P.G., P.H.

Mr. Parish is a hydrologist and geologist with M.S. and B.S. degrees in geosciences from the University of Wisconsin-Milwaukee. He has studied wetland hydrology and soils in Wisconsin, and Illinois for almost twenty years. His wetland work has included wetland delineations, wetland mitigation projects, including enhancements, restorations and creations in Wisconsin and Illinois. Geof has worked on over 300 delineations in Wisconsin in the past six years. He was on a team of scientists that provided expert witness services to the US Department of Justice regarding impacts to a state of Wisconsin owned wetland. In 2014 and 2015 Geof co-taught Wetland Hydrology for the UW-Milwaukee School of Continuing Education Water Technology Program. The class focused on hydrology basics, wetland hydrology indicators, determining sources of wetland hydrology, soil indicators of wetland hydrology, hydrology of plant community types, wetland water budgets and restoration of wetlands. The 2014 proposed revisions of the definition of "Waters of the U.S." were presented in 2014 and the finalized definition published in 2015 was presented in 2015 along with connectivity concepts. Geof has worked on habitat mapping, including numerous plant species such as Forked Aster, Prairie Milkweed Small White Lady Slipper Hairy Wild Petunia and Slender Bog Arrow-grass, inarticulate species Karner Blue Butterfly, Gorgone Checker Spot, Phlox Moth and the Persius Dusky Wing, and animals such as Northern Cricket Frog and Red-shouldered Hawk. Geof has worked on the assessment of wetland functions using the WDNR Wetland Rapid Assessment Method Version 2.0 for project corridors. Geof has worked on invasive species mapping projects, such as mapping Phragmites australis along IH 94 in Kenosha and Racine Counties, and mapped the location of invasive species along over thirty miles of the Fox River from the City of Waukesha to Waterford, Wisconsin.