500 W. MAIN STREET
PO BOX 100
WAUNAKEE WI 53597
608-850-8500
FAX 608-849-5628
WWW.WAUNAKEE.COM/VILLAGE

July 17, 2017

Larry Palm, Executive Chairperson - Capital Area Regional Planning Commission
City County Building - Room 362
210 Martin Luther King Jr. Blvd.
Madison WI 53703

RE: Amendment of the Water Quality Management Plan for Dane County to revise Environmental Corridor Boundaries near the new Waunakee Public Library

Dear Mr. Palm:

The Village of Waunakee has been working for the past eight years to clean up and redevelop a 6.34-acre former industrial site adjoining a Village park, one block north of Main Street. When Waunakee Alloy Casting Corporation closed in 2009 after more than 60 years in operation as a metal foundry and casting company, it left a legacy of soil contamination and vacant buildings. With help from the USEPA to remove mercury and PCB contaminants, and with assistance from Dane County to clear the site, it is now ready for its next life as home of the new Waunakee Public Library.

This site for the new library is ideally located contiguous with McWatty Park, a 2.1-acre neighborhood park adjoining Six Mile Creek at the east end of our historic downtown business district. We propose to integrate and improve both sites, as illustrated in the enclosed materials, to achieve the following benefits:

- An exceptional natural and civic amenity to enhance the success of our Central Business District, including recent and future new residential units in our downtown area
- Walking, biking and vehicle access to the library from both N. Madison St. and Pleasant Dr., to optimize access and user safety from both directions
- Completion of a segment in a planned off-street trail along Six Mile Creek through the Village, connecting more neighborhoods with a safe walking route
- Restoration of approximately 1,300 linear feet of Six Mile Creek to restore natural stream hydrology and increase the channel's habitat value while controlling invasive species
- Restoration of shoreland buffer strips near the Creek, replacing turf grass with native prairie and wetland species that can slow, filter and cool runoff from impervious surfaces before it reaches the Creek
- Removal of an underutilized basketball court and replacement of an aging playground

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the village of Waunakee

With this application the Village respectfully requests amendment to the Water Quality Management Plan for Dane County to remove and alter area from the mapped Environmental Corridor. Access to Pleasant Dr. requires a driveway through McWatty Park on land occupied by the basketball court and playground, both of which are currently within the mapped Environmental Corridor. There will be a net increase in impervious surface within this area. The grading will allow all runoff from the impervious surface to be conveyed to stormwater facilities prior to release to Six Mile Creek. This includes the off-street path that is within the environmental corridor. The Village is confident that the other vegetative improvements in and near the Creek throughout the two properties will result a net improvement in water quality to the water shed.

The Village is very excited about this proposed enhancement to our community. Please contact me if you have any questions or concerns about this request.

Sincerely,

Todd J. Schmidt, Village Administrator
Village of Waunakee

July 17, 2017

Mike Rupiper
Capital Area Regional Planning Commission
210 Martin Luther King Jr. Blvd. Room 362
Madison, WI 53703

RE: Waunakee Library – Major Amendment to Environmental Corridor

Dear Mr. Rupiper:

Thanks again for your assistance with the proposed Waunakee Library slated for construction on the former Waunakee Alloy Site. Your visit and walk through on June 1st was very helpful for the Village, Library Board, and AE Team. Since then, we have made significant progress on our design.

In order to complete necessary improvements, we are requesting a Major Amendment to the Environmental Corridor in order to perform the following actions:

- Grading within 30' of wetlands
- Impervious areas within 75' of wetlands
- Filling in of wetlands

In support of this request, the following documents are enclosed with this letter:

1. Existing Site Plan – Aerial
2. Existing Site Survey
3. Existing Site Photographs
4. Proposed Site Plan – Color
5. Proposed Site Plan – Environmental Setbacks
6. Proposed Grading Plan
7. Concept Stormwater Management Plan
8. Wetland Delineation Report
9. Trail Connectivity

In addition to the material listed above, I'd like to draw attention to some specific aspects of how this project will benefit the objectives set forth by the Capital Regional Planning Commission to protect water quality in Dane County.

- **Contaminated Site Cleanup**
  The site at 201 North Madison Street currently houses the former Waunakee Alloy plant. The Village purchased this brownfield site to redevelop it for the library. The Village has retained consultants for clean up, mitigation, and/or removal of existing hazardous materials and structures. The site will become an extension of the existing adjacent McWatty Park and the recreational and multi-use path corridor proposed along Six Mile Creek.

  The development of this corridor will incorporate a recreational trail for cyclists, walkers, and joggers following Six Mile Creek. The trail is intended to connect with future trail extensions to the east and west of the library site. The northeastern area of the site will accommodate relocation of the existing McWatty Park playground.

- **Stormwater Quality, Infiltration, and Peak Flow**
  Redevelopment of the property will require that stormwater management facilities be incorporated into the site. A green roof along with two bioretention areas will meet the required total suspended solids removal and oil and grease treatment needed for this site. Although not required, peak flow and infiltration will also naturally occur within these facilities. On the south side of the creek, the proposed parking lot will be designed with stormwater facilities that will fulfill the requirements for new development.This will be a large improvement over existing conditions, which direct stormwater runoff into the creek without treatment.

- **Increase of Open Space**
  The proposed site improvements will decrease the amount of imperviousness on the site from approximately 46% to 36%. The increase in the pervious area is over 36,000 square feet. The change of vegetation of turf grass to a vegetative buffer of native plantings along the creek will also increase the value of the pervious space.

- **Trail Connectivity**
  The property to be developed has been part of planning documents for connectivity of multi-use trails since at least 2005. This redevelopment will provide a major connection point of 900' of trail that will be used by village residents to access the library, the nearby Prairie Elementary School, and adjacent neighborhoods.

- **Landscaping Improvements**
  Responding to site conditions and the existing environment, the design intent is to provide a low impact development (LID) that will utilize landscaped areas to slow, treat,

and infiltrate stormwater runoff before it reaches the edges of Six Mile Creek. The landscape design will provide a mixture of systems within the larger site including:

- Vegetation mitigation and restoration along the banks of Six Mile Creek
- A prairie buffer between the creek bank, recreational trail, and park's setting beyond the site
- Bioretention structures that collect, retain, and infiltrate stormwater
- Mowed lawns adjacent to and surrounding the library, parking, and drive to create recreational areas for the larger park setting
- Tree planting at parking areas and appropriate areas around the site for future shade and biodiversity
- Tree screening between the library and existing residential properties along the north and east property boundaries

Plant selection, locations, arrangements, and soil preparation will be appropriately specified for specific function and moisture conditions (wet, dry). Additional considerations will include regional tolerances, non-invasiveness, biodiversity, low maintenance, and appearance.

The vegetative buffer along the creek will be a minimum 20 feet wide and exceed that width along most of the creek. Landscape objectives for the buffer zone include the removal of existing poor quality or invasive trees and the addition of appropriate new plants as follows:

- Trees – Create an upper canopy to provide habitat for birds and other wildlife and shade for wetlands
- Shrubs – Create a mid-story of vegetation to provide food and cover for wildlife and help prevent erosion
- Herbaceous Plants – Create an understory and include ferns, wildflowers, and various groundcover plants

- **Sustainability and High Performance Building Systems**
  The approximate 40,000 square foot, two-story Waunakee Public Library is designed with energy efficiency and environmental sustainability in mind. An integrative design process will be used on this facility to support high-performance, cost-effective project outcomes. This integrated design process will bring the whole team to the table early on in the project to highlight opportunities, set goals, and establish roles and responsibilities for the team throughout design, construction, and into the occupancy period of the new building.

  The project team will take the following steps in the Design Development phase to establish a high performance, cost-effective project:

- Building systems coordination meeting
- Site design coordination meeting
- Conceptual Energy Model
- Conceptual Daylighting Model

This process includes an early analysis of the interrelationships between building systems. Envelope requirements for the library include access to natural light and views, energy efficiency, and durability.

Key components of this concept are:

- A high Window to Wall Ratio (WWR)
- Clear, high-performance glass to preserve view and daylight qualities (minimal tinting)
- Exterior overhangs and a louver system to control solar gain and reduce glare
- Varying depths of field (moderate to high) for outdoors views
- Design that enhances views into and out of the space
- Low impact development integrated into the site design
- Exterior public spaces into the park and environmental corridor setting
- Biodiverse landscaping with tree, prairie, and wetland plantings
- Conveying a sense of time and weather (seasonality of landscape)
- Leveraging various intensities of light and shadow that change over time to create conditions that occur in nature
    a. Daylight from multiple angles
    b. Controlled direct sunlight in appropriate areas
    c. Diurnal and seasonal light
    d. Artificial light sources and layers

- **Green Roof**

The Library is proposed to have a modular green roof system over a portion of the roof (approximately 4,150 square feet). A green roof system requires a high-quality waterproofing and root replant system, drainage system, lightweight growing medium, and plants. Benefits of the green roof include:

- Reduction of impervious surfaces to mitigate stormwater runoff
- Ability to absorb stormwater and release it slowly
- A longer life-span than standard roofs
- Helps cool the membrane and building during summer months

Green roof plantings are selected for aesthetics, drought tolerance, stormwater management, and regional appropriateness. They will include low-growing succulents, particular colorful sedums. Sedums low growth, spreading habits, drought tolerance, seasonal flowers and contrasting

foliage colors, textures and forms. Additionally, an appropriate mix of herbaceous perennials and ornamental grasses may be incorporated into the planting mix.

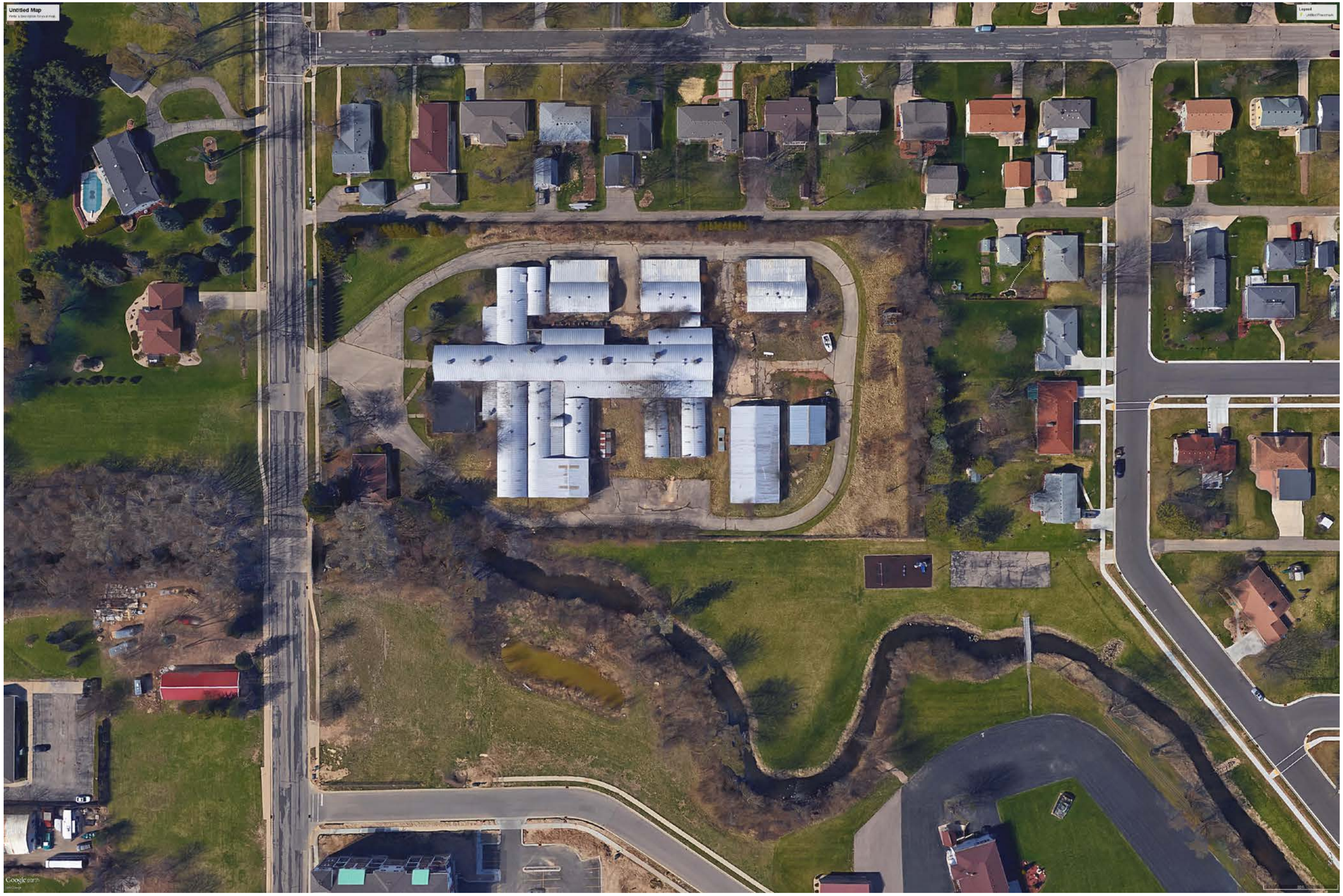
Please review the attachments provided showing some of the items discussed on the previous pages in graphic form. If you have any questions, comments, or need additional information, please let me know at once. We look forward to your favorable consideration during your review of our request.

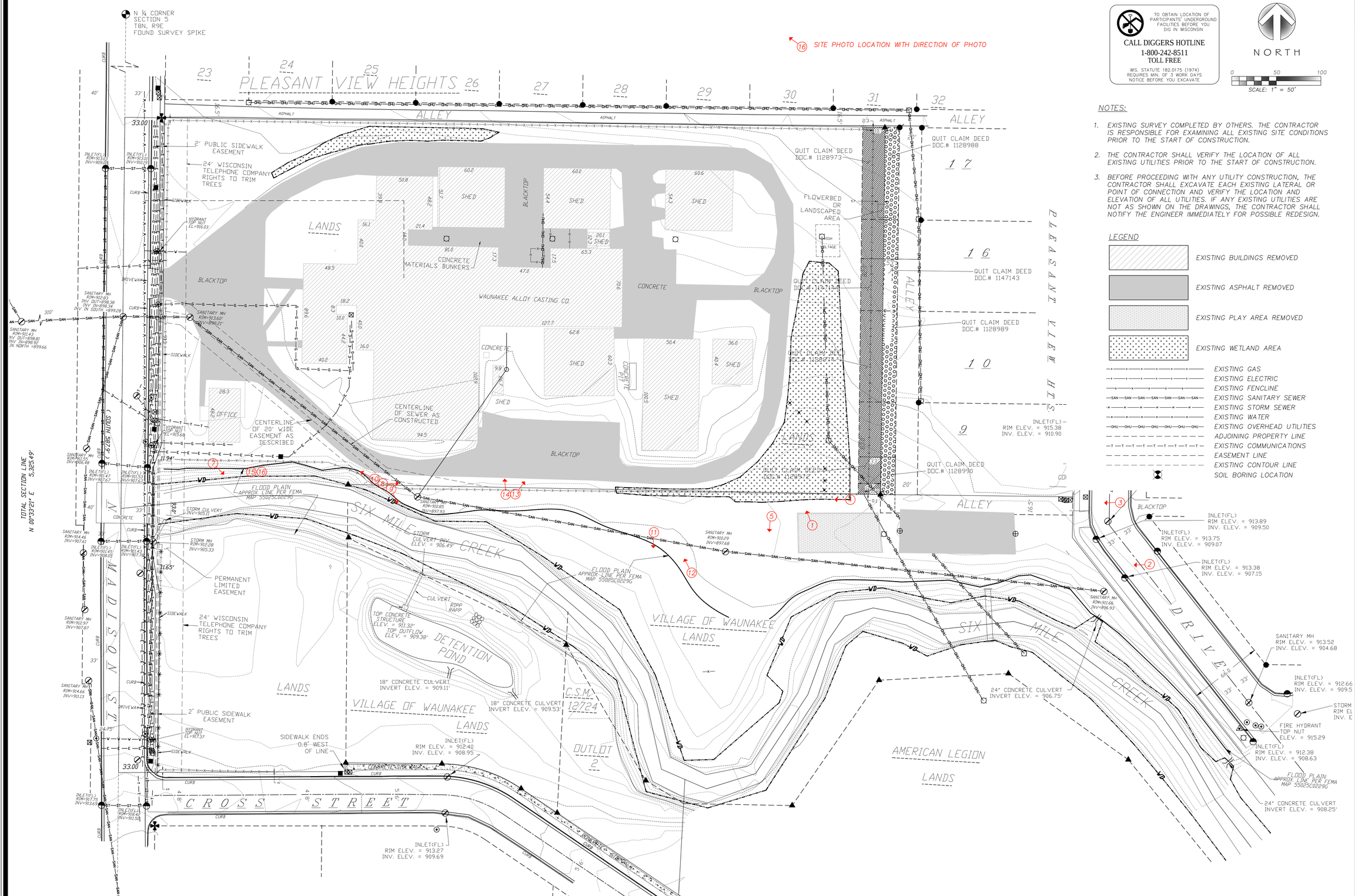
Sincerely,

Scott Anderson, P.E.
Civil Engineer
SNYDER & ASSOCIATES, INC.

