

Appendix C

Wetland Delineation Report



Wetland Delineation Report

Basset Creek Park Pond & Winnetka Pond - East

Prepared for
Bassett Creek Watershed Management Commission

November 8, 2016

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1.0 Introduction

The Bassett Creek Watershed Management Commission is submitting a Wetland Delineation Report in preparation for a sediment dredging project within Basset Creek Park Pond and Winnetka Pond. The project sites are located in the City of Crystal, Hennepin County, Minnesota. Basset Creek Park Pond is located at 32nd Avenue North and Xenia Avenue North within Section 21 of Township 118 North, Range 21 West. Winnetka Pond is located south of the Winnetka Village Apartments at 7710 36th Avenue North within Section 17 of Township 118 North, Range 21 West. See **Figure 1** for a project location map depicting both pond locations.

Bassett Creek Park Pond and Winnetka Pond were field delineated to identify the wetland extent of each pond. Wetland plant communities within each delineated pond were also identified.

This Wetland Delineation Report has been prepared in accordance with the U.S. Army Corps of Engineers 1987 Wetland Delineation Manual ("1987 Manual", USACE, 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (USACE, 2010) and the requirements of the Minnesota Wetland Conservation Act (WCA) of 1991. Barr delineated the wetland boundary and determined wetland types within the evaluation area on October 11, 2016.

This report includes general environmental information (Section 2.0), descriptions of the delineated wetland area (Section 3.0), and a discussion of regulations and the administering authorities (Section 4.0). The **Tables** section includes the precipitation data. The **Figures** section includes the Site Location Map, Topography Maps, National Wetland Inventory (NWI) Maps, Public Waters Inventory (PWI), Soil Survey Maps, and Wetland Boundary Maps. **Appendix A** includes Wetland Data Forms, and site photographs are included in **Appendix B**.

2.0 General Environmental Setting

2.1 Site Description

The proposed dredging project sites are located in the City of Crystal. Bassett Creek Park Pond is located in Bassett Creek Park, which consists of open grassy fields used for sports and recreation, wooded uplands, and various wetland communities. Bassett Creek Park is surrounded by medium density residential area. Winnetka Pond is located south of the Winnetka Village Apartments and is partially surrounded by a narrow buffer of hardwood trees, and grasses with manicured lawn further upslope. Areas surrounding Winnetka Pond consist of commercial and industrial area with medium density residential area located further beyond (**Figure 1**).

2.2 Topography

The Bassett Creek Park Pond project site generally has steep topography in areas leading into the pond along the delineated edges. Topography within the basin generally has moderate undulations in areas that are not open water. Adjacent upland areas are generally flat or moderately undulating throughout most of the park area with the exception of some steep hilly areas to the west (**Figure 2**).

The Winnetka Pond project site generally has steep topography in areas leading into the pond along the delineated edges. Floodplain forest wetland has a more gradual topographic transition from upland to wetland and moderate undulations within it. Adjacent upland areas are generally flat in developed areas and hillier in areas of open greenspace (**Figure 3**).

2.3 Precipitation

Recent precipitation data were compared to historic data for evaluating annual and monthly deviations from normal conditions. Simulated precipitation data were obtained from the Minnesota Climatology Working Group, Wetland Delineation Precipitation Data Retrieval from a Gridded Database (http://climate.umn.edu/gridded_data/precip/wetland/wetland.asp) for wetlands in Hennepin County, Township 118 North, Range 21 West, Section 17.

Antecedent (preceding) moisture conditions were within the wetter than the normal range based on precipitation for the three months prior to the October 11, 2016 site visit. July through September were all within the wetter than the normal range. These data were obtained from NRCS climate station 215838, New Hope Weather Station (**Table 1**). The water year has varied between normal and wet for the past six years from 2011 through 2016 (**Table 2**).

2.4 National Wetland Inventory

The NWI Map has identified five wetland types at the Bassett Creek Park Pond project site: shallow open water community (PUBG), shrub swamp (PSS1A), floodplain forest (PFO1A), seasonally flooded basin (PEM1A), and deep marsh (PABG) (**Figure 4**). One wetland type was identified at the Winnetka Pond project site: shallow open water (PUBGx) (**Figure 5**).

2.5 Water Resources

The Minnesota Department of Natural Resources (MnDNR) Public Waters Inventory (PWI) has identified Basset Creek Park Pond (27-646P) and Winnetka Pond (27-629P) as public water wetlands, which are within the delineated wetland boundaries of both ponds (**Figure 6**). Bassett Creek Park Pond and Winnetka Pond are not identified by the Minnesota Pollution Control Agency (MPCA) as impaired waters.

2.6 Soil Resources

Soil information for the project site was obtained from the Natural Resources Conservation Service SSURGO Database. One soil map unit was identified within the Bassett Creek Park Pond project site: Udorthents, wet substratum, 0 to 2 percent slopes (U2A) (**Figure 7**). Four soil map units were identified within the Winnetka Pond project site: Udorthents wet substratum, complex, 0 to 2 percent slopes (U1A); Udorthents wet substratum, 0 to 2 percent slopes (U2A); Urban land-Udorthents (cut and fill) complex, 0 to 6 percent slopes (U6B); Urban land-Lester complex, 2 to 18 percent slopes (L52C) (**Figure 8**). Remaining areas within both pond sites are identified as Water (W) in the SSURGO Database. All soils within both of these project sites are identified as non-hydric.

3.0 Wetland Delineation

3.1 Wetland Delineation and Classification Methods

Wetlands within the Bassett Creek Park Pond and Winnetka Pond project sites were delineated and classified during a site visit on October 11, 2016. The wetland delineation was established according to the Routine On-Site Determination Method specified in the U.S. Army Corps of Engineers Wetlands Delineation Manual (1987 Edition) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (USACE, 2010).

The delineated wetland boundaries and sample points were surveyed using a Global Positioning System (GPS) with sub-meter accuracy (**Figures 9 & 10**).

Wetlands were classified using the U.S. Fish and Wildlife Service (USFWS) Cowardin System (Cowardin et al., 1979), the USFWS Circular 39 system (Shaw and Fredine, 1956), and the Eggers and Reed Wetland Classification System (Eggers and Reed, 1977).

Soil borings were placed in and around wetland areas, to a depth of at least 24 inches below the ground surface where possible. Representative soil samples from each boring were examined for the presence of hydric soil indicators using the Natural Resources Conservation Service (NRCS) hydric soil indicators (Version 7.0). Soil colors (e.g., 7.5YR 4/2, etc.) were determined using a Munsell® soil color chart and noted on the Wetland Data Forms **Appendix A**.

Hydrologic conditions were evaluated at each soil boring, and this information was also noted on the Wetland Data Forms. The dominant plant species were identified, and the corresponding wetland indicator status of each plant species was determined and noted on the Wetland Data Forms (**Appendix A**). Photographs taken at the time of the site visit are provided in **Appendix B**.

3.2 Wetland Descriptions

One wetland boundary was delineated within the Bassett Creek Park Pond project site consisting of five wetland communities. One wetland boundary was delineated within the Winnetka Pond project site consisting of two wetland communities. Descriptions and assessments of these wetland areas are provided below, with representative photographs in **Appendix B**.

3.2.1 Bassett Creek Park Pond

Bassett Creek Park Pond is an 11.3 acre wetland complex made up of five wetland communities (**Figure 9**). Each wetland community type within Bassett Creek Park Pond is identified below using Eggers & Reed, Circular 39, and Cowardin wetland classification systems respectively:

- Shallow Open Water, Type 5, PUBG
- Shrub Swamp, Type 6, PSS1A
- Shallow Marsh, Type 3, PEMC
- Floodplain Forest, Type 1L, PFO1A
- Deep Marsh, Type 4, PUBGx

Shallow open water community is the dominant wetland type within Bassett Creek Park Pond and totals approximately 9.3 acres. Shallow open water community is mostly located in the central and southern areas of Bassett Creek Park Pond and generally has a steep and abrupt wetland boundary. Dominant vegetation observed was lesser duckweed (*Lemna minor*) near the shoreline in some areas, but no other emergent, floating-leaf, or submerged aquatic vegetation was observed from the shoreline within shallow open water community. Reed canary grass (*Phalaris arundinacea*) was dominant along the periphery of shallow open water community.