Enclosures

Existing Aerial of the Waunakee Alloy Site





TO OBTAIN LOCATION OF PARTICIPANTS' UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE

WIS. STATUTE 182.0175 (1974) REQUIRES MIN. OF 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

NORTH

0 50 100
SCALE: 1" = 50'

NOTES:

1. EXISTING SURVEY COMPLETED BY OTHERS. THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL EXISTING SITE CONDITIONS PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO THE START OF CONSTRUCTION.
3. BEFORE PROCEEDING WITH ANY UTILITY CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE EACH EXISTING LATERAL OR POINT OF CONNECTION AND VERIFY THE LOCATION AND ELEVATION OF ALL UTILITIES. IF ANY EXISTING UTILITIES ARE NOT AS SHOWN ON THE DRAWINGS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY FOR POSSIBLE REDESIGN.

LEGEND

- EXISTING BUILDINGS REMOVED
- EXISTING ASPHALT REMOVED
- EXISTING PLAY AREA REMOVED
- EXISTING WETLAND AREA
- EXISTING GAS
- EXISTING ELECTRIC
- EXISTING FENCLINE
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER
- EXISTING WATER
- EXISTING OVERHEAD UTILITIES
- ADJOINING PROPERTY LINE
- EXISTING COMMUNICATIONS
- EASEMENT LINE
- EXISTING CONTOUR LINE
- SOIL BORING LOCATION

MARK	REVISION	DATE	BY
Engineer: ENG	Checked By: CHKD	Scale: 1" = 40'	
Technician: TECH	Date: DATE	Field Bk:	Pg:
	Project_No:		C1.0

CITY OF WAUNAKEE, DANE COUNTY, STATE OF WI

WAUNAKEE LIBRARY

EXISTING SITE CONDITIONS

SNYDER & ASSOCIATES, INC.
5010 VOGES ROAD
MADISON, WISCONSIN 53718
608-838-0444 | www.snyder-associates.com

116.0144.30

C1.0

P:\PROJECTS\2016\116.0144.30 ORH Waunakee Library\Design\SHEET SET.dwg

Waunakee Alloy
Existing Site Photos

Please see Sheet C1.0 – Existing Site Plan for the location of the following photos below.

#1 - At Playground area looking inside fence at existing wetland in the southeast corner.

#2 – In Pleasant Drive looking east at McWatty Park.

Waunakee Alloy
Existing Site Photos

#3 – Another view from Pleasant Drive looking at McWatty Park.


#4 – Looking east along the existing fenceline. To the left is the Six Mile Creek Corridor.

Waunakee Alloy
Existing Site Photos

#5 – Looking to the south at Six Mile Creek at open space.

#7 – Looking at the existing Six Mile Creek corridor.

Waunakee Alloy
Existing Site Photos

#8 – At the fenceline looking to the west towards McWatty Park.

#9 – Same spot at previous photo, looking towards the creek.

Waunakee Alloy
Existing Site Photos

#10 – Looking west towards Madison Street with creek on left and the site on the right.

#11 – Looking southeast along Six Mile Creek, the wetland delineation flags can be seen.

Waunakee Alloy
Existing Site Photos

#12 – Looking northwest along Six Mile Creek.

#13 – Looking northerly at the site through the fence.

Waunakee Alloy
Existing Site Photos

#14 – Looking over the fence into the existing site.

#15 – An example of some of the junk within the Six Mile Creek corridor.

Waunakee Alloy
Existing Site Photos

#16 – Another picture showing some junk within Six Mile Creek corridor.

Site Plan : 1″ = 40′

WAUNAKEE PUBLIC LIBRARY

2017 June 26

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WAUNAKEE LIBRARY

ENVIRONMENTAL EXHIBIT

VILLAGE OF WAUNAKEE, DANE COUNTY, STATE OF WI

SNYDER & ASSOCIATES, INC.

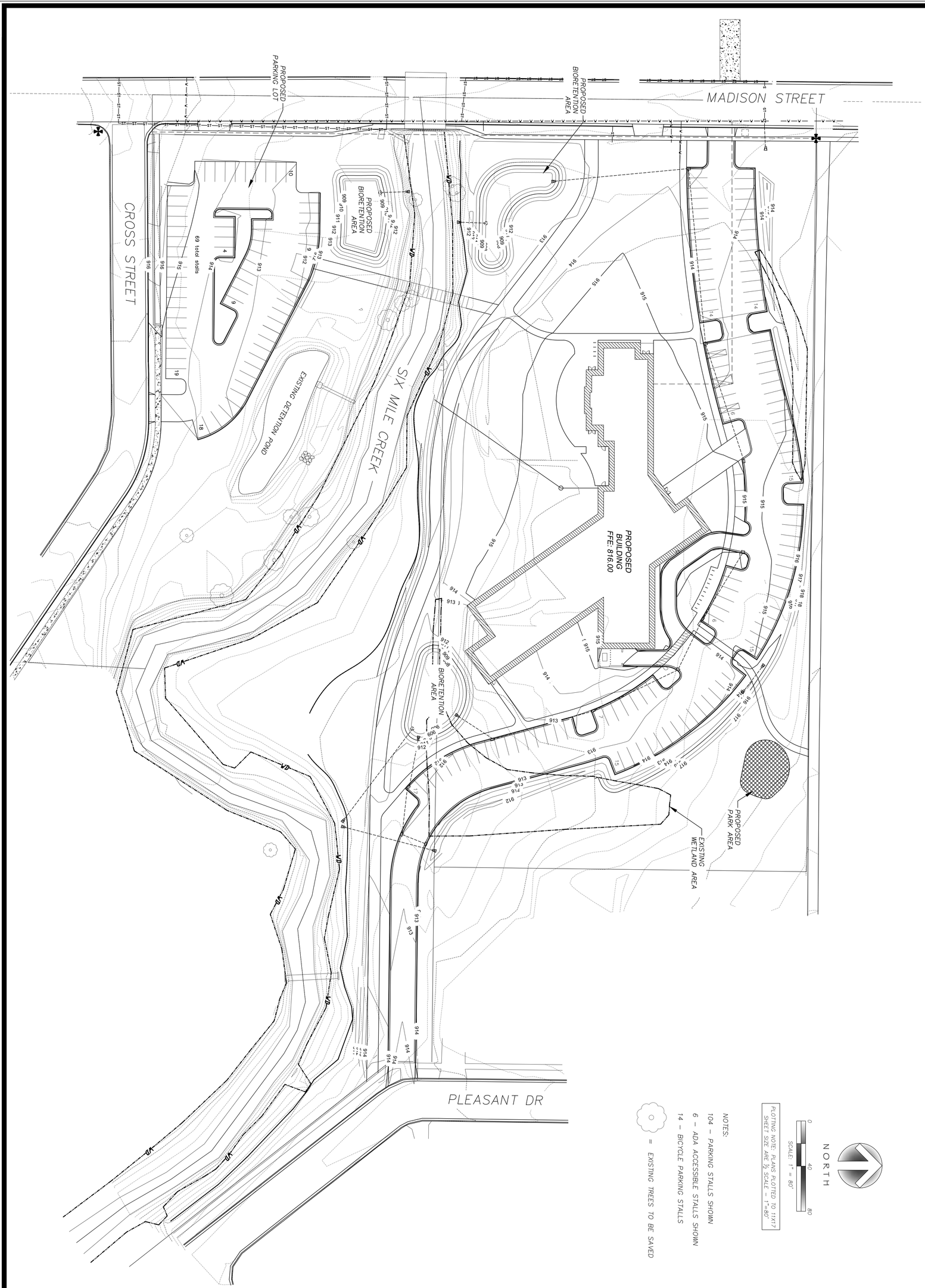
5010 VOGES ROAD
MADISON, WISCONSIN 53718
608-838-0444 | www.snyder-associates.com

MARK	REVISION	DATE	BY

Engineer: ENG	Checked By: CHKD	Scale: 1" = 40'	
Technician: TECH	Date: 7-13-2017	Field Bk:	Pg:
Project_No:		C0.0	

116.0144.30
C2.0

P:\PROJECTS\2016\116.0144.30 OPN Waunakee Library\Design\SHEET-SET.dwg



116.0144.30

C1.0

WAUNAKEE LIBRARY

PROPOSED GRADING PLAN

VILLAGE OF WAUNAKEE, DANE COUNTY, STATE OF WI

SNYDER & ASSOCIATES, INC.

5010 VOGES ROAD
MADISON, WISCONSIN 53718
608-838-0444 | www.snyder-associates.com

MARK	REVISION	DATE	BY

Engineer: ENG	Checked By: CHKD	Scale: 1" = 40'	
Technician: TECH	Date: 7-6-2017	Field Bk:	Pg:
Project_No:		C1.0	

STORMWATER MANAGEMENT REPORT

for

Waunakee Library
Alloy Site Redevelopment

Village of Waunakee
Dane County, Wisconsin

July 17, 2017
CONCEPT STORMWATER MANAGEMENT PLAN

Prepared by:
Snyder & Associates
5010 Voges Road
Madison, WI 53718
Phone: (608) 838-0444

Prepared for:
OPN Architects
301 N. Broom Street #100
Madison, WI 53703

TABLE OF CONTENTS

Table of Contents	Page No.
Introduction	1
Design Criteria	1
Infiltration	1
Water Quality	1
Peak Flows	2
Oil & Grease Control	2
Erosion Control	2
Project Schedule	2
Monitoring and Maintenance	2
Storm Sewer Sizing	2

APPENDIX A
Project Location
Websoil Survey
WisDNR Wetland Inventory Map
WisDNR Topo Map

APPENDIX B
WinSlamm Areas
WinSlamm Data & Outputs

1.0 INTRODUCTION

The proposed project is a new library building at the existing Waunakee Alloy Casting Corporation site located at 201 N. Madison Street in the Village of Waunakee, Dane County, WI. The project site is approximately 6 acres in size and is bounded by Six Mile Creek to the south, a residential alley and residential homes to the north, Madison Street to the west and Pleasant Drive and residential homes to the east. The basis of this report is based on the requirements of the Village of Waunakee and WisDNR Stormwater and Erosion Control Ordinance.

2.0 DESIGN CRITERIA

The proposed site is currently split by Six Mile Creek. The north side of the creek will abide by the redevelopment stormwater standards while the south side will abide by new development standards. Those standards are discussed below.

Based on the Village and WisDNR ordinances and regulations for a redevelopment project the following items were taken into account for the design of the stormwater management facilities for this project:

1. Safe passage of the 100-year storm event.
2. 40% of total suspended solids removal for water quality.
3. Provide oil and grease control.
4. Size all storm sewer for the conveyance of the 10-year storm event.

Based on the Village and WisDNR ordinances and regulations for a new development the following items were taken into account for the design of the stormwater management facilities for this project:

1. Infiltration of 90% pre to post-development infiltration for the one year average annual rainfall.
2. Maintain pre to post-development peak flows for the 1, 2, 5, and 10-year storm events.
3. Safe passage of the 100-year storm event.
4. 80% of total suspended solids removal for water quality.
5. Provide oil and grease control.
6. Size all storm sewer for the conveyance of the 10-year storm event.

3.0 INFILTRATION

The north side of the project site is except from infiltration as it is a redevelopment site. The south side parking lot will be designed with a bioretention area to satisfy the infiltration requirements. We are still awaiting soil borings for this area of the project to finalize this design. Ample area has been put aside to design the facilities to meet the regulations.

4.0 WATER QUALITY (TSS REMOVAL)

Three bioretention areas will be utilized throughout the site to meet the total suspended solids removal for the site. The site and bioretention areas were modeled in WinSLAMM with the following results:

East Bioretention Area = 54% TSS Removal
West Bioretention Area = 75% TSS Removal
South Bioretention Area = 96% TSS Removal
Total Site TSS Removal = 65% TSS Removal

These results will be finalized once soil boring data is obtained for the site. A final stormwater management plan presenting this information will be provided to all approving authorities. Please see the Appendix for more information on the conservative assumptions made for the project.

5.0 PEAK FLOW

The north side of the development does not require peak flow control as it is a redevelopment site. the south side parking lot has ample space availilbe to meet the required 1, 2, 10, and 100 year storms as required by the Village of Waunakee and the WisDNR. A final stormwater management plan will include the required calculations for peak flow control.

6.0 OIL & GREASE CONTROL

Oil and grease control will be required for the project site. All parking lot runoff is routed through the bioretention area which provides the necessary oil and grease control.

7.0 EROSION CONTROL

A final erosion control plan will be provided at a later date. Erosion control items that will be used in the site will be:

STONE TRACKING PAD

SILT FENCE

INLET PROTECTION

SEDIMENT BASIN (BIORETNETION AREA POST CONSTRUCTION)

Inspections of the installed erosion control measures and best management practices must be performed weekly and within 24 hours after a precipitation event 0.5 inches or greater which results in runoff. Weekly written reports of all inspections conducted by or for the permittee must be maintained throughout the period of permit coverage by the City of Middleton and the State of Wisconsin.

8.0 PROJECT SCHEDULE

The project schedule is approximate and may completely depend on project approvals, contractor efficiency, and weather.

Demolition of Existing Site	Fall 2017
Start Construction	Spring 2018
Library Open	Spring 2019

9.0 MONITORING & MAINTENANCE

The Property Owner will maintain the facilities after construction is completed. A copy of the maintenance agreement will be included in the final stormwater management plan.

10.0 STORM SEWER SIZING

The proposed storm sewer will be modeled to convey the 10 year storm event.

APPENDIX A

Surface Water Data Viewer Map

Legend

- County Boundary
- Cities, Towns & Villages
  - City
  - Village
  - Civil Town
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

Notes

0.1 0 0.03 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 1,980

Map Scale: 1:1,660 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

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

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

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

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

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

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

Soil Survey Area: Dane County, Wisconsin
Survey Area Data: Version 15, Sep 27, 2016

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

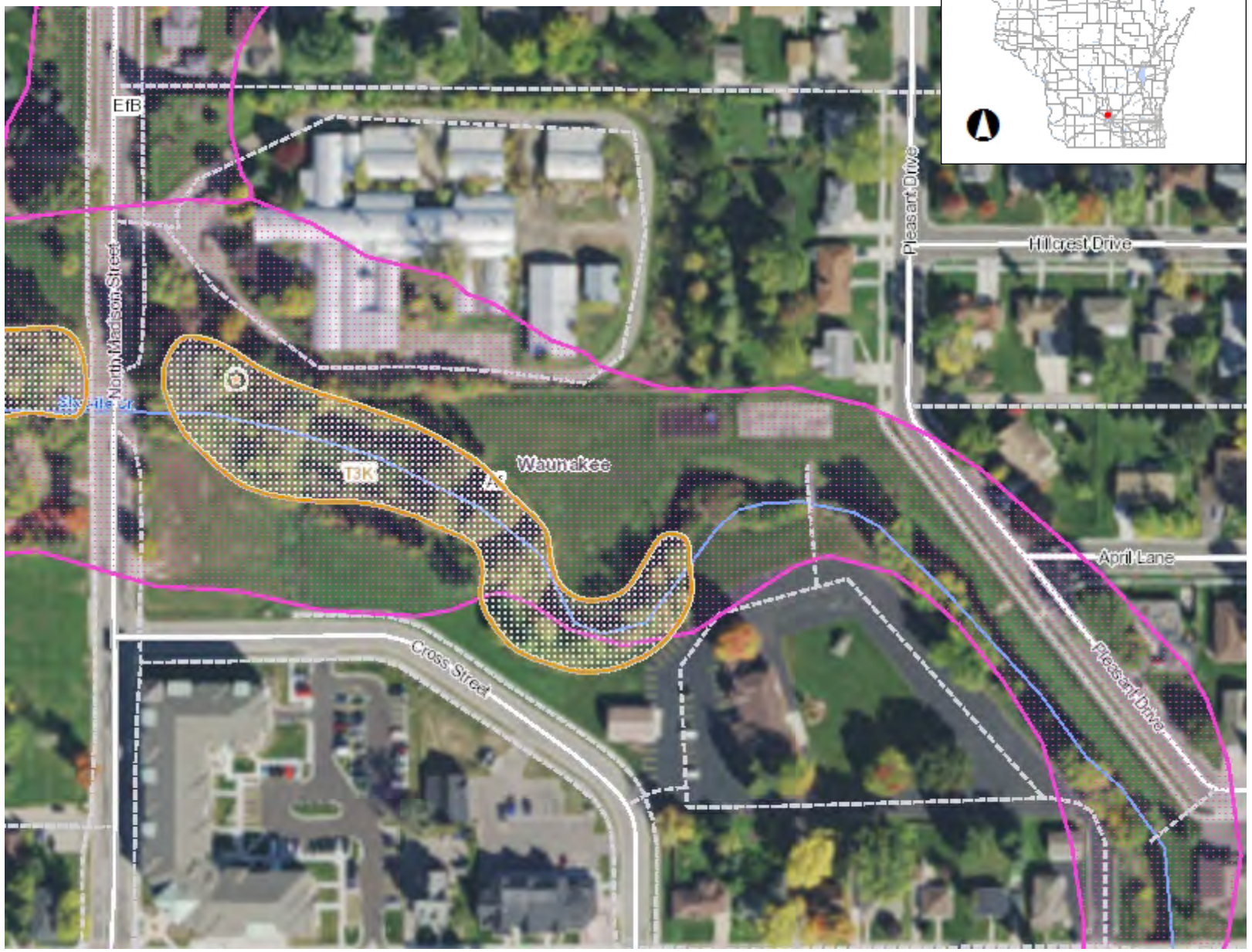
Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Dane County, Wisconsin (WI025)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
Af	Alluvial land, wet	5.5	62.6%
EfB	Elburn silt loam, 0 to 3 percent slopes	0.3	3.4%
GwC	Griswold loam, 6 to 12 percent slopes	0.3	3.8%
PnB	Plano silt loam, till substratum, 2 to 6 percent slopes	2.7	30.2%
Totals for Area of Interest		**8.9**	**100.0%**