Shrub swamp community is located on the northwest side of Bassett Creek Park Pond (0.9 acres); and in the west-central (0.3 acres) and southwest-central (0.1 acres) areas of the pond surrounded by shallow open water community. The total area of shrub swamp community located in Bassett Creek Park Pond is 1.2 acres. Dominant shrubs observed were sand-bar willow (*Salix interior*). Topography within both areas is generally flat or moderately undulating. Bassett Creek extends south through floodplain forest community and then through shrub swamp community toward the shallow open water areas of Bassett Creek Park Pond.

Floodplain forest community is located at the northwest tip of Bassett Creek Park Pond and totals approximately 0.3 acres. Dominant trees within the floodplain forest are ash-leaf maple (*Acer negundo*), quaking aspen (*Populus tremuloides*), and Eastern cottonwood (*Populus deltoides*). There is moderately undulating topography throughout the floodplain forest community but steep and abrupt slopes leading into it from the east side. Bassett Creek extends south through floodplain forest community and then through shrub swamp community toward the shallow open water areas of Bassett Creek Park Pond.

Shallow marsh community fringes portions of Bassett Creek Park Pond on the northeast, and western sides. The two shallow marsh areas are approximately 0.1 acres each totaling 0.2 acres. Both shallow marsh areas are dominated by narrow-leaf cattail (*Typha angustifolia*) and have flat topography.

Deep marsh community is located within the shrub swamp community on the northwest side of Bassett Creek Park Pond and totals approximately 0.2 acres. This area was likely excavated based on the steep and abrupt slopes leading into it from the shrub swamp community and its regular oval shape. Lesser duckweed covers the entire surface water area of the deep marsh community.

Sample data was collected along the delineated wetland boundary of Bassett Creek Park Pond. Sample data was collected within shallow marsh community on the northeast side, shrub swamp community on the north-central side, and floodplain forest area on the northwest side.

Dominant vegetation within shallow marsh community at wetland Sample Point B-1w was narrow-leaf cattail, stinging nettle (*Urtica dioica*), and fowl blue grass (*Poa palustris*). Primary hydrology indicators included high water table (A2) at 3 inches below the soil surface, and saturation (A3) at the soil surface. Secondary indicators of hydrology present were geomorphic position (D2), and a positive FAC-neutral test (D5). Soils had loamy textures with peat intermixed throughout the soil profile and a low chroma and value matrix with prominent redox features at the surface down to 8 inches. Hydric soil indicators identified were loamy mucky mineral (F1) and redox dark surface (F6). The transition to upland was defined by an absence of hydrology and hydric soil indicators at upland Sample Point B-1u.

Dominant vegetation within shrub swamp community at wetland Sample Point B-2w was sandbar willow, reed canary grass, water smartweed (*Persicaria amphibia*), and late goldenrod (*Solidago gigantea*). Saturation (A3) at the soil surface was the only primary indicator of hydrology present. Secondary indicators of hydrology present were geomorphic position (D2), and a positive FAC-neutral test (D5). Soil textures included silt loams at the surface and transitioned to peat soils. Low chroma and value matrix colors were present throughout the profile with prominent redox concentrations from 8 to 15 inches below the soil surface. The identified hydric soil indicator was redox dark surface (F6). The transition to upland was defined by an absence of vegetation, hydrology and hydric soil indicators at upland Sample Point B-2u.

Dominant trees and herbaceous vegetation within floodplain forest community at wetland Sample Point B-3w was Eastern cottonwood, quaking aspen, ash-leaf maple, reed canary grass and stinging nettle. There were no primary hydrology indicators, but secondary indicators of hydrology included geomorphic position (D2), and a positive FAC-neutral test (D5). Soils had silt loam textures with a low chroma and value matrix colors throughout the 40-inch soil profile and prominent redox concentrations from 7 to 40 inches. The identified hydric soil indicator was redox dark surface (F6). The transition to upland was defined by an absence of hydrology and hydric soil indicators at upland Sample Point B-3u.

3.2.2 Winnetka Pond

Winnetka Pond is a 3.5 acre wetland complex made up of two wetland communities (**Figure 10**). Both wetland community types within Winnetka Pond are identified below using Eggers & Reed, Circular 39, and Cowardin wetland classification systems respectively:

- Shallow Open Water, Type 5, PUBGx
- Floodplain Forest, Type 1L, PFO1A

Shallow open water community is the dominant wetland type within Winnetka Pond and totals approximately 3.2 acres. Topography is generally steep and abrupt along the wetland boundary leading into the pond. No emergent, floating-leaf, or submerged aquatic vegetation was observed within shallow open water community during the time of the site visit. Reed canary grass and Canada goldenrod was present along the fringes of the shallow open water community mostly in uplands.

Floodplain forest community is located along the eastern fringe of Winnetka Pond and totals approximately 0.3 acres. Dominant trees within the floodplain forest are ash-leaf maple, quaking aspen, and Eastern cottonwood. Topography is mostly flat throughout the floodplain forest community but is steep and abrupt leading into it from upland areas on the east side.

Dominant trees and herbaceous vegetation within floodplain forest community at wetland Sample Point W-1w was quaking aspen, ash-leaf maple, reed canary grass and river club-rush (*Schoenoplectus fluviatilis*). Primary hydrology indicators included high water table (A2) at 9 inches below the soil surface, saturation (A3) at 2 inches below the soil surface, and aquatic fauna (B13). Secondary indicators of hydrology present were geomorphic position (D2), and a positive FAC-neutral test (D5). Soils had clay loam textures at the surface and transitioned to clay textures from 10 inches to 24 inches. Soil matrix colors had a low chroma and value and had prominent redox concentrations throughout the 24-inch soil profile. The identified hydric soil indicator was redox dark surface (F6). The transition to upland was defined by an absence of hydrology and hydric soil indicators at upland Sample Point B-3u.

4.0 Regulatory Overview

The USACE regulates the placement of dredge or fill materials into wetlands that are located adjacent to or are hydrologically connected to interstate or navigable waters under the authority of Section 404 of the Clean Water Act. If the USACE has jurisdiction over any portion of a project, they may also review impacts to wetlands under the authority of the National Environmental Policy Act.

Filling, excavating, and draining wetlands are also regulated by the Minnesota Wetland Conservation Act (WCA), and the Minnesota Public Waters Work Permit Program, which are administered by the City of Crystal and the Minnesota Department of Natural Resources (MnDNR) respectively. The USACE, the City of Crystal and the DNR should be contacted before altering any wetlands. In addition, delineated wetland boundaries may be reviewed by a Technical Evaluation Panel (TEP) consisting of representatives from the City of Crystal, Minnesota Board of Water and Soil Resources, and Hennepin County. Representatives from the MnDNR, and the USACE may also review this wetland delineation and make a determination as to whether they will take jurisdiction.

5.0 References

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- U.S. Fish and Wildlife Service. 1956. *Wetlands of the United States Circular 39*. U.S. Government Printing Office, Washington, D.C.

Tables

Table 1
Antecedent Moisture Conditions Prior to October 11, 2016 Site
Visit Bassett Creek Park Pond & Winnetka Pond Wetland Delineation
Crystal, MN

Precipitation Worksheet Using Gridded Database

Precipitation data for target wetland location:

County: Hennepin **Township Number:** 118N
Township Name: Brooklyn Center **Range Number:** 21W
Nearest Community: Crystal **Section Number:** 17

Aerial photograph or site visit date:

Tuesday, October 11, 2016

Score using 1981-2010 Summary Statistics

(value are in inches)	first prior month: September 2016	second prior month: August 2016	third prior month: July 2016
estimated precipitation total for this location:	6.58R	7.48R	6.53
there is a 30% chance this location will have less than:	2.34	3.48	2.82
there is a 30% chance this location will have more than:	3.91	5.07	4.39
type of month: dry normal wet	wet	wet	wet
monthly score	3 * 3 = 9	2 * 3 = 6	1 * 3 = 3
multi-month score: 6 to 9 (dry) 10 to 14 (normal) 15 to 18 (wet)	18 (Wet)		

Table 2
Precipitation in Comparison to WETS Data
Bassett Creek Park Pond & Winnetka Pond Wetland
Delineation Crystal, MN

Precipitation data for target wetland location:

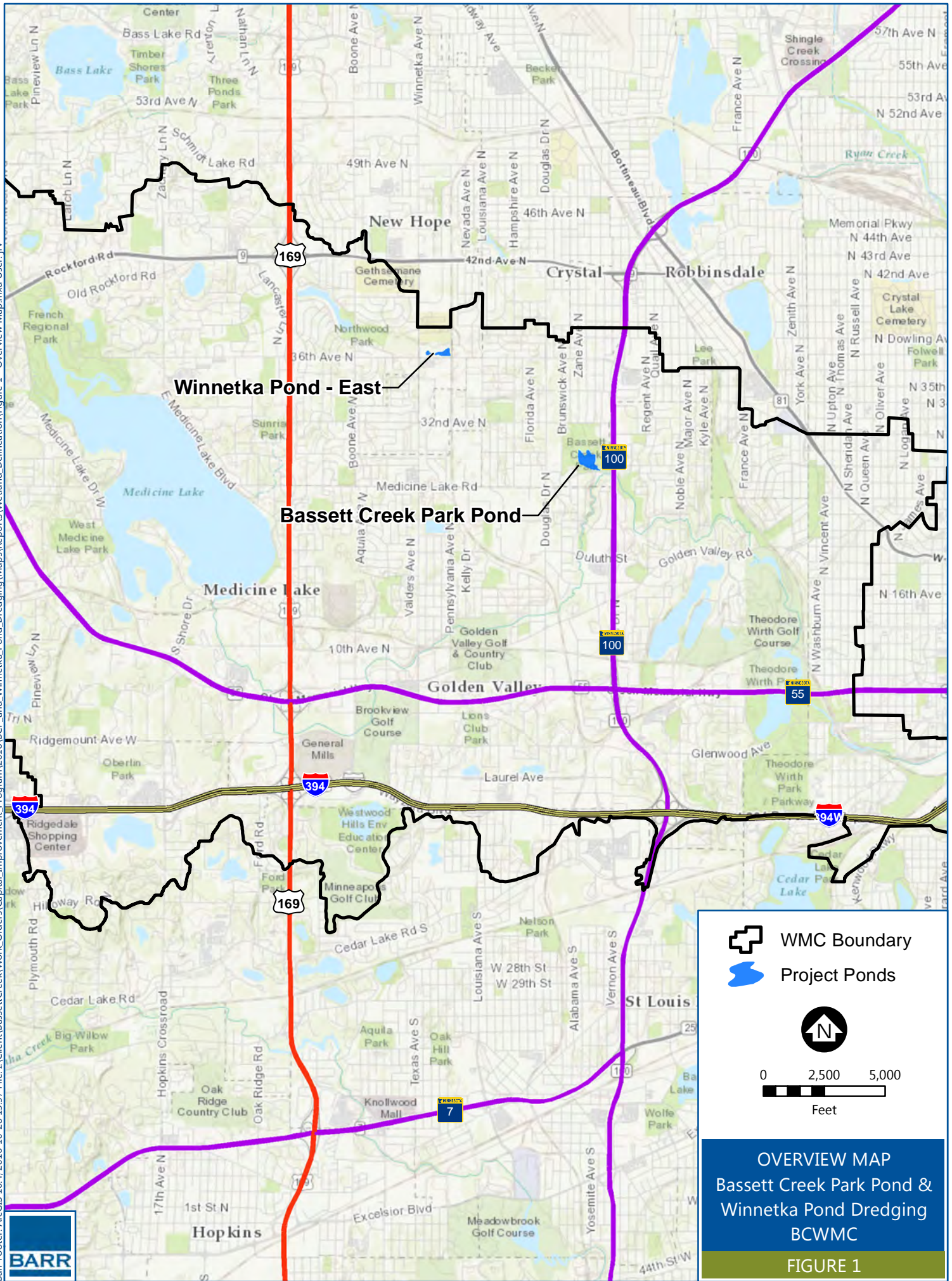
County: Hennepin **Township Number:** 118N
Township Name: Brooklyn Center **Range Number:** 21W
Nearest Community: Crystal **Section Number:** 17

Precipitation Totals are in Inches	
Color Key	Multi-month Totals:
total is in lowest 30th percentile of the period-of-record distribution	WARM = warm season (May thru September)
total is => 30th and <= 70th percentile	ANN = calendar year (January thru December)
total is in highest 30th percentile of the period-of-record distribution	WAT = water year (Oct. previous year thru Sep. present year)

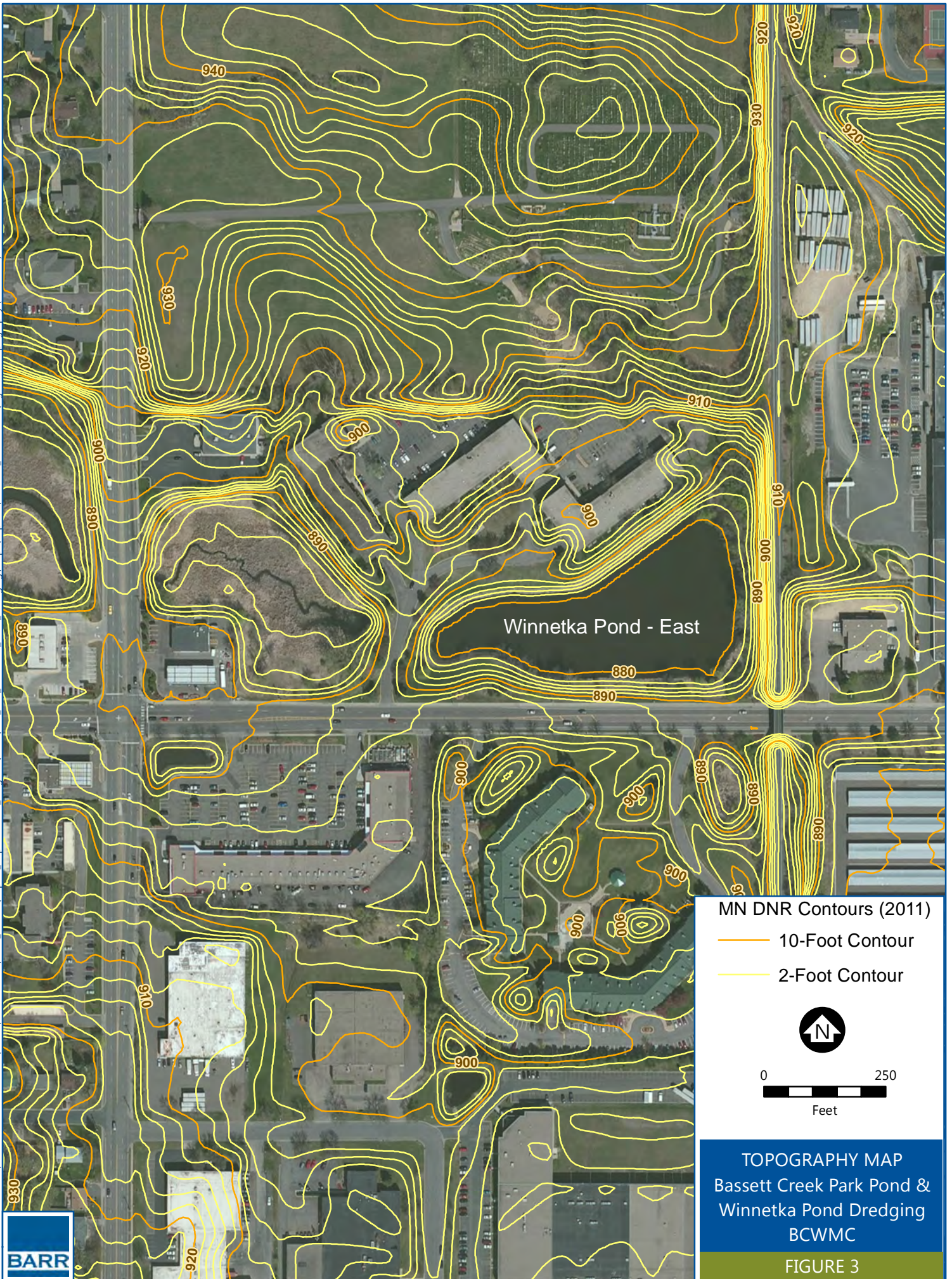
A 'R' following a monthly total indicates a provisional value derived from radar-based estimates.