Surface Water Data Viewer Map



Legend

- Wetland Class Points
  - Dammed pond
  - Excavated pond
  - Filled excavated pond
  - Filled/drained wetland
  - Wetland too small to delineate
- Filled Points
- Wetland Class Areas
  - Wetland
  - Upland
- Filled Areas
- NRCS Wetspots
- Wetland Indicators
- County Boundary
- Cities, Towns & Villages
  - City
  - Village
  - Civil Town
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

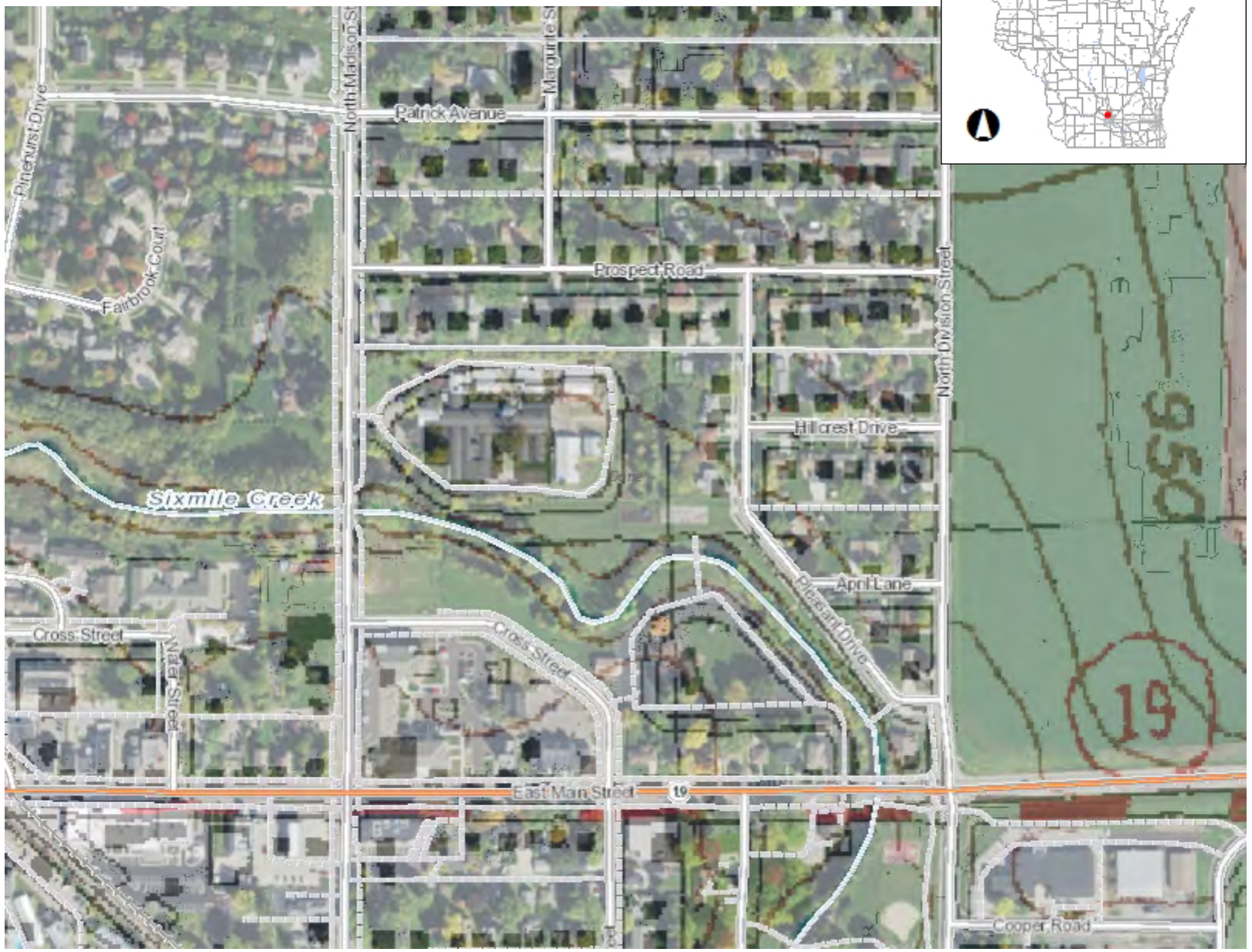
Notes

0.1 0 0.03 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 1,980

Surface Water Data Viewer Map



Legend

- County Boundary
- Cities, Towns & Villages
  - City
  - Village
  - Civil Town
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water

Notes

0.1 0 0.06 0.1 Miles

NAD_1983_HARN_Wisconsin_TM

1: 3,960

APPENDIX B

Waunakee Library
SLAMM Data and Outputs

Data file name: P:\PROJECTS\2016\116.0144.30 OPN Waunakee Library\Stormwater\Waunakee Library Proposed Site.mdb
WinSLAMM Version 10.2.1
Rain file name: C:\WinSLAMM Files\Rain Files\WisReg - Madison WI 1981.RAN
Particulate Solids Concentration file name: C:\WinSLAMM Files\v10.1 WI_AVG01.pscx
Runoff Coefficient file name: C:\WinSLAMM Files\WI_SL06 Dec06.rsvx
Residential Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Institutional Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Commercial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Industrial Street Delivery file name: C:\WinSLAMM Files\WI_Com Inst Indust Dec06.std
Other Urban Street Delivery file name: C:\WinSLAMM Files\WI_Res and Other Urban Dec06.std
Freeway Street Delivery file name: C:\WinSLAMM Files\Freeway Dec06.std
Apply Street Delivery Files to Adjust the After Event Load Street Dirt Mass Balance: False
Pollutant Relative Concentration file name: C:\WinSLAMM Files\WI_GEO03.ppdx
Source Area PSD and Peak to Average Flow Ratio File: C:\WinSLAMM Files\NURP Source Area PSD Files.csv
Cost Data file name:
Seed for random number generator: -42
Study period starting date: 01/01/81 Study period ending date: 12/31/81
Start of Winter Season: 12/02 End of Winter Season: 03/12
Date: 07-14-2017 Time: 12:59:38
Site information:
Waunakee Library

Pre-Development Area Description	Pre-Development Area (ac)	Pre-Development CN
Pre Development	1.930	61
Total Area (ac)/Composite CN	1.930	61

LU# 1 - Commercial: 101 Total area (ac): 1.103
13 - Paved Parking 1: 0.494 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.058 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.551 ac. Moderately Compacted Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 2 - Commercial: 200 Total area (ac): 0.063
1 - Roofs 1: 0.063 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 3 - Commercial: 102 Total area (ac): 1.229
13 - Paved Parking 1: 0.274 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

31 - Sidewalks 1: 0.164 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.720 ac. Moderately Compacted Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.071 ac. Source Area PSD File:

LU# 4 - Commercial: 100 Total area (ac): 0.411
1 - Roofs 1: 0.411 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 5 - Commercial: 103 Total area (ac): 0.548
1 - Roofs 1: 0.069 ac. Pitched Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
13 - Paved Parking 1: 0.231 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.076 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.172 ac. Moderately Compacted Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 6 - Commercial: 201 Total area (ac): 0.159
1 - Roofs 1: 0.159 ac. Flat Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 7 - Commercial: 202 Total area (ac): 0.802
13 - Paved Parking 1: 0.415 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.101 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.286 ac. Moderately Compacted Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

LU# 8 - Commercial: 203 Total area (ac): 0.404
31 - Sidewalks 1: 0.059 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.284 ac. Moderately Compacted Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.061 ac. Source Area PSD File:

LU# 9 - Commercial: 300 Total area (ac): 0.793

13 - Paved Parking 1: 0.533 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
31 - Sidewalks 1: 0.015 ac. Connected Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
45 - Large Landscaped Areas 1: 0.206 ac. Moderately Compacted Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz
70 - Water Body Areas: 0.039 ac. Source Area PSD File:

LU# 10 - Commercial: Green Roof Total area (ac): 0.095
45 - Large Landscaped Areas 1: 0.095 ac. Normal Silty Source Area PSD File: C:\WinSLAMM Files\NURP.cpz

Control Practice 1: Biofilter CP# 1 (DS) - East Bioretention Area

1. Top area (square feet) = 4700
2. Bottom aea (square feet) = 2050
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7.5

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 5

Waunakee Library
SLAMM Data and Outputs

Control Practice 2: Biofilter CP# 2 (DS) - West Bioretention Area

1. Top area (square feet) = 4900
2. Bottom aea (square feet) = 1575
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8
16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7.5

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 5

Control Practice 3: Biofilter CP# 3 (DS) - South Bioretention Area

1. Top area (square feet) = 4000
2. Bottom aea (square feet) = 1700
3. Depth (ft): 8
4. Biofilter width (ft) - for Cost Purposes Only: 10
5. Infiltration rate (in/hr) = 0.5
6. Random infiltration rate generation? No
7. Infiltration rate fraction (side): 0.01
8. Infiltration rate fraction (bottom): 1
9. Depth of biofilter that is rock filled (ft) 2
10. Porosity of rock filled volume = 0.33
11. Engineered soil infiltration rate: 3.6
12. Engineered soil depth (ft) = 2
13. Engineered soil porosity = 0.27
14. Percent solids reduction due to flow through engineered soil = 0
15. Biofilter peak to average flow ratio = 3.8

16. Number of biofiltration control devices = 1
17. Particle size distribution file: Not needed - calculated by program
18. Initial water surface elevation (ft): 0

Soil Data Soil Type Fraction in Eng. Soil

Biofilter Outlet/Discharge Characteristics:

Outlet type: Broad Crested Weir

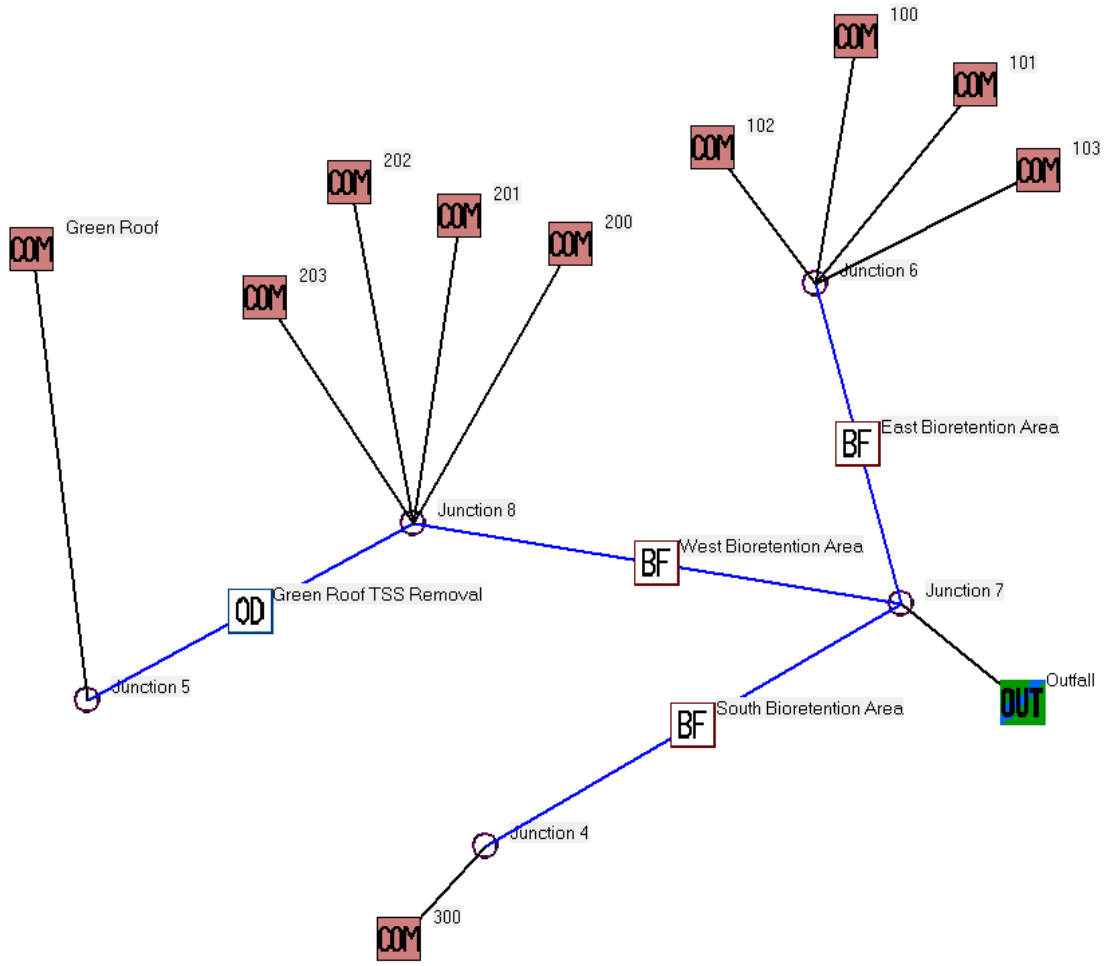
1. Weir crest length (ft): 20
2. Weir crest width (ft): 10
3. Height of datum to bottom of weir opening: 7.5

Outlet type: Vertical Stand Pipe

1. Stand pipe diameter (ft): 3
2. Stand pipe height above datum (ft): 5

Control Practice 4: Other Device CP# 1 (DS) - Green Roof TSS Removal

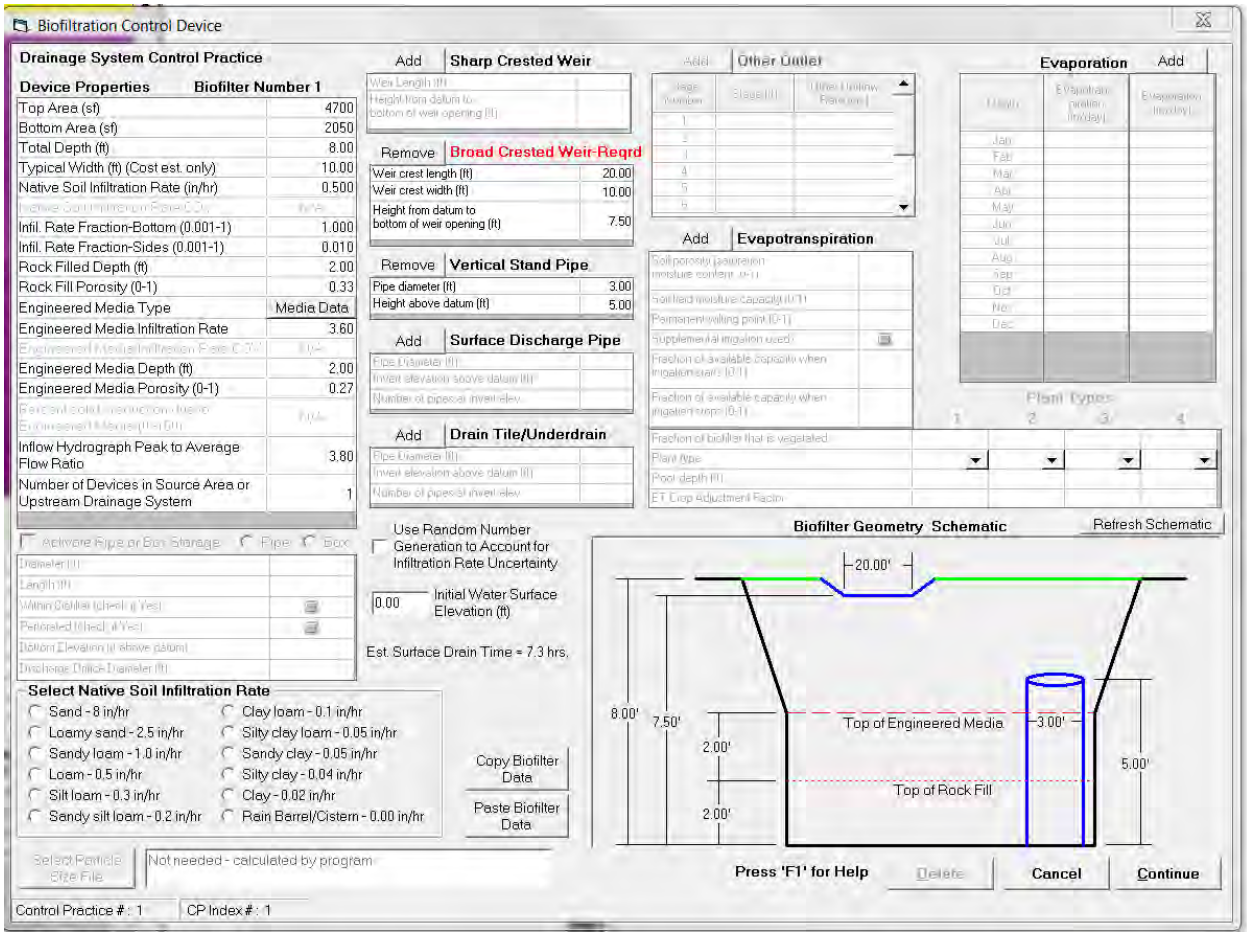
Fraction of drainage area served by device (ac) = 1.00
Concentration reduction fraction = 1.00
Runoff volume reduction fraction = 0