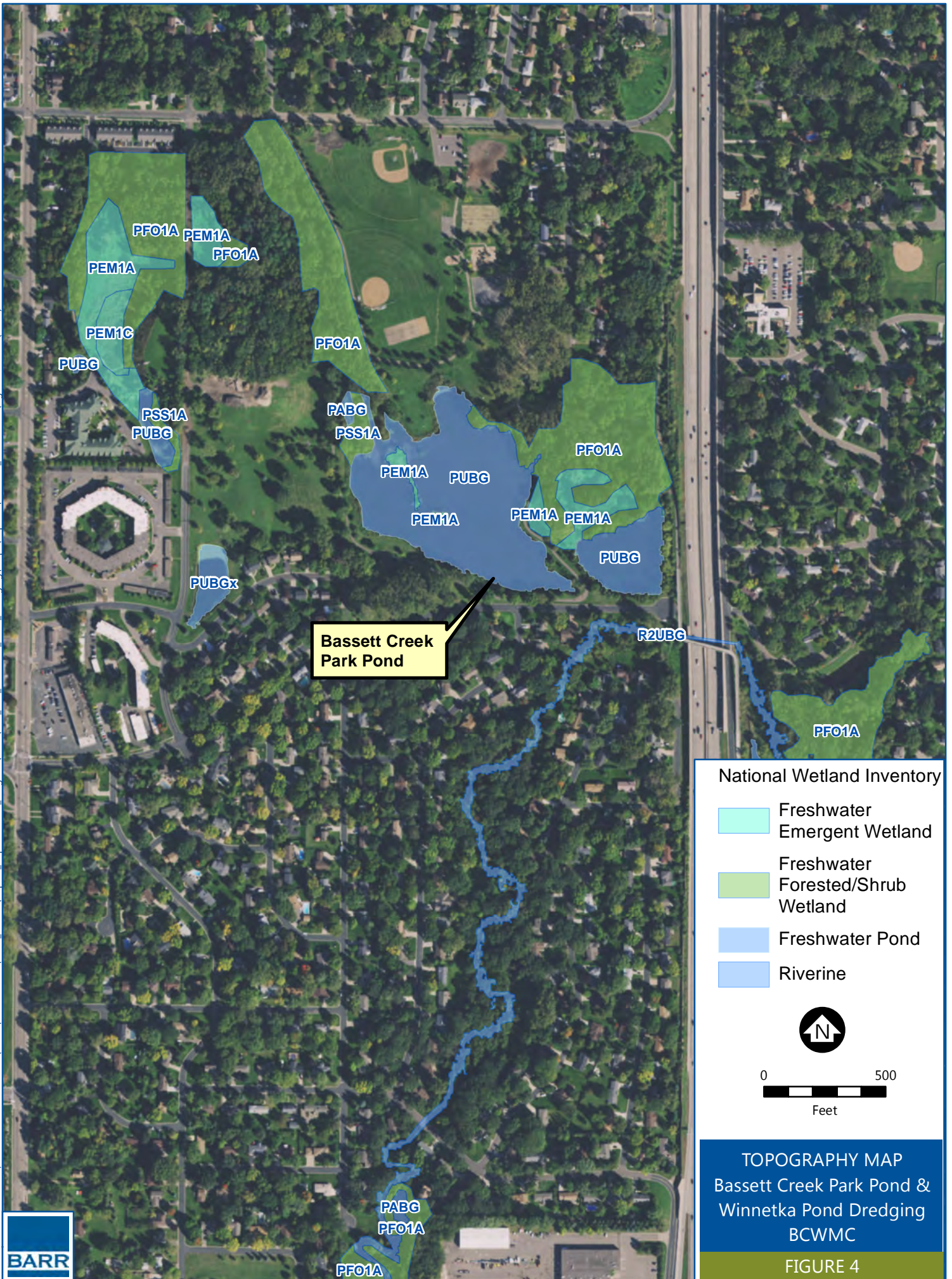
Period-of-Record Summary Statistics															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
30%	0.53	0.50	1.14	1.63	2.61	3.23	2.38	2.75	1.89	1.20	0.74	0.57	16.16	26.01	26.07
70%	1.10	1.19	2.07	2.78	4.37	5.55	4.37	4.47	3.84	2.72	1.92	1.35	21.34	32.30	32.02
mean	0.89	0.90	1.66	2.44	3.69	4.48	3.85	3.66	3.08	2.21	1.53	1.03	18.76	29.35	29.45
1981-2010 Summary Statistics															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
30%	0.54	0.42	1.38	2.28	2.83	3.52	2.82	3.48	2.34	1.32	1.06	0.70	18.51	30.76	28.63
70%	1.21	1.03	2.10	3.14	4.61	5.77	4.39	5.07	3.91	3.60	2.15	1.40	22.46	35.08	35.77
mean	0.87	0.80	1.92	2.89	3.79	4.68	4.30	4.22	3.47	2.57	1.81	1.23	20.45	32.53	32.34
Year-to-Year Data															
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	WARM	ANN	WAT
2016	0.31	0.79	1.60	3.66	2.38	2.84	6.53	7.48R	6.58R				25.81		40.86
2015	0.33	0.27	0.63	2.07	4.40	3.31	6.95	3.48	3.94	2.82	4.19	1.68	22.08	34.07	28.80
2014	1.15	1.37	0.80	7.26	4.26	10.16	3.31	3.12	1.50	1.16	1.20	1.06	22.35	36.35	39.62
2013	0.68	1.20	2.12	4.60	4.80	7.81	4.21	1.31	1.27	4.44	0.61	1.64	19.40	34.69	32.00
2012	0.53	2.05	1.32	2.87	9.61	4.21	4.24	1.33	0.54	1.44	0.90	1.66	19.93	30.70	28.65
2011	0.93	0.89	2.20	3.21	6.38	3.92	7.83	4.46	0.49	0.91	0.17	0.87	23.08	32.26	37.66
2010	0.59	0.85	0.93	2.02	2.86	6.25	3.64	5.85	5.69	1.96	2.14	3.25	24.29	36.03	37.47
2009	0.48	1.02	1.87	1.53	0.45	3.90	1.07	6.41	0.71	5.95	0.57	2.27	12.54	26.23	21.76
2008	0.14	0.52	2.08	4.05	2.64	4.41	2.15	2.53	2.19	1.64	1.17	1.51	13.92	25.03	28.02
2007	0.59	1.40	3.53	2.51	3.22	2.10	2.32	5.89	5.02	5.39	0.06	1.86	18.55	33.89	30.89
2006	0.64	0.41	1.88	3.83	4.61	4.32	1.84	5.13	3.41	0.68	1.07	2.56	19.31	30.38	33.67
2005	1.27	1.06	1.32	2.53	3.62	6.26	2.52	4.00	7.54	4.34	1.86	1.40	23.94	37.72	35.23
2004	0.55	1.54	2.14	2.67	5.87	5.02	3.66	1.69	4.95	3.57	1.05	0.49	21.19	33.20	31.19
2003	0.27	0.98	1.66	3.05	5.61	8.29	1.74	0.35	2.43	1.00	1.12	0.98	18.42	27.48	28.65
2002	0.58	0.56	1.98	4.18	4.73	8.80	7.69	6.32	4.08	3.94	0.08	0.25	31.62	43.19	43.74
2001	1.38	1.49	1.01	7.52	5.30	4.66	2.59	3.61	3.84	0.97	3.22	0.63	20.00	36.22	37.78
2000	0.97	1.23	1.04	1.56	3.54	3.64	6.43	3.75	2.55	0.97	4.06	1.35	19.91	31.09	26.50
1999	1.34	0.35	1.75	3.40	5.94	5.57	4.87	3.88	2.40	0.63	0.80	0.36	22.66	31.29	34.89
1998	1.31	0.85	3.94	2.30	4.17	4.40	2.92	5.23	1.33	2.88	1.82	0.69	18.05	31.84	29.44
1997	1.79	0.23	1.40	1.13	1.85	2.95	10.93	4.39	2.61	1.98	0.75	0.26	22.73	30.27	38.08

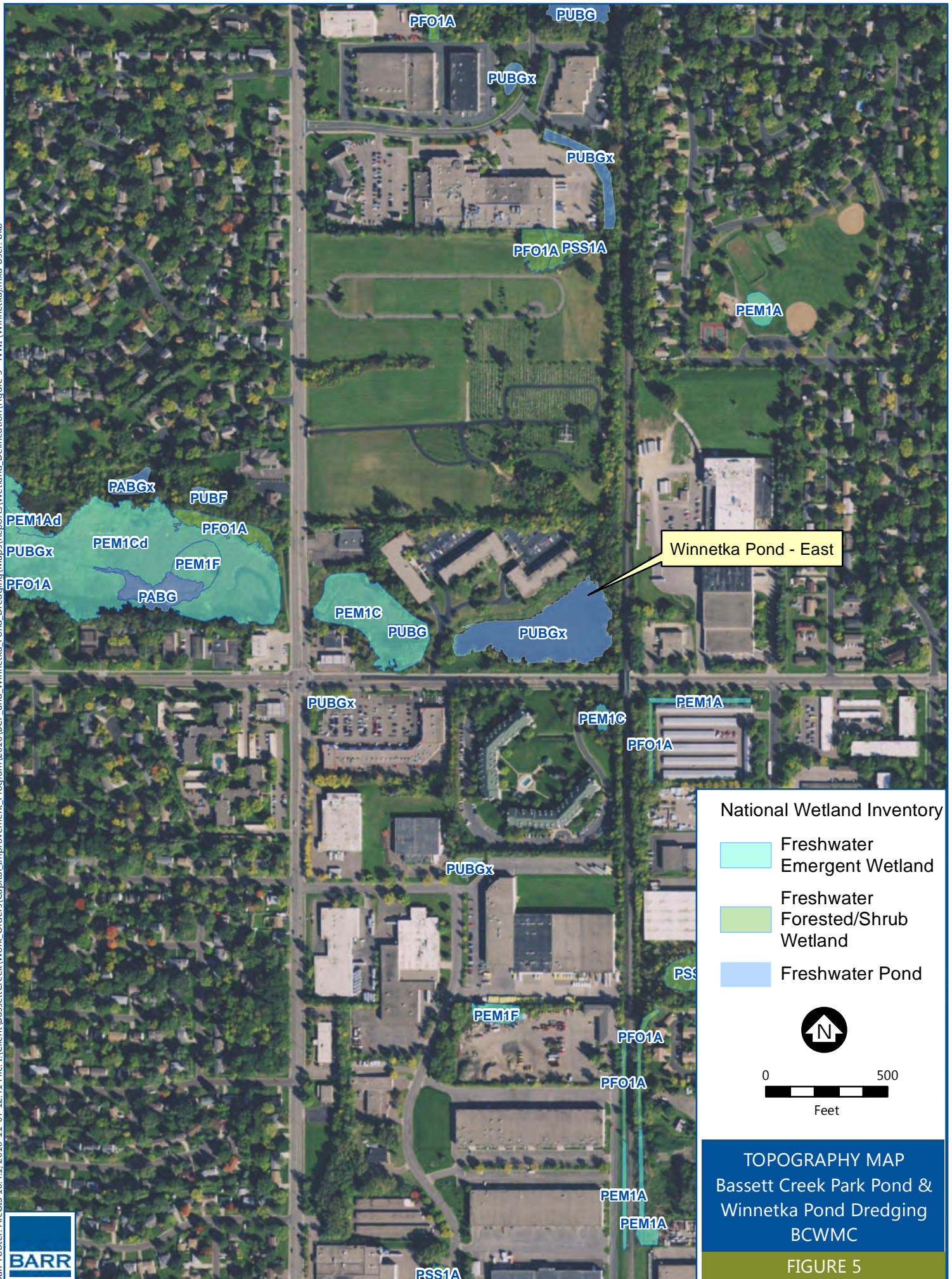
Figures





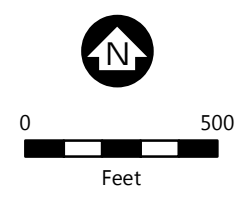






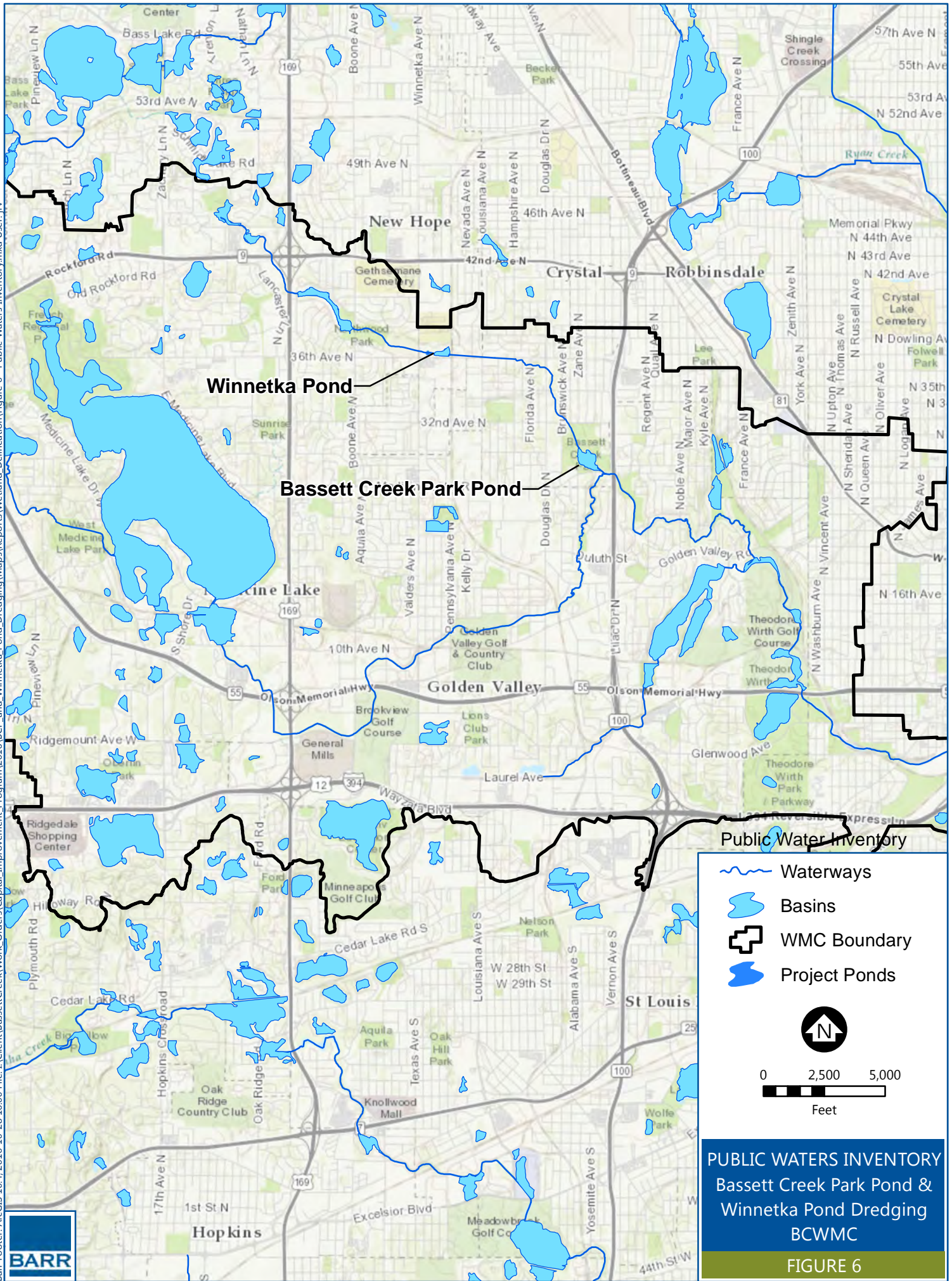
National Wetland Inventory