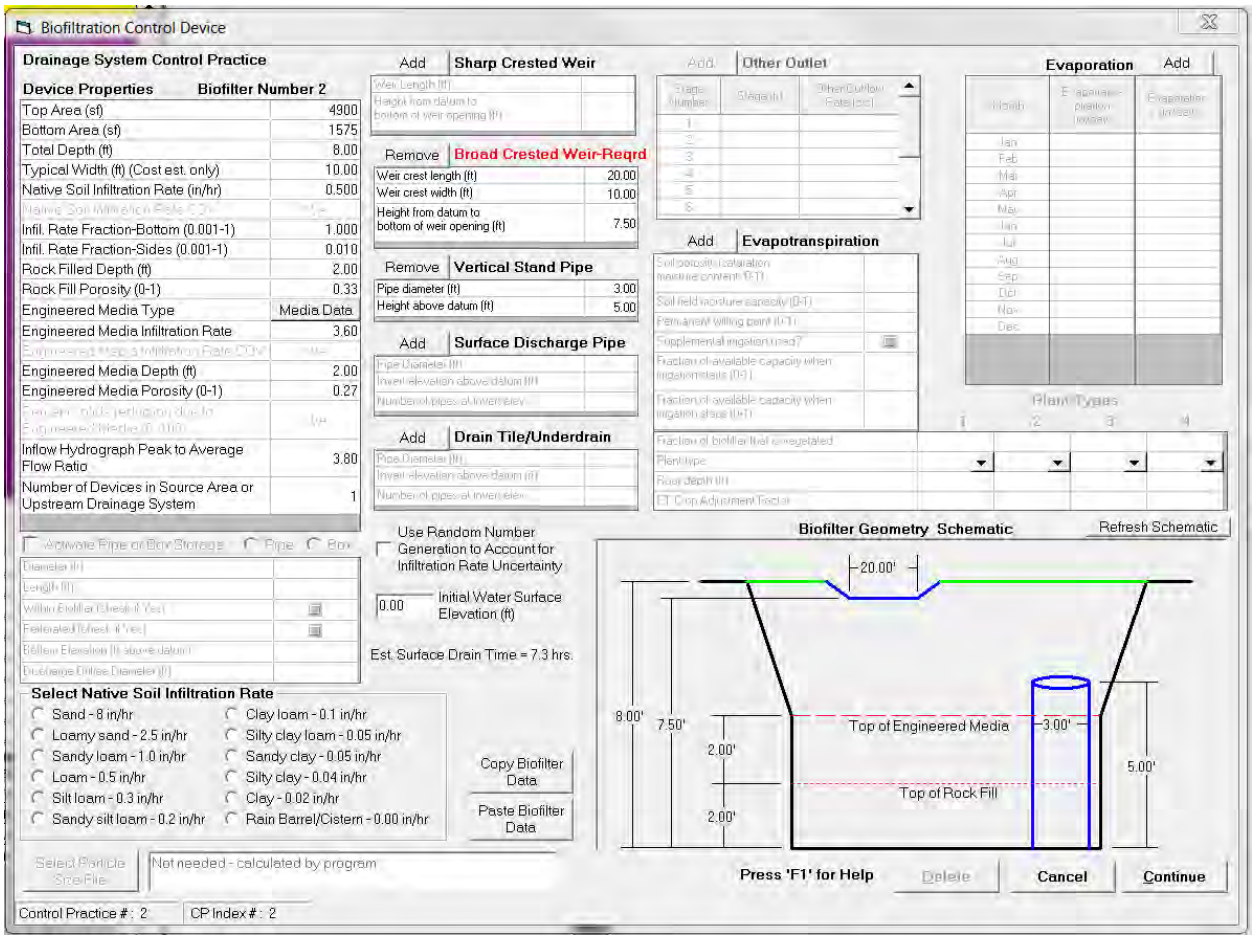
Waunakee Library
SLAMM Data and Outputs

Land Use #	Land Use Type	Land Use Label	Land Use Area (acres)
1	Commercial	101	1.103
2	Commercial	200	0.063
3	Commercial	102	1.229
4	Commercial	100	0.411
5	Commercial	103	0.548
6	Commercial	201	0.159
7	Commercial	202	0.802
8	Commercial	203	0.404
9	Commercial	300	0.793
10	Commercial	Green Roof	0.005

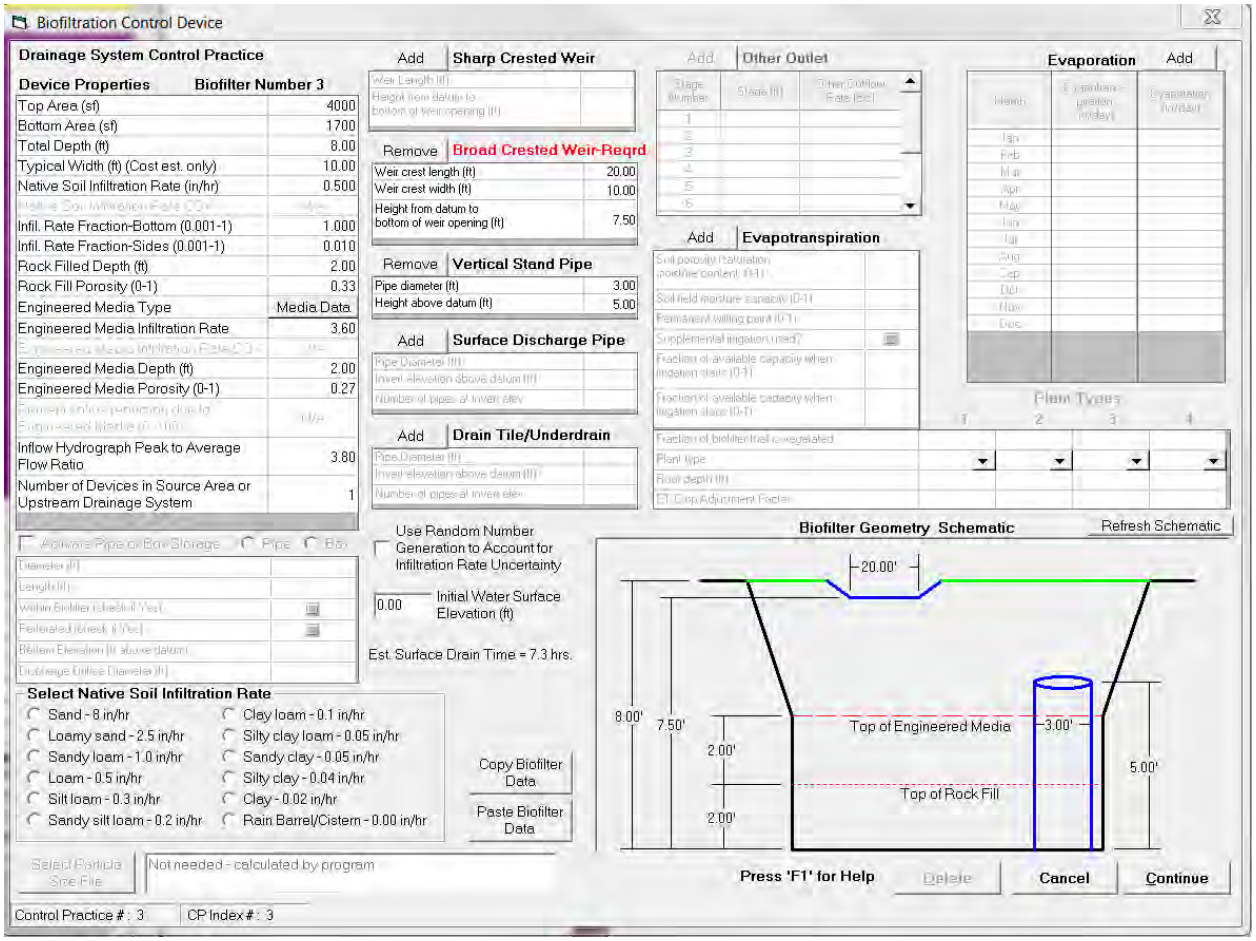
CP #	Control Practice Type	Control Practice Name or Location
1	**Biofilter**	**East Bioretention Area**
2	Biofilter	West Bioretention Area
3	Biofilter	South Bioretention Area
4	Other Device	Green Roof TSS Removal



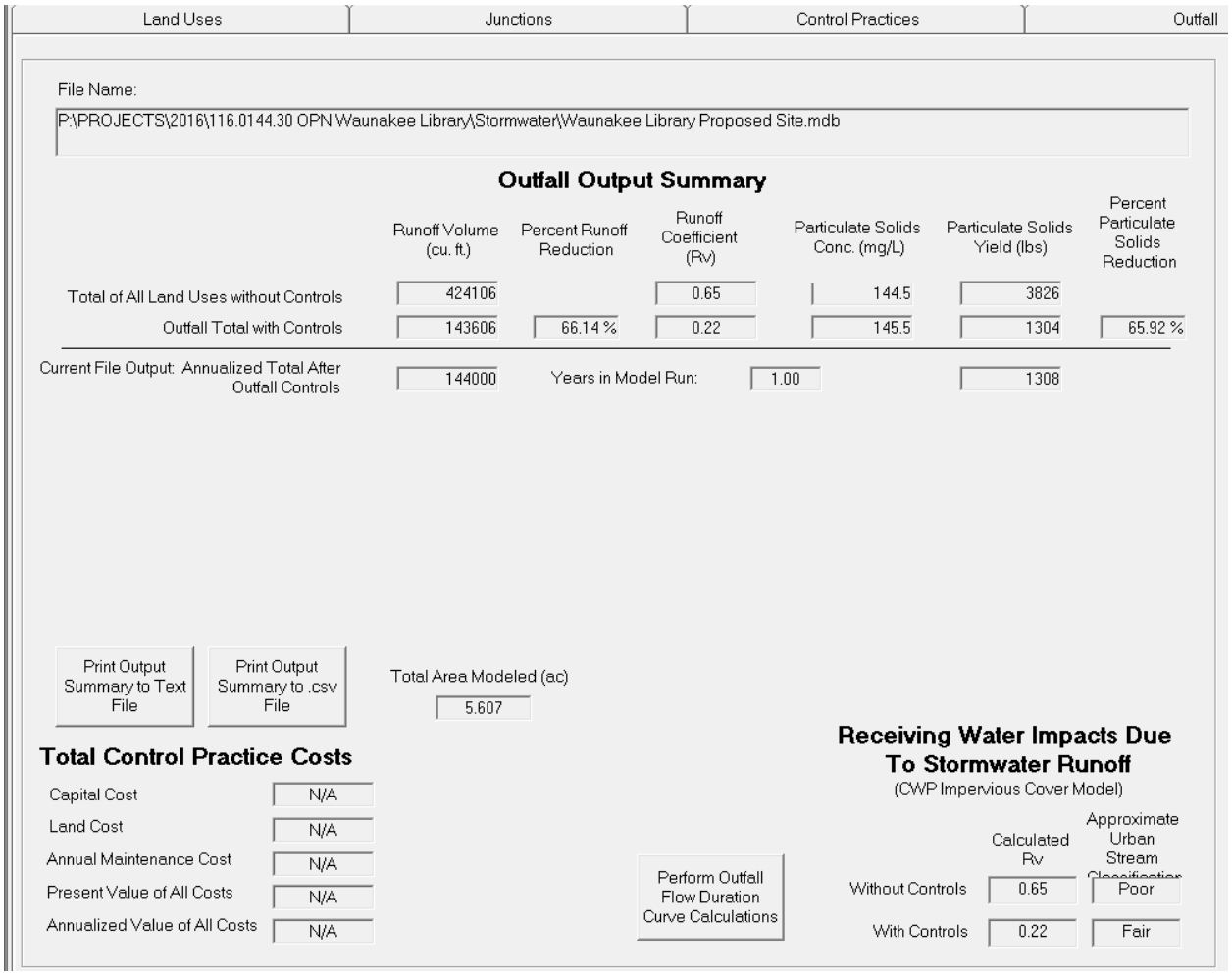
Waunakee Library
SLAMM Data and Outputs

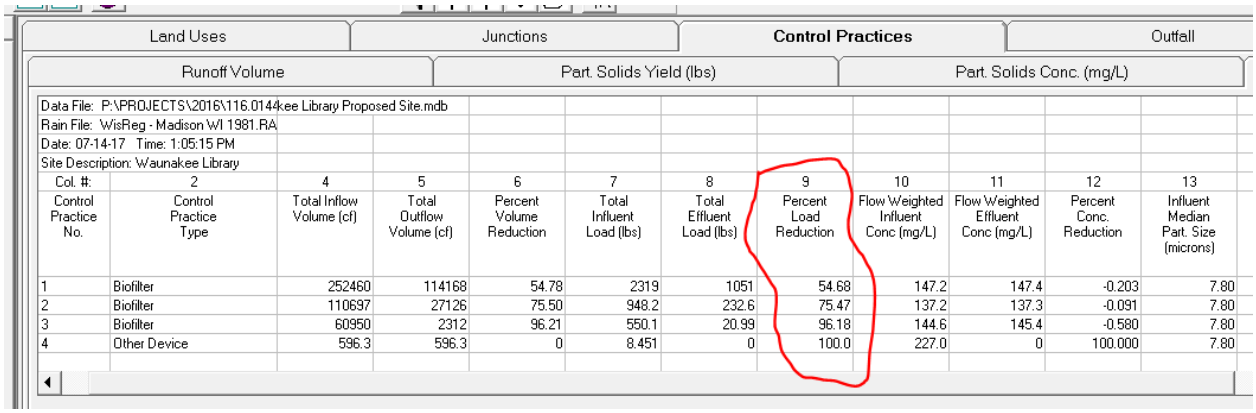


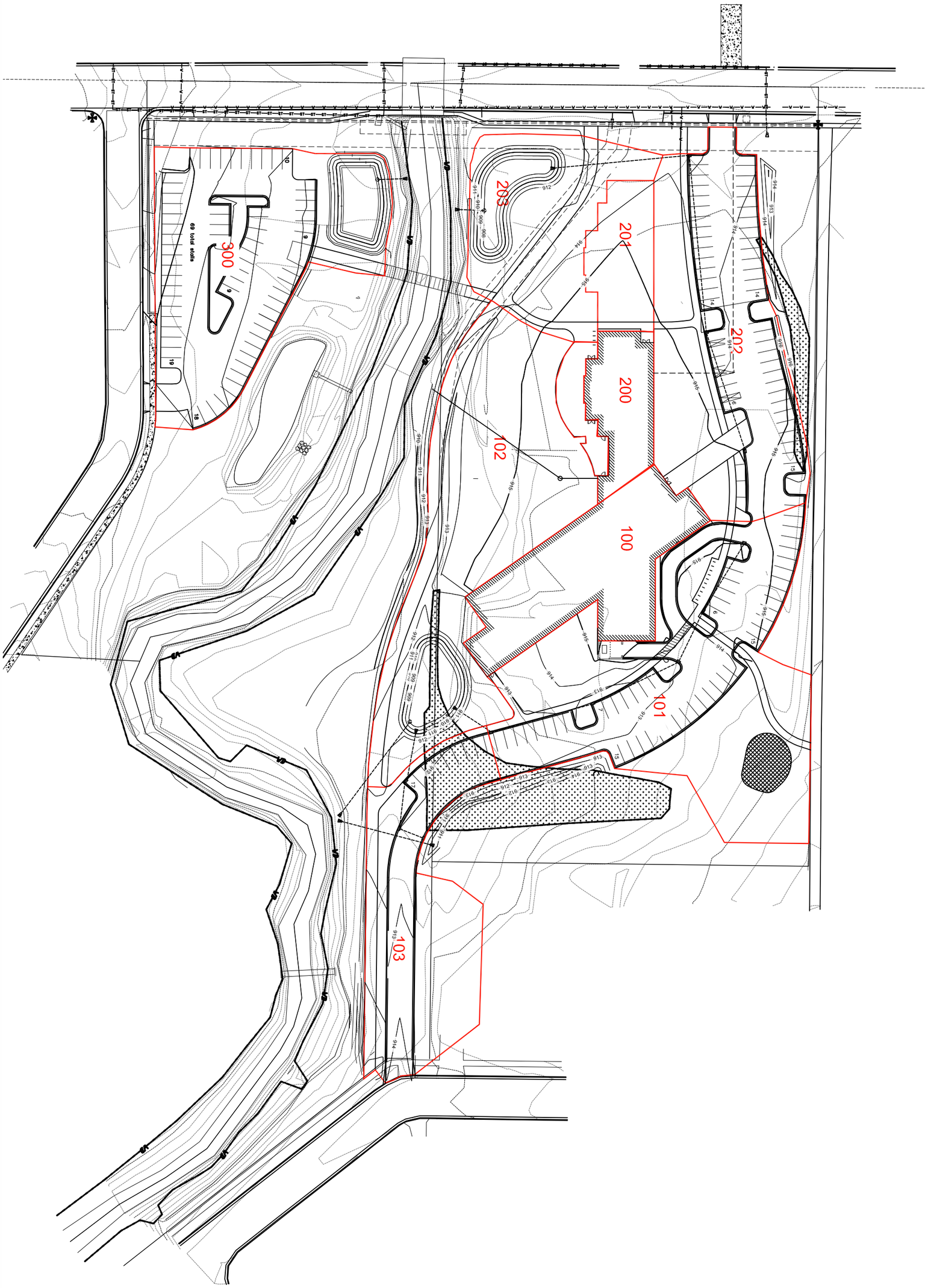
Waunakee Library
SLAMM Data and Outputs



Waunakee Library
SLAMM Data and Outputs







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WAUNAKEE LIBRARY

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MARK	REVISION	DATE	BY

Engineer: ENG	Checked By: CHKD	Scale: 1" = 40'
Technician: TECH	Date: DATE	Field Bk: Pg:
Project_No:		C1.0

Wetland Delineation Report
~
Waunakee Public Library

Village of Waunakee, Dane County Wisconsin

June 30th, 2017

Prepared for:

Jean Elvekrog
Waunakee Library Board
710 South Street
Waunakee, WI 53597

Prepared by:

Mr. Scott O. Taylor
Taylor Conservation, LLC
3856 Schneider Dr.
Stoughton, WI. 53589
(608) 444-7483

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Wetland Delineator Qualifications

Scott Taylor holds a Master of Science degree in Forest Ecology and Management from the University of Wisconsin-Madison (1999). Taylor has attended the "Critical Methods in Wetland Delineation" training course annually since 2006. Taylor is an **Assured Wetland Delineator** under Wisconsin Department of Natural Resources guidelines. Taylor also completed the following courses that prepared him for performing wetland determinations and delineations in Wisconsin using the Army Corps of Engineers 1987 Manual Method:

- Wetland Plant Identification (July 2003, Delafield, WI. – Biotic Consultants, Inc.)
- Basic Wetland Delineation Training (August 2006, Cable, WI. – University of Wisconsin, La Crosse Continuing Education & Extension)
- Advanced Wetland Delineation Training (July 2012, LaCrosse, WI – University of Wisconsin, La Crosse Continuing Education & Extension).
- Hydric Soils Identification (June 2014, UW-Waukesha Field Station - University of Wisconsin, La Crosse Continuing Education & Extension).

Introduction

On April 19th and on June 9th of 2017, Scott Taylor of Taylor Conservation, LLC performed wetland determinations and delineations within a 10-acre area of land encompassing an old industrial site and a stretch of the Yahara River in the Village of Waunakee, Dane County, Wisconsin (Figures 1 & 2). The wetland investigation area consisted of old buildings surrounded by unmowed, grassy and brushy areas in the old industrial site; of wooded and grassy stream banks along the Yahara River; and of mowed turf areas above the banks of the river. It also contained a storm water basin just south of the river.

Four wetlands were identified: the low-lying margins of the stream banks; the storm water basin; and 2 depressions in the industrial site (Figure 2). In the investigator's opinion, the storm water basin, which was clearly constructed, was an artificial wetland. Two sample plots immediately outside of the basin (plots 1B & 1C, Figure 2) did not show wetland indicators. The Army Corps of Engineers and the Wisconsin Department of Natural Resources will decide whether to take jurisdiction over the storm water basin.

A total of approximately 1.75 acres (1.3-streamside wetlands; 0.2-storm water basin wetland; 0.25 acre in the industrial site depressions) of wetlands were delineated. The site is in Section 5 (SWSE) T8N, R9E.

The Waunakee Public Library is planning a new facility centered on the industrial area. It ordered a wetland delineation for planning purposes.

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.

Methods

The following reference materials were reviewed prior to performing fieldwork:

1) Natural Resource Conservation Service, Soil Survey.
2) Wisconsin Wetland Inventory (WDNR Surface Water Data Viewer – Wetlands & Wetland Indicators Theme).
3) United States Geological Survey 7.5-minute quadrangle map, Waunakee Quadrangle.
4) Natural Resource Conservation Service, hydric soils 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: Northeast & Northcentral Region. They also followed the methods set forth in the Basic Guide to Wisconsin Wetlands and their Boundaries (WI Dept. of Administration 1995).

Method of Data Collection

Vegetation, hydrology and soil information were gathered in sample plots and recorded on U.S. Army Corps of Engineers "Wetland Determination Data Forms" for the appropriate region. 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 (at minimum) soil pit was dug at the plot center. The presence or absence of hydrology indictors 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.

Location of Transects

Transect beginning points (sample plots) were located inside of areas that appeared to have potential to be wetlands based on maps and field observations. These areas included mapped hydric soil locations, Wisconsin Wetland Inventory-mapped wetlands, and areas that showed pronounced wetland signatures on more than one year of aerial photography. They also included field observed plant communities typical of wetlands or field observed landscape features that collect water, like swales, depressions and drainage-ways.

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 16 plots were sampled, 5 inside of wetlands and 11 on the uplands (Figure 2).

Procedure for Locating Wetland Boundaries

The wetland boundaries were located by observing increases in elevation and changes in plant community composition. The presence of healthy, dominant populations of upland plants, such as black raspberry (*Rubus occidentalis*-Upl), honeysuckle (*Lonicera X bella*-FacU), Queen Anne's lace (*Daucus carota*-Upl) or tall fescue (*Schedorus arundinaceus*-FacU), as one moved upslope, away from the wetland, was often considered a reliable indicator of the wetland boundary.

Results and Discussion

Soils of the Wetland Investigation Area

The Natural Resource Conservation Service-mapped soils of the wetland investigation area are (Figure 4):

Soil	Drainage class	Percent Hydric
Alluvial land, wet (Af)	Poorly Drained	100%
Elburn silt loam (EfB)	Somewhat Poorly Drained	5%
Griswold loam (GwC)	Well Drained	0%
Plano silt loam (PnB)	Well Drained	0%

Wisconsin Wetland Inventory Map of the Investigation Area

The Wisconsin Wetlands Inventory (W.W.I.) identifies tree-dominated wetlands (T3K) following the Yahara River. Mapped wetland boundaries matched the field-identified wetland boundaries along the river closely (Figure 5).

The industrial site wetlands were not identified on the W.W.I. map. Discrepancies between the W.W.I. and field-identified wetland boundaries reflect the greater accuracy of field methods over interpretation of wetland boundaries from aerial photographs, which is the method used in the W.W.I.

Wetlands

Overview of Wetlands

The industrial site wetlands occupied closed depressions. The riverside wetlands were the bottoms of steep stream banks and flat benches just above the ordinary high water mark

of the river. The storm water basin wetland was deep, steep-sided basin with inlet and outlet pipes.

The wetlands supported open grassy vegetation in some areas, and brush and trees in others. The storm water basin contained open water and cattails.

Wetland ID Number (Figure 2)	**Wetland Type**	**Wetland Quality** **(Susceptibility to Stormwater Runoff Impacts)**	**Approximate Area Delineated**
Wetlands 1, 3 & 4	Fresh (Wet) Meadow	Medium	0.55
Wetland 1	Floodplain Forest	Medium	1
Wetland 2	Shallow Marsh (storm water basin)	Poor	0.2
			Total: 1.75

	Wetlands (Plots 1A, 2A, 3A, 4A & 5A)
Normal Circumstances Present?	Yes
Significant Disturbance?	No
Naturally Problematic?	Yes, for all wetland plots since no hydric soil indicators were observed.

Wetland Boundary Characteristics

In many areas there were no strong vegetative transitions to mark the boundaries, however the distribution of upland plant populations, like honeysuckle and black cherry, delineated the boundaries.

In other areas the boundaries were marked by vegetative transitions from ground layer vegetation heavily dominated by reed canary grass (*Phalaris arundinacea*-FacW) among other species, in the wetlands to ground layer vegetation dominated by Kentucky blue grass (*Poa pratensis*-FacU), and tall fescue, among other species, in the uplands.

Wetland Vegetation

- The wetlands were dominated by broad-leaved catteails (*Typha latifolia*-Obl), reed canary grass (*Phalaris arundinacea*-FacW) in the ground layer; by red osier dogwood (*Cornus alba*-FacW), silver maple (*Acer saccharinum*-FacW), green ash (*Fraxinus pennsylvanica*-FacW) and box elder (*Acer negundo*-FacW) in the sapling/shrub layer; and by silver maple, box elder and black willow (*Salix nigra*-Obl) in the tree layer.

- ❖ Hydrophytic plant dominance was 100% in all wetland sample plots.

- ❖ All wetland sample plots met the FAC-Neutral Test.

Wetland Hydrology

- ❖ The industrial site and storm water basin wetlands' chief water source is surface runoff from surrounding developed areas. The streamside wetlands' chief water source is overspill from the Yahara River. All of the wetlands probably saturate in the spring and throughout the year following rainy periods.

- ❖ Rainfall for the preceding 3 months, for both fieldwork dates, was higher than normal (see analysis below). In addition, 2.6 inches of rain was recorded at the nearby Dane County Regional Airport weather station in the month of April prior to fieldwork. No rain was recorded in the month of June prior to fieldwork.

- ❖ As a result of higher than usual antecedent rainfall, the investigator did expect to directly observe a shallow water table and soil saturation in the wetlands. Accordingly, shallow soil saturation was observed in 4 of 5 wetland sample plots (1A, 2A, 4A & 5A).

- ❖ All wetland sample plots showed the two secondary hydrology indicators, "Geomorphic Position" (because plots were located on depressions, low benches and stream banks by the river) and "FAC Neutral Test".

Prior Rainfall Analysis:

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

For April Fieldwork:

	30% chance will have precipitation (inches)						
	less than:	more than:	**2017 precipitation:**	Condition	Condition value (Dry=1, Normal =2, Wet=3)	Month weight value	Product of previous two columns
January	0.81	1.51	**2.76**	**Wet**	**3**	**1**	**3**
February	0.69	1.56	**1.94**	**Wet**	**3**	**2**	**6**
March	1.28	2.77	**2.83**	**Wet**	**3**	**3**	**9**
						Sum:	**18**

For June Fieldwork:

	30% chance will have precipitation (inches)						
	less than:	more than:	**2017 precipitation:**	Condition	Condition value (Dry=1, Normal =2, Wet=3)	Month weight value	Product of previous two columns
March	1.28	2.77	**2.83**	**Wet**	**3**	**1**	**3**
April	2.58	3.89	**5.30**	**Wet**	**3**	**2**	**6**
May	2.11	3.91	**2.83**	**Normal**	**2**	**3**	**6**
						Sum:	**15**

(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.)

Wetland Soils

- The soil surface layers in the wetland sample plots were comprised of 10 YR 2/1 & 2/2-colored silt loam and silty clay loam.

- B-horizons in riverside wetlands were not observed at the soil depths (24-30 inches) examined because these sites occupied alluvial landforms comprised of deep, dark-colored sediments.

- Wetland soil profiles in the industrial site were only inspected to depths of 12-14 inches due to the abundance of rocks. These soils were probably disturbed during development of the site.

- None of the wetland plots showed hydric soil indicators but professional judgment was used to assume the soils were hydric based on hydrophytic vegetation and wetland hydrology indicators.

Uplands

Overview of Uplands

The uplands (non-wetlands) were the (1) old buildings and paved areas of the industrial site; (2) the un-mowed grassy and brushy areas surrounding the buildings and paved areas; (3) the upper riverbanks; and (4) the mowed turf areas on the high-lying grounds adjoining the stream bank (Figure 2).

	Uplands (Plots 1B, 1C, 1D, 2B, 2C, 3B, 3C, 4B, 4C, 5B & 5C)
Normal Circumstances Present?	Not for Plots 1C, 1D, 2B, 3B & 3C due to regular mowing.
Significant Disturbance?	Not for Plots 1C, 1D, 2B, 3B & 3C due to regular mowing.

Naturally Problematic?	Not applicable to uplands.

Upland Vegetation

- The un-mowed industrial site uplands were dominated by garlic mustard (*Alliaria petiolata*-FacU), Kentucky bluegrass (*Poa pratensis*-FacU), tall fescue (*Schedonorus arundinaceus*-FacU) and Canada goldenrod (*Solidago Canadensis*-FacU) in the ground layer, and by box elder and cottonwood (*Populus deltoides*-Fac) in the sapling and tree layers.

- The mowed turf uplands were dominated by Kentucky blue grass and tall fescue. The upper stream bank uplands were dominated by garlic mustard and white avens (*Geum canadense*-Fac) in the ground layer; by box elder and honeysuckle (*Lonicera X bella*-FacU) in the sapling/shrub layer; and by box elder and American elm (*Ulmus americana*-FacW) in the tree layer.

- Dominance values for hydrophytes were below 50% in most upland sample plots.

- Three of 11 upland sample plots (1B, 2C & 4B) showed dominance by hydrophytic vegetation (but they did not meet the FAC-Neutral test). However, the absence of hydric soil and wetland hydrology indicators at these sites strongly suggested they were capable of supporting upland vegetation.

Upland Hydrology

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

- All parts of the uplands occupied high-lying or sloping ground where water would be unlikely to linger for long periods.

Upland Soils

- The soil surface layers in the upland sample plots were comprised of 10 YR 2/2, 3/2 & 2/1-colored silt loam.

- B-horizons were not observed at the soil depths examined (24-30 inches) in most upland sample plots, probably because these sites occupied areas where fill was placed in the distant past. This would not be unusual in an area surrounded by urban development. The unusually high number of rocks observed in upland soil profiles also suggested the soils consisted of old fill.

- Soil subsurface layers (B-horizons), when observed, consisted of 10 YR 3/3-colored sandy or silty clay loam.

- No upland sample plot showed hydric soil indicators.

Conclusion

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 April 19th and June 17th of 2017. Wetland boundaries can change over time with changes in vegetation, precipitation, or regional hydrology. The wetlands identified for this report may be subject to federal regulation under the jurisdiction of the U.S. Army Corp of Engineers, state regulation under the jurisdiction of Wisconsin Department of Natural Resources, and local jurisdiction under your local county, town, city or village. The U.S. Army Corps of Engineers and/or the Wisconsin DNR have authority to make the final decision regarding the wetland boundary. Personnel from these agencies may adjust the boundary upon field inspection.

Activities within or close to the delineated wetland boundaries generally require permits from the Army Corps of Engineers, WDNR or local authorities. If the client proceeds with any work within or close to the delineated wetland boundaries without authorization or permits from the appropriate regulatory authorities, Scott Taylor or Taylor Conservation LLC shall not be responsible or liable for any resulting damages.

Scott Taylor is an **Assured Wetland Delineator** under Wisconsin Department of Natural Resources guidelines (http://dnr.wi.gov/topic/wetlands/assurance.html). Taylor's wetland delineations are considered dependable by the WDNR for purposes of Wisconsin wetland and waterway permits, shoreland-wetland zoning or other state-mandated local wetland programs. Therefore Taylor's clients do not require concurrence letters from WDNR before project planning or permit applications that are based on Taylor's wetland delineations. However, concurrence from the Army Corps of Engineers is still necessary. The WDNR and Army Corps have final authority over wetlands in Wisconsin. They may adjust Taylor's wetland boundaries. Assurance does not change decisions about wetland fill. Assurance is not a guarantee of accuracy or relief from landowner responsibility in the event an error occurs and wetlands are filled. While it is unlikely for a professional whose work is assured, inadvertent wetland fill that may result from errors must be remedied.

References

Hurt, G.W. & Vasilas, L.M. 2016. Field Indicators of Hydric Soils in the United States: A Guide for Identifying and Delineating Hydric Soils, Version 8.1. Natural Resource Conservation Service, United States Department of Agriculture.

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

USDA, Natural Resource Conservation Service. 1997. Hydrology Tools for Wetland Determination. Part 650. Engineering Field Handbook.

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

Figures

Figure 1: Landscape Overview.

Source: Imagery - National Agricultural Imagery Program, 2013; Roads & Waters – Wisconsin Department of Natural Resources.