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

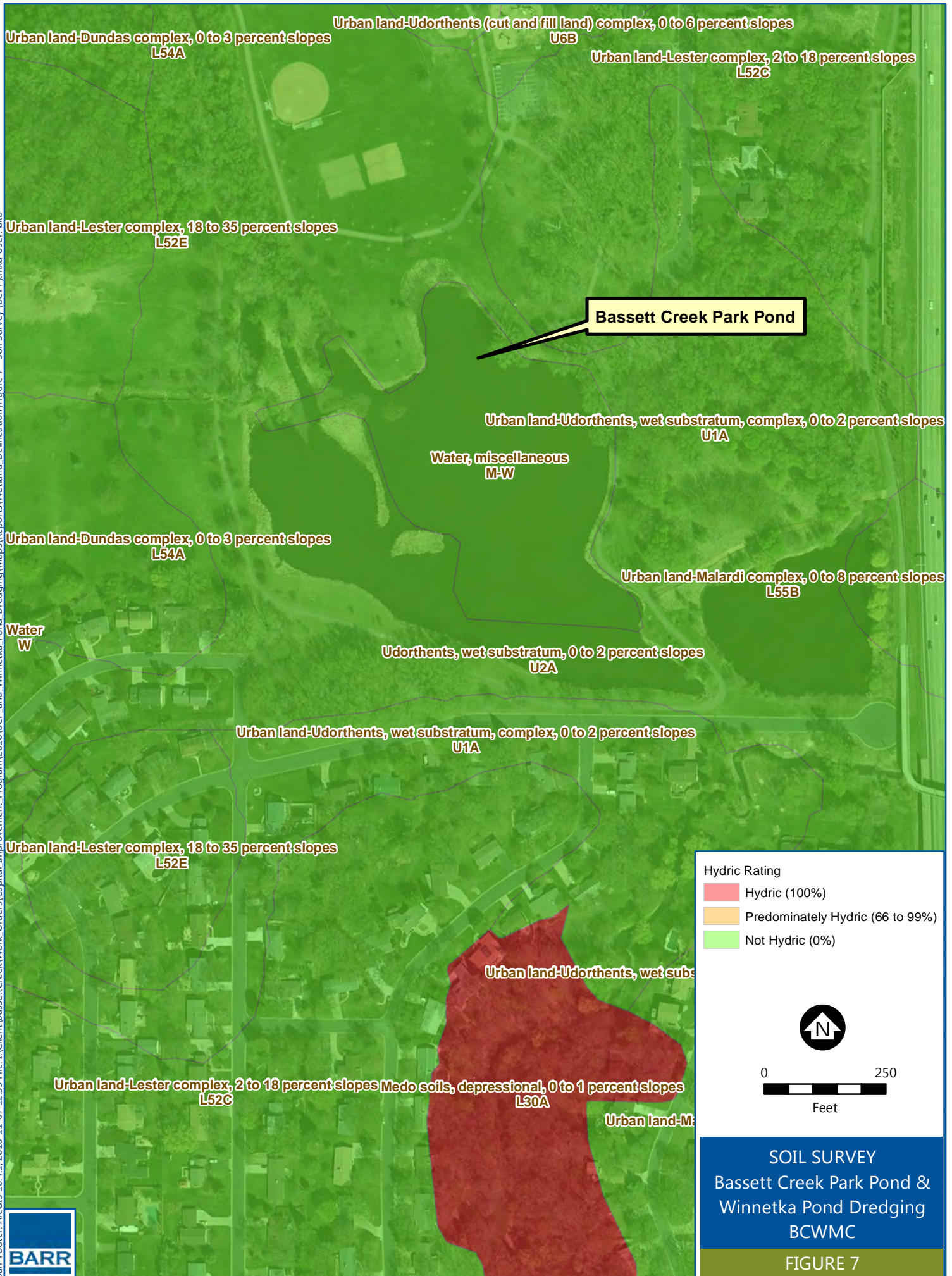


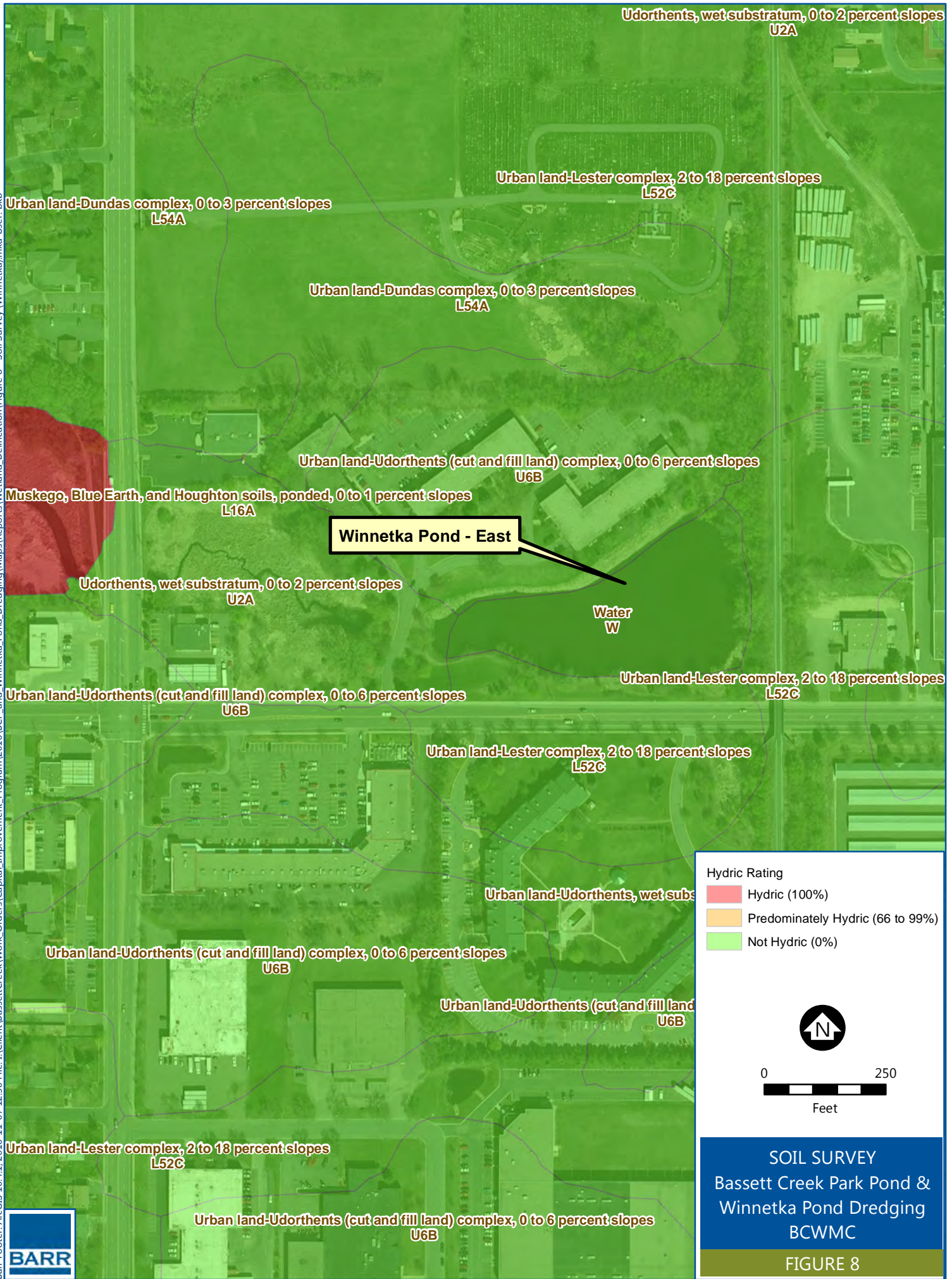
TOPOGRAPHY MAP
Bassett Creek Park Pond &
Winnetka Pond Dredging
BCWMC