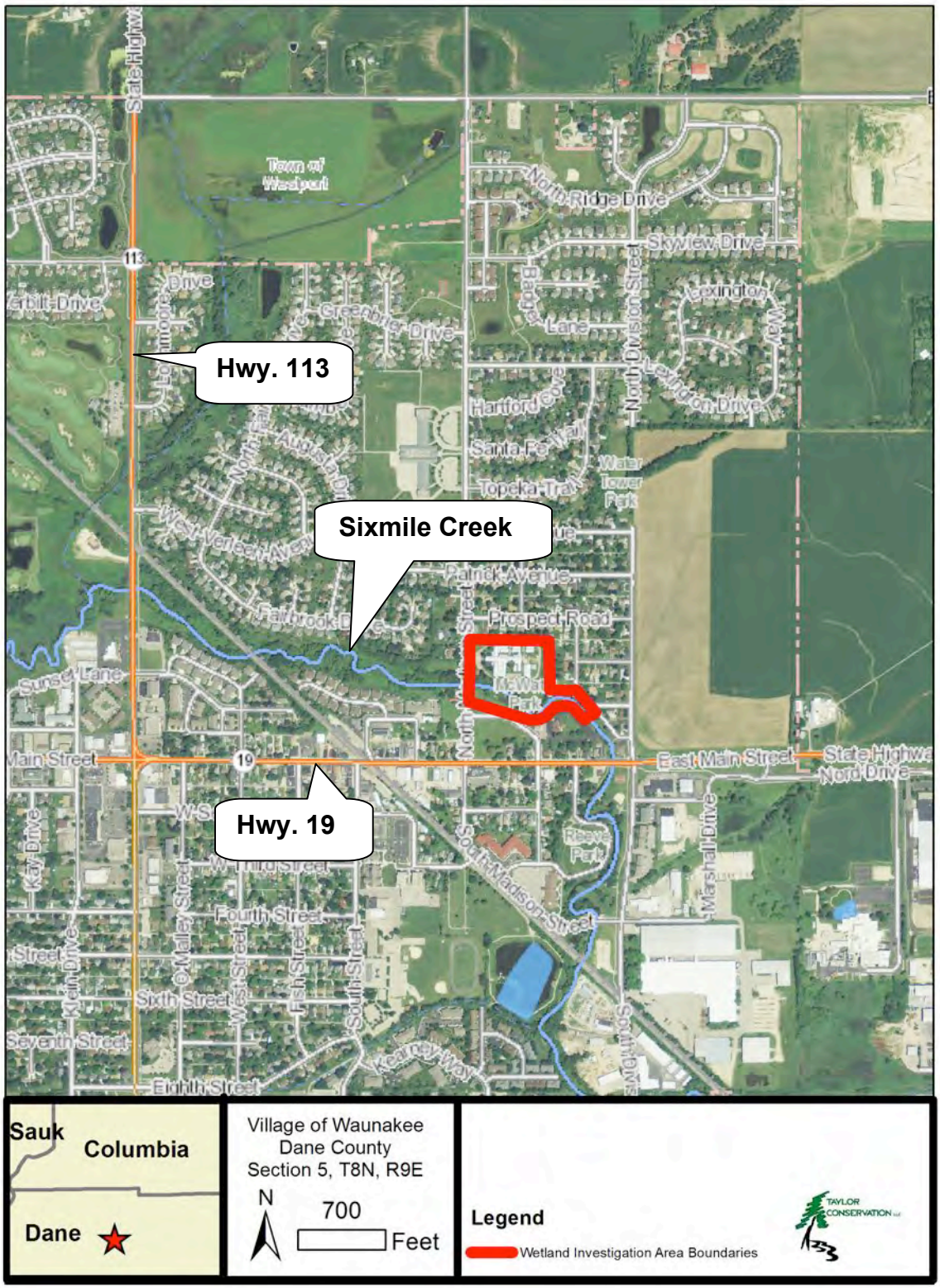


Figure 2: Investigation Area, Wetlands & Sample Plots.
Source: Wisconsin Regional Orthophotography Consortium, 2010.

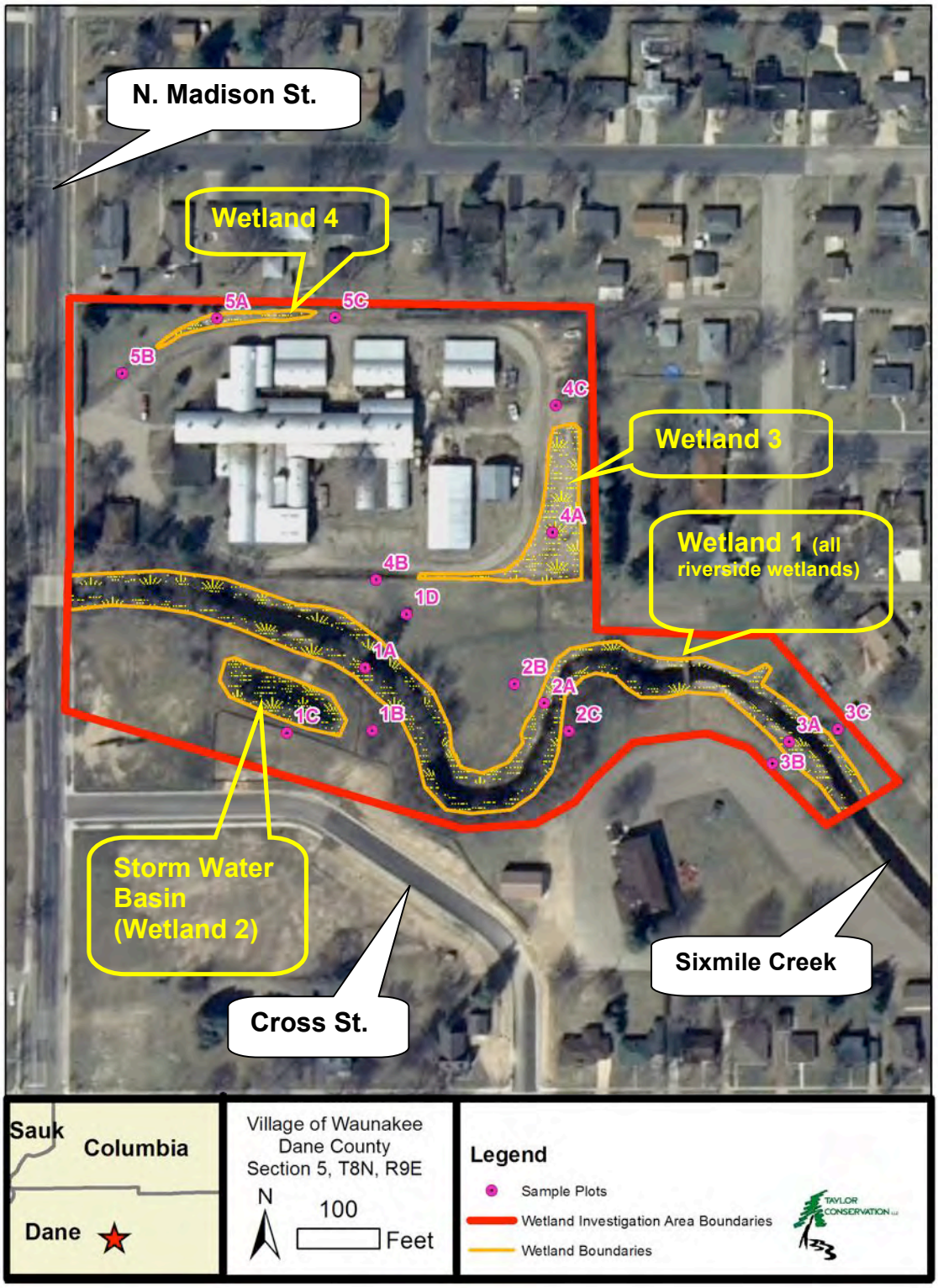


Figure 3: Topography.

Source: U.S. Geological Survey 7.5-Minute Quadrangle Map, Waunakee Quadrangle.

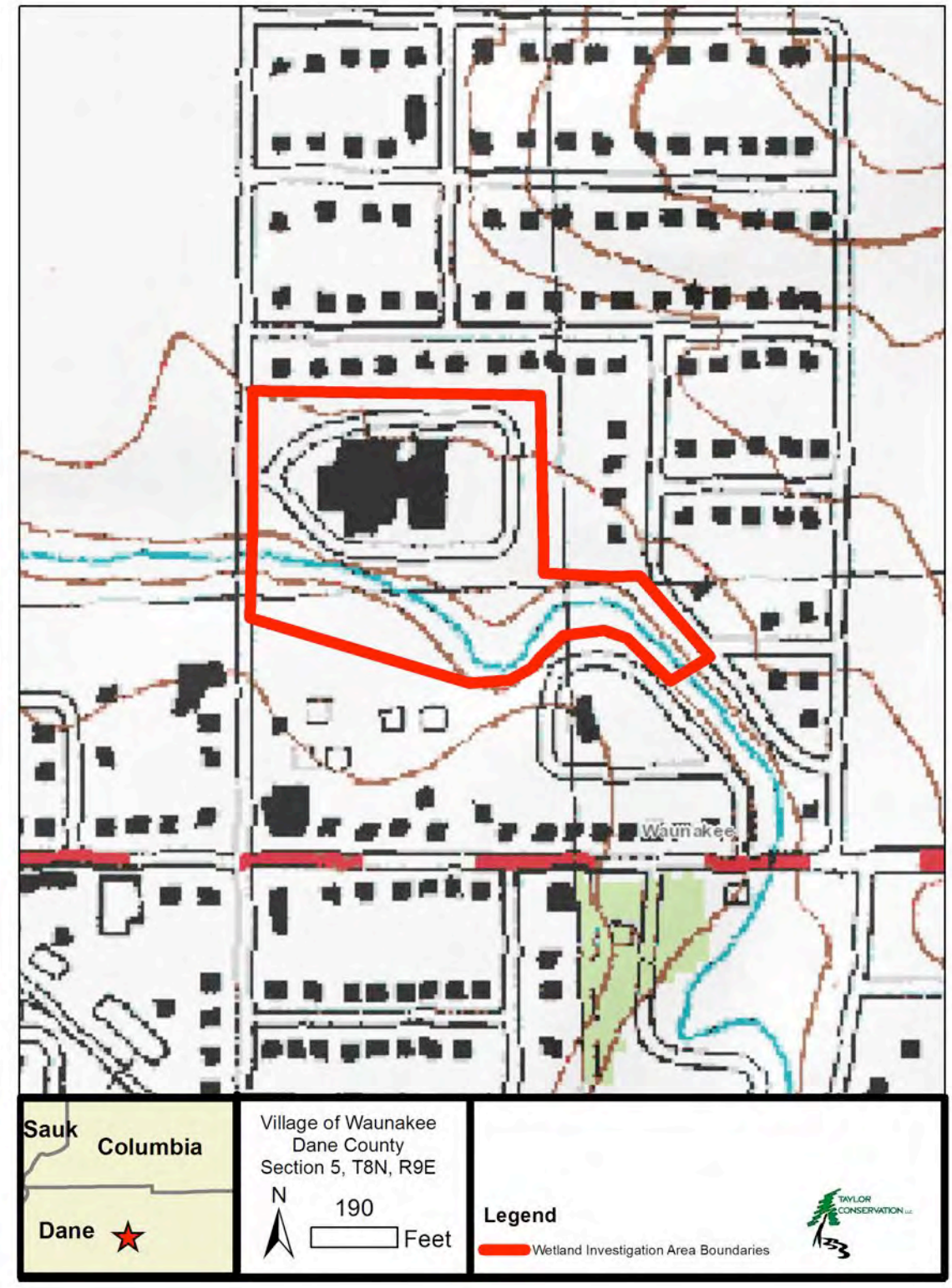


Figure 4: Soils.

Source: Natural Resource Conservation Service.

Soil	Drainage class	Percent Hydric
Alluvial land, wet (Af)	Poorly Drained	100%
Elburn silt loam (EfB)	Somewhat Poorly Drained	5%
Griswold loam (GwC)	Well Drained	0%
Plano silt loam (PnB)	Well Drained	0%

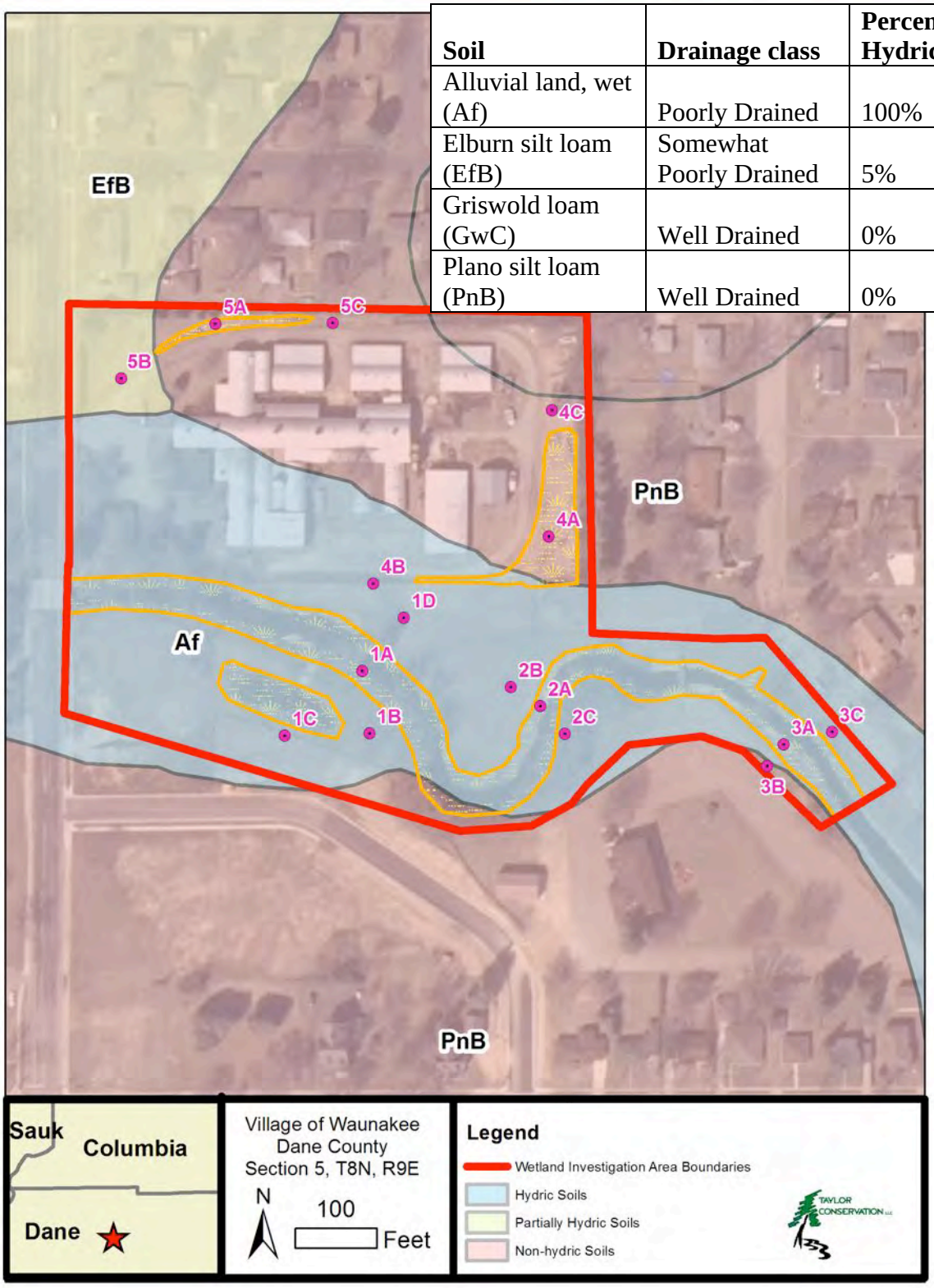
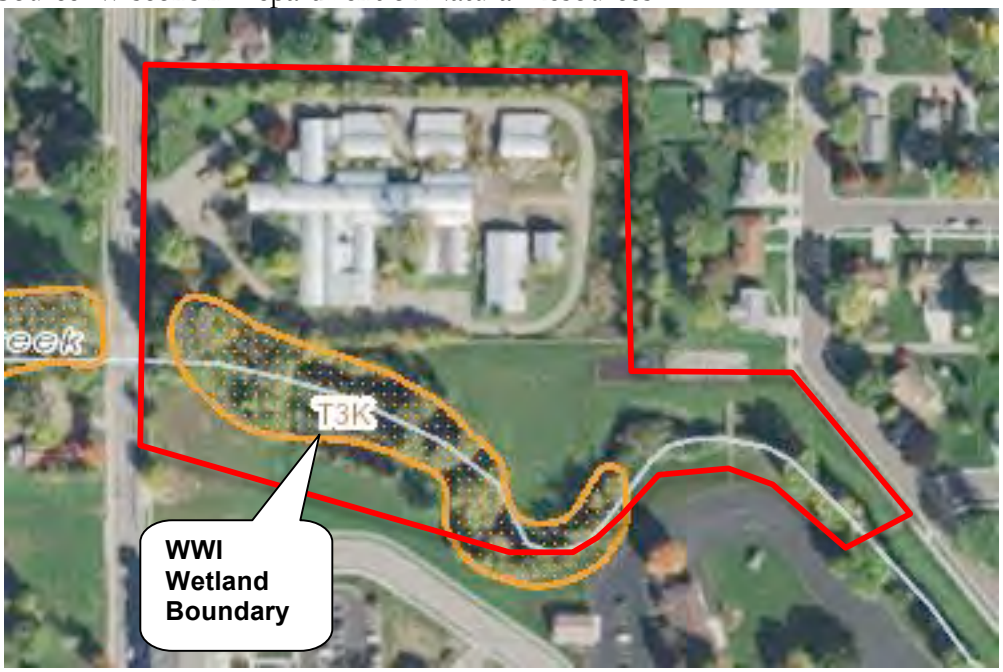
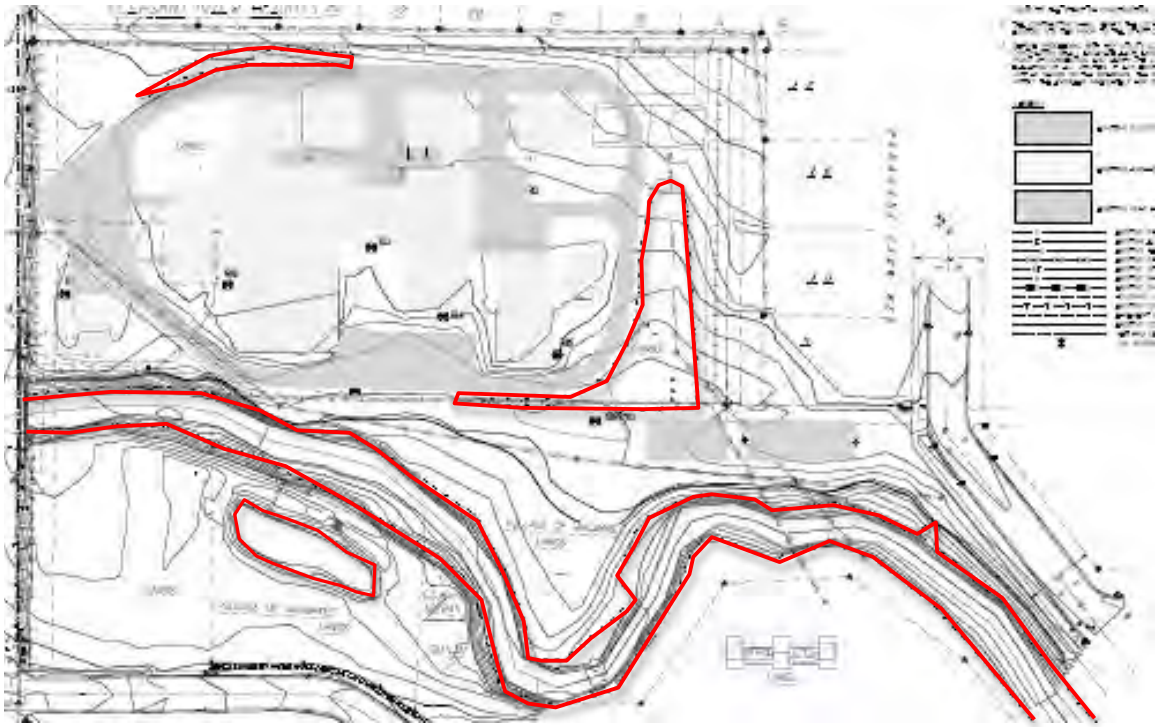