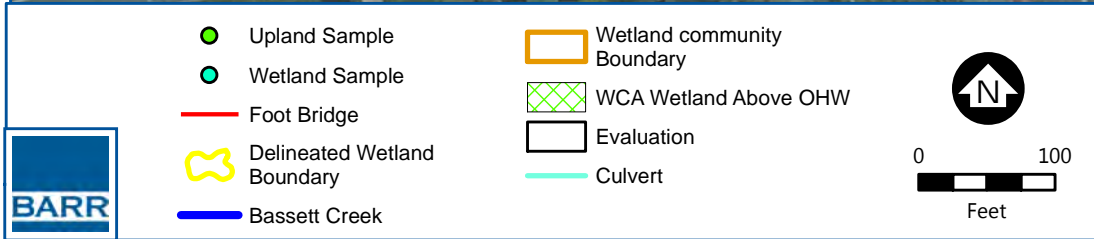
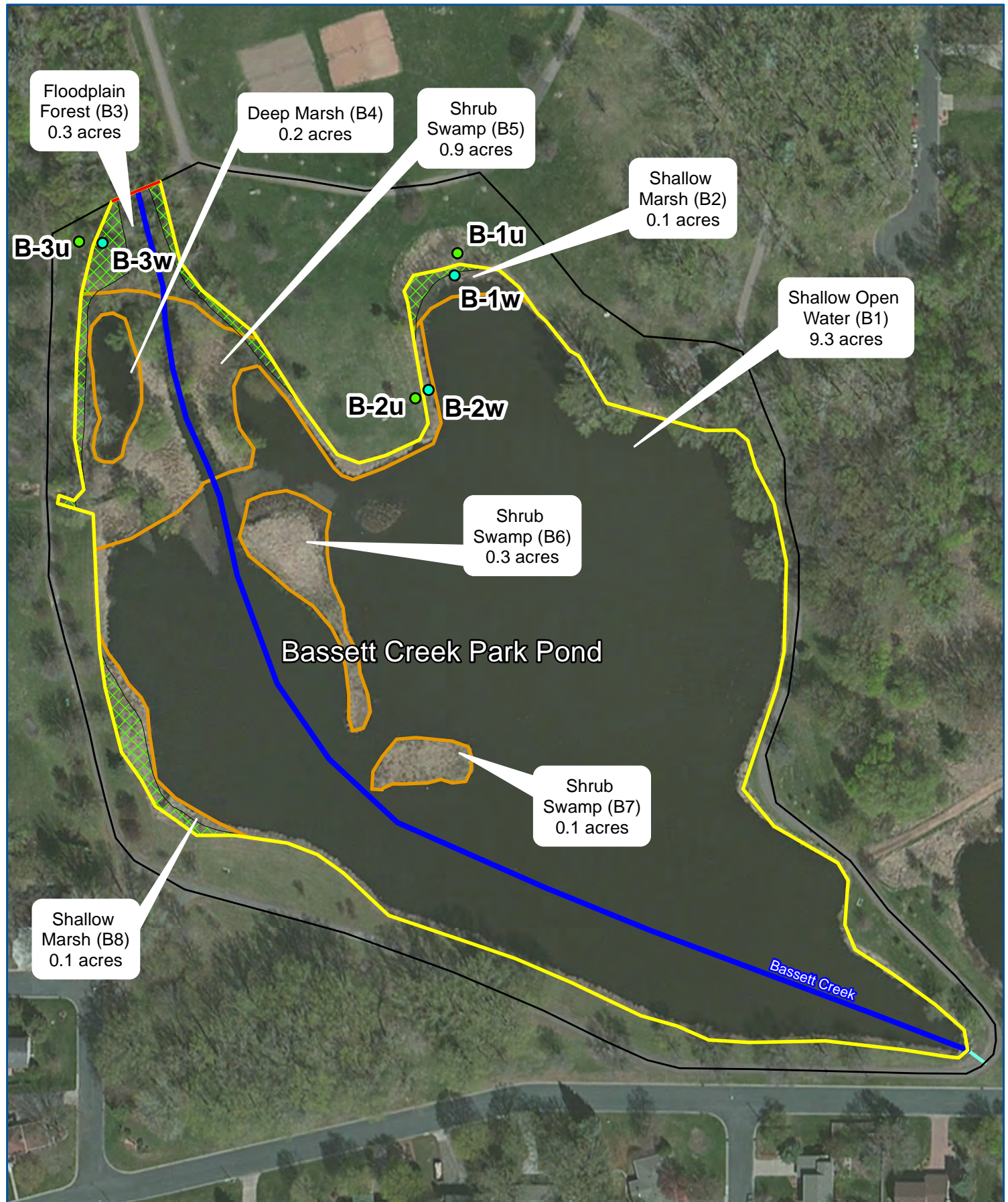
FIGURE 5



PUBLIC WATERS INVENTORY
Bassett Creek Park Pond &
Winnetka Pond Dredging
BCWMC
FIGURE 6

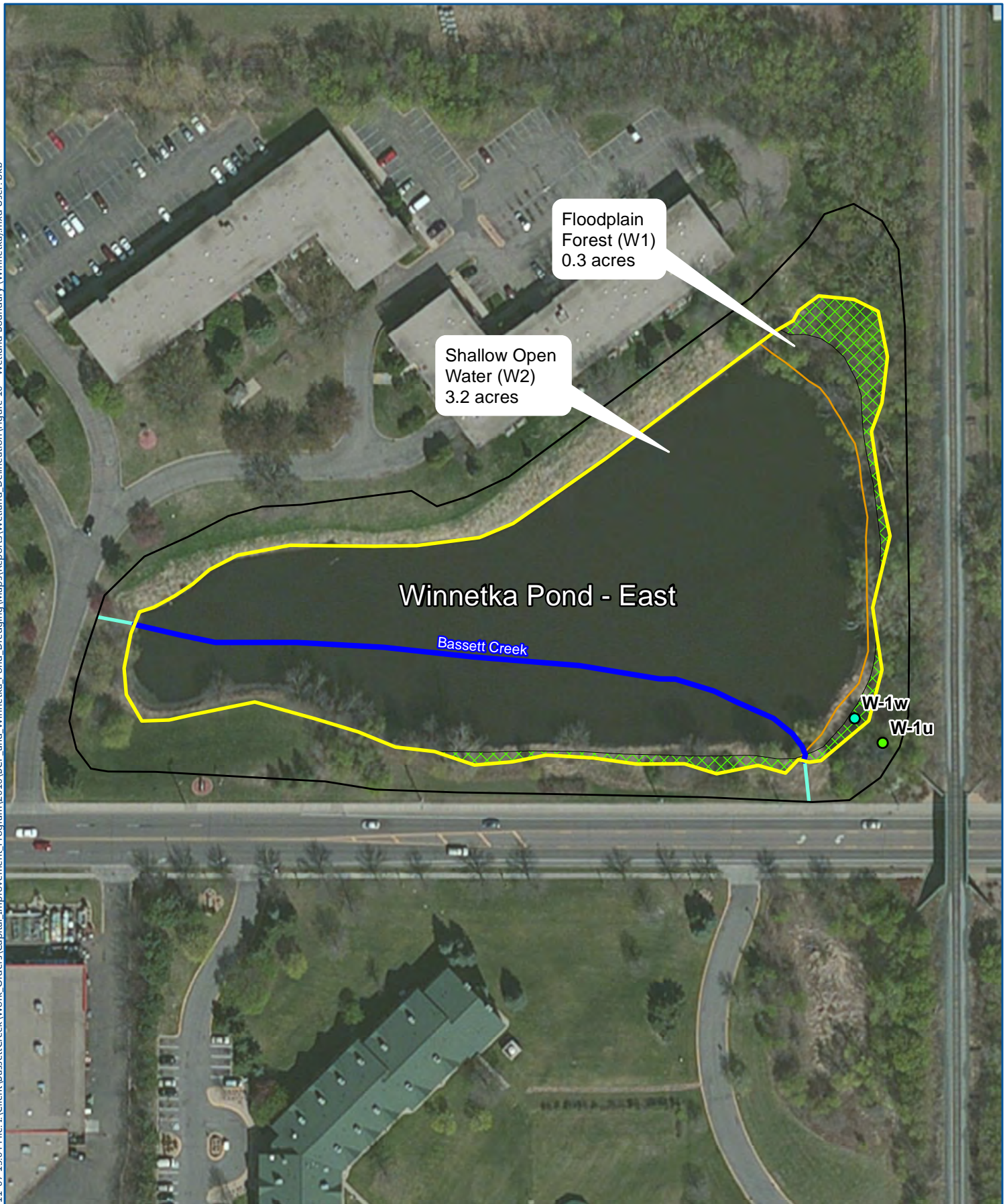












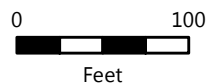


DELINEATED WETLAND
 Bassett Creek Park Pond &
 Winnetka Pond Dredging
 BCWMC

FIGURE 9



- | | |
|---|--|
|  Upland Sample |  Wetland Community Boundary |
|  Wetland Sample |  WCA Wetland Above OHW |
|  Delineated Wetland Boundary |  Evaluation Area |
|  Bassett Creek |  Culvert |



DELINEATED WETLAND
Bassett Creek Park Pond &
Winnetka Pond Dredging
BCWMC

FIGURE 10

Appendix A

Wetland Data Forms

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Bassett Creek Park Pond & Winnetka Pond (East) Applicant/Owner: BCWMC City/County: Crystal/Hennepin State: MN Sampling Date: 10/11/16
 Investigator(s): BKB Section: 21 Township: 118N Range: 21W Sampling Point: B-1u
 Land Form: Hillslope Local Relief: Convex Slope %: 7 Soil Map Unit Name: Udorthents, wet sub. 0-2% slopes
 Subregion (LRR): M Latitude: 4984296 Longitude: 472147 Datum: UTM Nad 83 Zone 15N
 Cowardin Classification: Upland Circular 39 Classification: Upland Mapped NWI Classification: Upland
 Are climatic/hydrologic conditions on the site typical for this time of year? No (If no, explain in remarks) Eggers & Reed (primary): Upland
 Are vegetation No Soil No Hydrology No significantly disturbed? Are "normal circumstances" present? Yes Eggers & Reed (secondary):
 Are vegetation No Soil No Hydrology No naturally problematic? Eggers & Reed (tertiary):
 Eggers & Reed (quaternary):