Figure 5: Wisconsin Wetland Inventory Map.

Source: Wisconsin Department of Natural Resources.



Appendix I: Survey Map of Wetland Boundary.



Appendix II: Investigation Area Photos

Sixmile Creek

Storm Water Basin

Wetland - Plot 1A

Upland Plot 1B

Upland Plot 1C

Wetland - Plot 2A

Upland - Plot 2B

Wetland-Plot 3A

Upland - Plot 3C

Wetland – Plot 4A

Upland – Plot 4C

Upland - Plot 5C

Appendix III: Data Sheets

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 01a

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI classification:** T3K

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

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date. The soil was naturally problematic since it was judged hydric even though no hydric indicators were observed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ◉ No ○	Depth (inches):	8	**Wetland Hydrology Present?** Yes ◉ No ○
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0	

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

Remarks:

The plot met the criteria of Geomorphic Position since it occupied a low bench by a stream where prolonged, frequent saturation or inundation would be likely.

VEGETATION - Use scientific names of plants

Sampling Point: 01a

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 2826)			
1. *Salix nigra*	20	☑	OBL
2. *Acer saccharinum*	10	☑	FACW
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	30	**= Total Cover**	
Sapling/Shrub Stratum (Plot size: 2,826 sf)			
1. *Cornus alba*	15	☑	FACW
2. *Fraxinus pennsylvanica*	20	☑	FACW
3. *Viburnum opulus*	10	☐	FACW
4.		☐	
5. *Acer saccharinum*	20	☑	FACW
6. *Acer negundo*	10	☐	FAC
7. *Rhamnus cathartica*	5	☐	FAC
	80	**= Total Cover**	
Herb Stratum (Plot size: 78.5)			
1. *Phalaris arundinacea*	40	☑	FACW
2. *Hydrophyllum virginianum*	20	☑	FAC
3. *Impatiens capensis*	5	☐	FACW
4. *Acer saccharinum*	5	☐	FACW
5. *Lonicera x bella*	5	☐	FACU
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	75	**= Total Cover**	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	**= Total Cover**	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (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	20	x 1 =	20	
FACW species	125	x 2 =	250	
FAC species	35	x 3 =	105	
FACU species	5	x 4 =	20	
UPL species	0	x 5 =	0	
Column Totals:	185	(A)	395	(B)

Prevalence Index = B/A = 2.135

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a brushy, wooded area. Most of the herb layer species were green and growing and most of the woody species had begun leaf out, suggesting the growing season had begun. Since it was very early in the growing season, it is possible that some species were present but not observed.

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

Soil

Sampling Point: 01a

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
0-30	10YR 2/1	100					Silt Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators observed however professional judgment was used to assume the soil was hydric based on the vegetation and hydrology indicators. No B-horizon was noted; the soil consisted of deep alluvial deposits.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 01b

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Summit **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI classification:** T3K

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

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	

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

Remarks:

No hydrology indicators. The plot sat on a high bench and was well elevated above the nearby wetland sample plot 1A.

VEGETATION - Use scientific names of plants

Sampling Point: 01b

Tree Stratum (Plot size: 2826)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Ulmus pumila*	5	☑	FACU
2. *Salix nigra*	5	☑	OBL
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	

Sapling/Shrub Stratum (Plot size: 2,826 sf)			
1. *Acer negundo*	60	☑	FAC
2. *Lonicera x bella*	15	☐	FACU
3. *Fraxinus pennsylvanica*	10	☐	FACW
4. *Rubus occidentalis*	5	☐	UPL
5.		☐	
6.		☐	
7.	0	☐	
	90	= Total Cover	

Herb Stratum (Plot size: 78.5)			
1. *Geum canadense*	15	☑	FAC
2. *Alliaria petiolata*	30	☑	FACU
3. *Rubus occidentalis*	5	☐	UPL
4. *Glechoma hederacea*	5	☐	FACU
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	55	= Total Cover	

Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	5	x 1 =	5
FACW species	10	x 2 =	20
FAC species	75	x 3 =	225
FACU species	55	x 4 =	220
UPL species	10	x 5 =	50
Column Totals:	155 (A)		520 (B)

Prevalence Index = B/A = 3.355

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a brushy, wooded area. Most of the herb layer species were green and growing and most of the woody species had begun leaf out, suggesting the growing season had begun. Since it was very early in the growing season, it is possible that some species were present but not observed. Although the site was dominated by hydrophytic vegetation, the absence of hydric soil indicators and the absence of wetland hydrology indicators strongly suggest this site would be capable of supporting upland vegetation. Also note the FAC Neutral Test was not met and the P-Index was > 3.

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

Soil

Sampling Point: 01b

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
0-14	10YR	3/2	100						Silt Loam	many rocks

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators. The unusual abundance of rocks suggests the soil might have formed in artificial fill material. The soil pit was only dug to 14 inches due to a dense layer of rocks.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 01c

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Summit **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI 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: (Explain alternative procedures here or in a separate report.)

Plot was in a mowed turf area. Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date. The vegetation was significantly disturbed and normal circumstances were not present since the site was regularly mowed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	

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

Remarks:

No hydrology indicators. The plot occupied a high bench, well elevated above the nearby wetland sample plot 1A.

VEGETATION - Use scientific names of plants

Sampling Point: 01c

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 78.5)			
1. *Poa pratensis*	95	☑	FACU
2. *Elymus repens*	20	☐	FACU
3. *Taraxacum officinale*	10	☐	FACU
4. *Plantago major*	5	☐	FACU
5. *Trifolium pratense*	5	☐	FACU
6. *Viola sororia*	5	☐	FAC
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	140	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 1 (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	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	135	x 4 =	540
UPL species	0	x 5 =	0
Column Totals:	140 (A)		555 (B)

Prevalence Index = B/A = 3.964

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a mowed turf area. It is possible some plant species were present but not observed due to close mowing. All of the herb layer species noted were green and growing, suggesting the growing season had begun.

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

Soil

Sampling Point: 01c

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
0-24	10YR	2/2	100						Silt Loam	many rocks

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators. The unusual abundance of rocks suggests the soil might have formed in artificial fill material.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 01d

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Backslope **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI 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: (Explain alternative procedures here or in a separate report.)

Plot was in a mowed turf area. Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date. The vegetation was significantly disturbed and normal circumstances were not present since the site was regularly mowed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0
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:

No hydrology indicators. The plot was well elevated above the nearby wetland sample plot 1A.

VEGETATION - Use scientific names of plants

Sampling Point: 01d

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 78.5)			
1. *Poa pratensis*	95	☑	FACU
2. *Schedonorus arundinaceus*	10	☐	FACU
3. *Glechoma hederacea*	5	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	110	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 1 (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	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	110	x 4 =	440
UPL species	0	x 5 =	0
Column Totals:	110 (A)		440 (B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a mowed turf area. It is possible some plant species were present but not observed due to close mowing. All of the herb layer species noted were green and growing, suggesting the growing season had begun.

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

Soil

Sampling Point: 01d

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
0-30	10YR	2/1	100						Silt Loam	many rocks

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators. The unusual abundance of rocks suggests the soil might have formed in artificial fill material.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 02a

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI classification:** T3K

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

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date. The soil was naturally problematic since it was judged hydric even though no hydric indicators were observed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ◉	No ○	Depth (inches):	20	**Wetland Hydrology Present?** Yes ◉ No ○
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	10	

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

Remarks:

The plot met the criteria of Geomorphic Position since it occupied a low bench by a stream where prolonged, frequent saturation or inundation would be likely.

VEGETATION - Use scientific names of plants

Sampling Point: 02a

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 78.5)			
1. *Phalaris arundinacea*	100	☑	FACW
2. *Glechoma hederacea*	10	☐	FACU
3. *Alliaria petiolata*	2	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	112	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	12	x 4 =	48
UPL species	0	x 5 =	0
Column Totals:	112 (A)		248 (B)

Prevalence Index = B/A = 2.214

Hydrophytic Vegetation Indicators:

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in an open, grassy area. All of the herb layer species were green and growing, suggesting the growing season had begun. Since it was very early in the growing season, it is possible that some species were present but not observed.

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

Soil

Sampling Point: 02a

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
0-16	10YR	2/1	100						Silt Loam	
16-30	10YR	2/1	95	7.5YR	4/6	5	C	PL	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators observed (the redox concentrations began too deep to meet the criteria of a hydric indicator) however professional judgment was used to assume the soil was hydric based on the vegetation and hydrology indicators. No B-horizon was noted; the soil consisted of deep alluvial deposits.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 02b

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Backslope **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI 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: (Explain alternative procedures here or in a separate report.)

The plot was in a mowed turf area. Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date. The vegetation was significantly disturbed and normal circumstances were not present since the site was regularly mowed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	

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

Remarks:

No hydrology indicators. The plot occupied a gentle slope, well elevated above the nearby wetland sample plot 2A.

VEGETATION - Use scientific names of plants

Sampling Point: 02b

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 78.5)			
1. *Poa pratensis*	95	☑	FACU
2. *Schedonorus arundinaceus*	60	☑	FACU
3. *Glechoma hederacea*	10	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	165	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	165	x 4 =	660	
UPL species	0	x 5 =	0	
Column Totals:	165	(A)	660	(B)

Prevalence Index = B/A = 4.000

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a mowed turf area. It is possible some plant species were present but not observed due to close mowing. All of the herb layer species noted were green and growing, suggesting the growing season had begun.

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

Soil

Sampling Point: 02b

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
0-13	10YR	2/2	100						Silt Loam	Many rocks
13-24	10YR	3/3	100						Silty Clay Loam	Many rocks

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators. The unusual abundance of rocks suggests the soil might have formed in artificial fill material.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 02c

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Shoulder **Local relief (concave, convex, none):** convex **Slope:** 5.0 % / 2.9 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI classification:** T3K

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

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	

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

Remarks:

No hydrology indicators. The plot occupied a steep slope, well elevated above the nearby wetland sample plot 2A.

VEGETATION - Use scientific names of plants

Sampling Point: 02c

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2,826 sf)			
1. *Acer negundo*	60	☑	FAC
2. *Ulmus americana*	30	☑	FACW
3. *Lonicera x bella*	10	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	100	= Total Cover	
Herb Stratum (Plot size: 78.5)			
1. *Alliaria petiolata*	50	☑	FACU
2. *Phalaris arundinacea*	10	☐	FACW
3. *Viola sororia*	5	☐	FAC
4. *Leonurus cardiaca*	5	☐	UPL
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	70	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	65	x 3 =	195
FACU species	60	x 4 =	240
UPL species	5	x 5 =	25
Column Totals:	170 (A)		540 (B)

Prevalence Index = B/A = 3.176

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a brushy, wooded area. Most of the herb layer species were green and growing and most of the woody species had begun leaf out, suggesting the growing season had begun. Since it was very early in the growing season, it is possible that some species were present but not observed. Although the site was dominated by hydrophytic vegetation, the absence of hydric soil indicators and the absence of wetland hydrology indicators strongly suggest this site would be capable of supporting upland vegetation. Also note the FAC Neutral Test was not met and the P-Index was > 3.

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

Soil

Sampling Point: 02c

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
0-20	10YR	2/2	100						Silt Loam	
20-30	10YR	3/3	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 03a

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI 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: (Explain alternative procedures here or in a separate report.)

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date. The soil was naturally problematic since it was judged hydric even though no hydric indicators were observed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○	No ◉	Depth (inches):	0	
Saturation Present? (includes capillary fringe)	Yes ◉	No ○	Depth (inches):	16	**Wetland Hydrology Present?** Yes ◉ No ○

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

Remarks:

The plot met the criteria of Geomorphic Position since it occupied a low bench by a stream where prolonged, frequent saturation or inundation would be likely.

VEGETATION - Use scientific names of plants

Sampling Point: 03a

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2,826 sf)			
1. *Fraxinus pennsylvanica*	5	☑	FACW
2. *Rhamnus cathartica*	2	☑	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	7	= Total Cover	
Herb Stratum (Plot size: 78.5)			
1. *Phalaris arundinacea*	90	☑	FACW
2. *Urtica dioica*	10	☐	FAC
3. *Impatiens capensis*	5	☐	FACW
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	105	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (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	100	x 2 =	200
FAC species	12	x 3 =	36
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	112 (A)		236 (B)

Prevalence Index = B/A = 2.107

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a predominantly open, grassy area. The herb layer species were green and growing and the woody species had begun leaf out, suggesting the growing season had begun. Since it was very early in the growing season, it is possible that some species were present but not observed.

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

Soil

Sampling Point: 03a

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
0-30	10YR 2/1	100					Silt Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators observed however professional judgment was used to assume the soil was hydric based on the vegetation and hydrology indicators. No B-horizon was noted; the soil consisted of deep alluvial deposits.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 03b

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Shoulder **Local relief (concave, convex, none):** convex **Slope:** 1.0 % / 0.6 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Plano silt loam (PnB) **NWI 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: (Explain alternative procedures here or in a separate report.)

The plot was in a mowed turf area. Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date. The vegetation was significantly disturbed and normal circumstances were not present since the site was regularly mowed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0
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:

No hydrology indicators. The plot occupied a high bench, well elevated above the nearby wetland sample plot 3A.

VEGETATION - Use scientific names of plants

Sampling Point: 03b

Tree Stratum (Plot size: 2826)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer saccharinum*	40	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	40	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 78.5)			
1. *Poa pratensis*	100	☑	FACU
2. *Viola sororia*	5	☐	FAC
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	105	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 2 (B)

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

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	5	x 3 =	15
FACU species	100	x 4 =	400
UPL species	0	x 5 =	0
Column Totals:	145 (A)		495 (B)

Prevalence Index = B/A = 3.414

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a mowed turf area. The silver maples were planted. It is possible some plant species were present but not observed due to close mowing. All of the herb and tree layer species noted were green and growing, suggesting the growing season had begun.

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

Soil

Sampling Point: 03b

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
0-14	10YR	2/2	100						Silt Loam	
14-24	10YR	3/3	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 19-Apr-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 03c

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Backslope **Local relief (concave, convex, none):** convex **Slope:** 5.0 % / 2.9 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** -89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI 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: (Explain alternative procedures here or in a separate report.)

The plot was in a mowed turf area. Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (January-Wet; February-Wet; March-Wet), was found to be above average. In the month of fieldwork (April), total precipitation was 2.6 inches to date. The vegetation was significantly disturbed and normal circumstances were not present since the site was regularly mowed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0
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:

No hydrology indicators. The plot occupied a steep slope, well elevated above the nearby wetland sample plot 3A.

VEGETATION - Use scientific names of plants

Sampling Point: 03c

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 78.5)			
1. *Poa pratensis*	95	☑	FACU
2. *Schedonorus arundinaceus*	20	☐	FACU
3. *Viola sororia*	5	☐	FAC
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	120	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 1 (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	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals:	120 (A)		475 (B)

Prevalence Index = B/A = 3.958

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a mowed turf area. It is possible some plant species were present but not observed due to close mowing. All of the herb layer species noted were green and growing, suggesting the growing season had begun.

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

Soil

Sampling Point: 03c

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
0-18	10YR	2/2	100						Silt Loam	flecks 10yr3/3 material & many rocks
18-24	10YR	2/2	95	10YR	4/6	5	C	PL	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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators (the redox concentrations began too deep to meet the criteria of a hydric indicator). The unusual abundance of rocks suggests the soil might have formed in artificial fill material.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 09-Jun-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 04a

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** 89.449872 **Datum:** NAD83

Soil Map Unit Name: Plano silt loam (PnB) **NWI 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: (Explain alternative procedures here or in a separate report.)

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (March-Wet; April-Wet; May-Normal), was found to be above average. In the month of fieldwork (June), there was no precipitation to date. The soil was naturally problematic since it was judged hydric even though no hydric indicators were observed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ◉ No ○	Depth (inches):	8	**Wetland Hydrology Present?** Yes ◉ No ○
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0	

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

Remarks:

The soil was saturated to the surface. The plot met the criteria of Geomorphic Position since it occupied the bottom of a closed basin where prolonged, frequent saturation or inundation would be likely.

VEGETATION - Use scientific names of plants

Sampling Point: 04a

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2,826 sf)			
1. *Cornus alba*	15	☑	FACW
2. *Viburnum dentatum*	5	☑	FAC
3. *Salix babylonica*	5	☑	FAC
4. *Salix discolor*	5	☑	FACW
5. *Fraxinus pennsylvanica*	5	☑	FACW
6.	0	☐	
7.	0	☐	
	35	= Total Cover	
Herb Stratum (Plot size: 78.5 sf)			
1. *Typha latifolia*	60	☑	OBL
2. *Symphyotrichum puniceum var. puniceum*	40	☑	OBL
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	100	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (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	100	x 1 =	100
FACW species	25	x 2 =	50
FAC species	10	x 3 =	30
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	135 (A)		180 (B)

Prevalence Index = B/A = 1.333

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a cattail marsh surrounded by patchy brush.

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

Soil

Sampling Point: 04a

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
0-6	10YR	2/2	100						Silt Loam	
6-14	10YR	4/3	95	10YR	4/6	5	C	PL	Sandy 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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 plot was only dug to 14 inches due to the abundance of rocks. No hydric indicators observed however professional judgment was used to assume the soil was hydric based on the vegetation and hydrology indicators.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 09-Jun-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 04b

Investigator(s): Scott Taylor **Section, Township, Range:** S. 5 T. 8N R. 9E

Landform (hillslope, terrace, etc.): Footslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** 89.449872 **Datum:** NAD83

Soil Map Unit Name: Alluvial land, wet (Af) **NWI 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 ○	
Hydric Soil Present?	Yes ○	No ◉	**Is the Sampled Area within a Wetland?** Yes ○ No ◉
Wetland Hydrology Present?	Yes ○	No ◉	

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

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (March-Wet; April-Wet; May-Normal), was found to be above average. In the month of fieldwork (June), there was no precipitation to date.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○	No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○	No ◉	Depth (inches):	0	

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

Remarks:

No hydrology indicators. The lack of wetland hydrology indicators suggested the swale does not collect large volumes of surface runoff water.

VEGETATION - Use scientific names of plants

Sampling Point: 04b

Tree Stratum (Plot size: 78.5 sf)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer negundo*	100	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	100	= Total Cover	

Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	

Herb Stratum (Plot size: 78.5 sf)			
1. *Alliaria petiolata*	70	☑	FACU
2. *Solidago gigantea*	25	☐	FACW
3. *Geum canadense*	5	☐	FAC
4. *Viola sororia*	10	☐	FAC
5. *Acer negundo*	5	☐	FAC
6. *Glechoma hederacea*	15	☐	FACU
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	130	= Total Cover	

Woody Vine Stratum (Plot size: 78.5 sf)			
1. *Vitis riparia*	20	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
	20	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

	Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0	
FACW species	25	x 2 =	50	
FAC species	140	x 3 =	420	
FACU species	85	x 4 =	340	
UPL species	0	x 5 =	0	
Column Totals:	250	(A)	810	(B)

Prevalence Index = B/A = 3.240

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a wooded area with an herbaceous groundlayer. Although the site was dominated by hydrophytic vegetation, the absence of hydric soil indicators and the absence of wetland hydrology indicators strongly suggest this site would be capable of supporting upland vegetation. Also note the FAC Neutral Test was not met and the P-Index was > 3.

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

Soil

Sampling Point: 04b

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
0-30	10YR 2/1	100					Silt Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric indicators.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 09-Jun-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 04c

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Footslope **Local relief (concave, convex, none):** convex **Slope:** 2.0 % / 1.1 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** 89.449872 **Datum:** NAD83

Soil Map Unit Name: Plano silt loam (PnB) **NWI 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: (Explain alternative procedures here or in a separate report.)

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (March-Wet; April-Wet; May-Normal), was found to be above average. In the month of fieldwork (June), there was no precipitation to date.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	

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

Remarks:

No hydrology indicators. The plot was well elevated above the nearby wetland sample plot 4A.

VEGETATION - Use scientific names of plants

Sampling Point: 04c

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2,826 sf)			
1. *Populus deltoides*	10	☑	FAC
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Herb Stratum (Plot size: 78.5 sf)			
1. *Poa pratensis*	90	☑	FACU
2. *Schedonorus arundinaceus*	30	☑	FACU
3. *Solidago canadensis*	25	☐	FACU
4. *Viola sororia*	5	☐	FAC
5. *Daucus carota*	5	☐	UPL
6. *Parthenocissus quinquefolia*	10	☐	FACU
7. *Acer negundo*	5	☐	FAC
8. *Juglans nigra*	5	☐	FACU
9. *Phalaris arundinacea*	5	☐	FACW
10.	0	☐	
11.	0	☐	
12.	0	☐	
	180	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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: 3 (B)

Percent of dominant Species That Are OBL, FACW, or FAC: 33.3% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	20	x 3 =	60
FACU species	160	x 4 =	640
UPL species	5	x 5 =	25
Column Totals:	190 (A)		735 (B)

Prevalence Index = B/A = 3.868

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in an open, grassy area with scattered tree saplings.

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

Soil

Sampling Point: 04c

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
0-6	10YR	2/2	100						Silt Loam	chunks 10YR 4/1
6-14	10YR	4/1	90	10YR	4/6	10	C	PL	Silty Clay Loam	
14-24	10YR	2/1	100						Silt Loam	flecks 4/1

[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)
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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 unusual sequence of soil horizons suggests this soil profile may have been disturbed. This would be expected since the site occupied an industrial area.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 09-Jun-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 05a

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Toeslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** 89.449872 **Datum:** NAD83

Soil Map Unit Name: Plano silt loam (PnB) **NWI 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: (Explain alternative procedures here or in a separate report.)

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (March-Wet; April-Wet; May-Normal), was found to be above average. In the month of fieldwork (June), there was no precipitation to date. The soil was naturally problematic since it was judged hydric even though no hydric indicators were observed.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ◉ No ○	Depth (inches):	6	**Wetland Hydrology Present?** Yes ◉ No ○
Saturation Present? (includes capillary fringe)	Yes ◉ No ○	Depth (inches):	0	

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

Remarks:

The soil was saturated to the surface. The plot met the criteria of Geomorphic Position since it occupied the bottom of a closed depression where prolonged, frequent saturation or inundation would be likely.

VEGETATION - Use scientific names of plants

Sampling Point: 05a

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2,826 sf)			
1. *Acer saccharinum*	10	☑	FACW
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	10	= Total Cover	
Herb Stratum (Plot size: 78.5 sf)			
1. *Phalaris arundinacea*	80	☑	FACW
2.	0	☐	
3. *Glechoma hederacea*	10	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	90	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (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	90	x 2 =	180
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	100 (A)		220 (B)

Prevalence Index = B/A = 2.200

Hydrophytic Vegetation Indicators:

- ☑ **Rapid Test for Hydrophytic Vegetation**
- ☑ **Dominance Test is > 50%**
- ☑ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in an open, grassy area with scattered tree saplings.

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

Soil

Sampling Point: 05a

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
0-14	10YR 2/2	100					Silt Loam	

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

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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 plot was only dug to 14 inches due to the abundance of rocks. No hydric indicators observed however professional judgment was used to assume the soil was hydric based on the vegetation and hydrology indicators.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 09-Jun-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 05b

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Footslope **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** 89.449872 **Datum:** NAD83

Soil Map Unit Name: Plano silt loam (PnB) **NWI 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: (Explain alternative procedures here or in a separate report.)

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (March-Wet; April-Wet; May-Normal), was found to be above average. In the month of fieldwork (June), there was no precipitation to date.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	

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

Remarks:

No hydrology indicators. The plot occupied a shallow swale, but it was still moderately well elevated above nearby wetland sample plot 5A.

VEGETATION - Use scientific names of plants

Sampling Point: 05b

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Herb Stratum (Plot size: 78.5 sf)			
1. *Poa pratensis*	40	☑	FACU
2. *Schedonorus arundinaceus*	40	☑	FACU
3. *Glechoma hederacea*	5	☐	FACU
4. *Rumex crispus*	5	☐	FAC
5. *Taraxacum officinale*	5	☐	FACU
6. *Solidago canadensis*	5	☐	FACU
7. *Elymus repens*	10	☐	FACU
8. *Dactylis glomerata*	10	☐	FACU
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	120	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	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	0	x 2 =	0
FAC species	5	x 3 =	15
FACU species	115	x 4 =	460
UPL species	0	x 5 =	0
Column Totals:	120 (A)		475 (B)

Prevalence Index = B/A = 3.958

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in an open, grassy area.

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

Soil

Sampling Point: 05b

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
0-9	10YR	2/2	100						Silt Loam	
9-20	10YR	3/3	100						Sandy Loam	flecks dark material

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

No hydric soil indicators.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Waunakee Library **City/County:** Waunakee, Dane Co. **Sampling Date:** 09-Jun-17

Applicant/Owner: Waunakee Library Board **State:** Wisconsi **Sampling Point:** 05c

Investigator(s): Scott Taylor **Section, Township, Range:** **S.** 5 **T.** 8N **R.** 9E

Landform (hillslope, terrace, etc.): Footslope **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °

Subregion (LRR or MLRA): LRR K **Lat.:** 43.193247 **Long.:** 89.449872 **Datum:** NAD83

Soil Map Unit Name: Plano silt loam (PnB) **NWI 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: (Explain alternative procedures here or in a separate report.)

Using the Natural Resource Conservation Service weighted-month method, antecendent moisture, based on total precipitation for the previous 3 months (March-Wet; April-Wet; May-Normal), was found to be above average. In the month of fieldwork (June), there was no precipitation to date.

Hydrology

Wetland Hydrology Indicators:

Primary Indicators (minimum of one 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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of 2 required)

- ☐ 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 ◉	Depth (inches):	0	
Water Table Present?	Yes ○ No ◉	Depth (inches):	0	**Wetland Hydrology Present?** Yes ○ No ◉
Saturation Present? (includes capillary fringe)	Yes ○ No ◉	Depth (inches):	0	

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

Remarks:

No hydrology indicators. The plot was well elevated above the nearby wetland sample plot 5A.

VEGETATION - Use scientific names of plants

Sampling Point: 05c

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 2,826 sf)			
1. *Populus deltoides*	20	☑	FAC
2. *Morus alba*	15	☑	FACU
3. *Acer negundo*	20	☑	FAC
4. *Acer saccharinum*	10	☐	FACW
5.	0	☐	
6.	0	☐	
7.	0	☐	
	65	= Total Cover	
Herb Stratum (Plot size: 78.5 sf)			
1. *Poa pratensis*	80	☑	FACU
2. *Solidago canadensis*	70	☑	FACU
3. *Schedonorus arundinaceus*	10	☐	FACU
4.	0	☐	
5.	0	☐	
6.	0	☐	
7.	0	☐	
8.	0	☐	
9.	0	☐	
10.	0	☐	
11.	0	☐	
12.	0	☐	
	160	= Total Cover	
Woody Vine Stratum (Plot size:)			
1.	0	☐	
2.	0	☐	
3.	0	☐	
4.	0	☐	
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

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

Percent of dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

	Total % Cover of:	Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	40	x 3 =	120
FACU species	175	x 4 =	700
UPL species	0	x 5 =	0
Column Totals:	225 (A)		840 (B)

Prevalence Index = B/A = 3.733

Hydrophytic Vegetation Indicators:

- ☐ **Rapid Test for Hydrophytic Vegetation**
- ☐ **Dominance Test is > 50%**
- ☐ **Prevalence Index is ≤3.0** [1]
- ☐ **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.**

Definitions of Vegetation Strata:

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

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

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

Woody vine - 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.)

The plot was in a brushy area with a grassy ground layer.

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

Soil

Sampling Point: 05c

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
0-12	10YR	3/2	100						Sandy Loam	many rocks

[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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B)
- ☐ Loamy Mucky Mineral (F1) LRR K, L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils : [3]

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

[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:

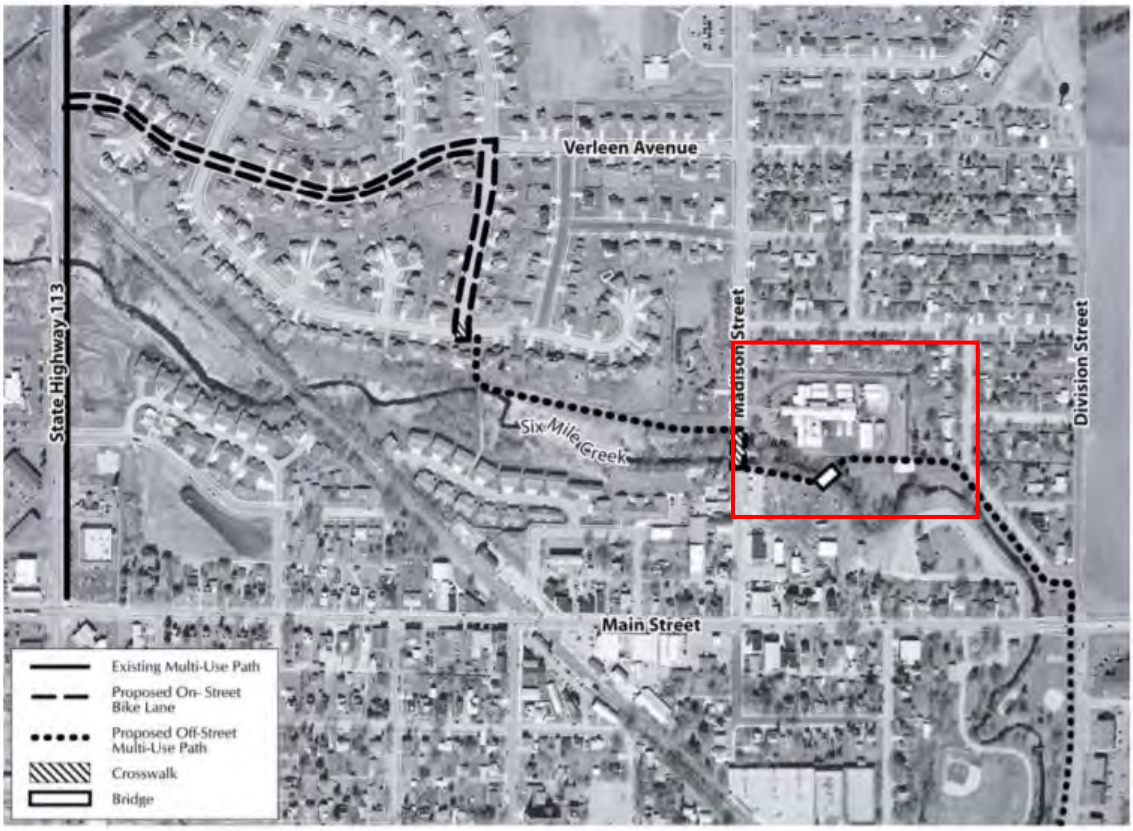
No hydric soil indicators. The plot was only dug to 12 inches due to the abundance of rocks.

TRAIL CONNECTIVITY

This project will fulfill objectives set forth by planning documents for bike trails in the area.

Please see the excerpt from the "Waunakee-Westport Bicycle and Pedestrian Plan" which was adopted by Waunakee in February of 2005. It shows the desire for trail connectivity from STH 113 to Division Street. Our project site is highlighted by the red box. Our proposed design keeps the trail on the north side of Six Mile Creek from Madison Street to Pleasant Drive. This helps fill the objective plan for that was highlighted twelve years ago.

Map 6: North Six Mile Creek Path and Lanes Concept



Waunakee Library
Trail Connectivity

In May of 2018, the Village commissioned Strand to investigate the feasibility of a trail along the Six Mile Creek Corridor. This would shift the previously planned out bike path from residential streets to the Six Mile Creek corridor. The Library site is in the far east of this map as shown in the green box and would provide the connection piece for this project.