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

Hydrophytic vegetation present?	<u>Yes</u>	General Remarks (explain any answers if needed):	Conditions are wetter than normal within the three months prior to the site visit.
Hydric soil present?	<u>No</u>		
Indicators of wetland hydrology present?	<u>No</u>		
Is the sampled area within a wetland?	<u>No</u>	If yes, optional Wetland Site ID: <u>Upland</u>	

VEGETATION

Tree Stratum	(Plot Size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.		0		
2.		0		
3.		0		
4.		0		
Total Cover:		0		
<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15 ft</u>)				
1.		0		
2.		0		
3.		0		
4.		0		
5.		0		
Total Cover:		0		
<u>Herb Stratum</u> (Plot Size: <u>5 ft</u>)				
1.	Alliaria petiolata	35	Yes	FAC
2.	Urtica dioica	25	Yes	FACW
3.	Cirsium arvense	20	Yes	FACU
4.	Parthenocissus quinquefolia	10	No	FACU
5.	Taraxacum officinale	1	No	FACU
6.	Arctium minus	1	No	FACU
7.		0		
8.		0		
Total Cover:		92		
<u>Woody Vine Stratum</u> (Plot Size: <u>30 ft</u>)				
1.	Vitis riparia	5	Yes	FACW
2.		0		
Total Cover:		5		

50/20 Thresholds:	<u>20%</u>	<u>50%</u>
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	18.4	46
Woody Vine Stratum	1	2.5

Dominance Test Worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW or FAC: 75.00% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	X 1	0
FACW Species	30	X 2	60
FAC Species	35	X 3	105
FACU Species	32	X 4	128
UPL Species	0	X 5	0
Column Totals:	97	(A)	293 (B)
Prevalence Index = B/A =			3.02

Hydrophytic Vegetation Indicators:

No Rapid Test for Hydrophytic Vegetation

Yes Dominance Test is >50%

No Prevalence Index ≤ 3.0 [1]

No Morphological Adaptations [1] (provide supporting data in vegetation remarks or on a separate sheet)

No Problematic Hydrophytic Vegetation [1] (Explain)

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

Hydrophytic vegetation present? Yes

% Bare Ground in Herb Stratum: _____ % Sphagnum Moss Cover: _____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

SOIL

Sampling Point:

B-1u

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

	Depth (inches)	Matrix		Redox Features				Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type [1]	Loc [2]		
1.	0 - 10	10YR 3/2	98	10YR 4/3	2	C	M	Sandy Loam	
2.	10 - 16	10YR 3/1	100						
3.	16 - 25	10YR 3/1	100					Sand	gravelly
4.	-								
5.	-								
6.	-								

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if present):	Type: _____	Depth (inches): _____	Hydric soil present?	<u>No</u>
Soil Remarks:				

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (explain in remarks)
	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:	Indicators of wetland hydrology present? <u>No</u>
Surface water present?	Describe Recorded Data:
Water table present?	
Saturation present? (includes capillary fringe)	
<input type="checkbox"/> Surface Water Depth (inches): _____ <input type="checkbox"/> Water Table Depth (inches): _____ <input checked="" type="checkbox"/> Saturation Depth (inches): <u>15</u>	
Recorded Data: <input type="checkbox"/> Aerial Photo <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Stream Gauge <input type="checkbox"/> Previous Inspections	
Hydrology Remarks:	

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WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Bassett Creek Park Pond & Winnetka Pond (East) Applicant/Owner: BCWMC City/County: Crystal/Hennepin State: MN Sampling Date: 10/11/16

Investigator(s): BKB Section: 21 Township: 118N Range: 21W Sampling Point: B-1w

Land Form: Toeslope Local Relief: Concave Slope %: 1 Soil Map Unit Name: Udorthents, wet sub, 0-2% slopes

Subregion (LRR): M Latitude: 4984289 Longitude: 472146 Datum: UTM Nad 83 Zone 15N

Cowardin Classification: PEMC Circular 39 Classification: Type 3 Mapped NWI Classification: PUBG

Are climatic/hydrologic conditions on the site typical for this time of year? No (If no, explain in remarks) Eggers & Reed (primary): Shallow Marsh

Are vegetation No Soil No Hydrology No significantly disturbed? Are "normal circumstances" present? Yes Eggers & Reed (secondary):

Are vegetation No Soil No Hydrology No naturally problematic? Eggers & Reed (tertiary):

Eggers & Reed (quaternary):

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

Hydrophytic vegetation present?	<u>Yes</u>	General Remarks (explain any answers if needed): Conditions are wetter than normal within the three months prior to the site visit.
Hydric soil present?	<u>Yes</u>	
Indicators of wetland hydrology present?	<u>Yes</u>	
Is the sampled area within a wetland?	<u>Yes</u>	
If yes, optional Wetland Site ID: <u>Bassett Cr Park Pond</u>		

VEGETATION

Tree Stratum	(Plot Size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.		0		
2.		0		
3.		0		
4.		0		
Total Cover:		0		
Sapling/Shrub Stratum	(Plot Size: <u>15 ft</u>)			
1.		0		
2.		0		
3.		0		
4.		0		
5.		0		
Total Cover:		0		
Herb Stratum	(Plot Size: <u>5 ft</u>)			
1.	Typha angustifolia	20	Yes	OBL
2.	Urtica dioica	15	Yes	FACW
3.	Poa palustris	15	Yes	FACW
4.	Phalaris arundinacea	10	No	FACW
5.	Cirsium arvense	10	No	FACU
6.	Lemna minor	10	No	OBL
7.	Alliaria petiolata	5	No	FAC
8.		0		
Total Cover:		85		
Woody Vine Stratum	(Plot Size: <u>30 ft</u>)			
1.	Vitis riparia	15	Yes	FACW
2.		0		
Total Cover:		15		

50/20 Thresholds:	20%	50%
Tree Stratum	0	0
Sapling/Shrub Stratum	0	0
Herb Stratum	17	42.5
Woody Vine Stratum	3	7.5

Dominance Test Worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW or FAC: 100.00% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL Species	30	X 1	30
FACW Species	55	X 2	110
FAC Species	5	X 3	15
FACU Species	10	X 4	40
UPL Species	0	X 5	0
Column Totals:	100	(A)	195 (B)
Prevalence Index = B/A =			1.95

Hydrophytic Vegetation Indicators:

No Rapid Test for Hydrophytic Vegetation

Yes Dominance Test is >50%

Yes Prevalence Index ≤ 3.0 [1]

No Morphological Adaptations [1] (provide supporting data in vegetation remarks or on a separate sheet)

No Problematic Hydrophytic Vegetation [1] (Explain)

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

Hydrophytic vegetation present? Yes

% Bare Ground in Herb Stratum: % Sphagnum Moss Cover:

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

WETLAND DETERMINATION DATA FORM - Midwest Region

SOIL

Sampling Point:

B-1w

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

	Depth (inches)	Matrix		Redox Features				Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type [1]	Loc [2]		
1.	0 - 8	10YR 2/1	98	10YR 4/3	2	C	M	Sandy Loam	mucky
2.	8 - 20	N 2.5/0	100					Silt Loam	peat intermixed
3.	20 - 30	10YR 3/1	100					Silt Loam	shells present
4.	-								
5.	-								
6.	-								

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☒ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if present):	Type: _____	Depth (inches): _____	Hydric soil present? <u>Yes</u>
Soil Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:	Indicators of wetland hydrology present? <u>Yes</u>
Surface water present? <input type="checkbox"/>	Describe Recorded Data:
Water table present? <input checked="" type="checkbox"/>	
Saturation present? (includes capillary fringe) <input checked="" type="checkbox"/>	
Recorded Data: <input type="checkbox"/> Aerial Photo <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Stream Gauge <input type="checkbox"/> Previous Inspections	
Hydrology Remarks:	

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WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Bassett Creek Park Pond & Winnetka Pond (East) Applicant/Owner: BCWMC City/County: Crystal/Hennepin State: MN Sampling Date: 10/11/16

Investigator(s): BKB Section: 21 Township: 118N Range: 21W Sampling Point: B-2u

Land Form: Summit Local Relief: None Slope %: 3 Soil Map Unit Name: Udorthents, wet sub, 0-2% slopes

Subregion (LRR): M Latitude: 4984248 Longitude: 472133 Datum: UTM Nad 83 Zone 15N

Cowardin Classification: Upland Circular 39 Classification: Upland Mapped NWI Classification: Upland

Are climatic/hydrologic conditions on the site typical for this time of year? No (If no, explain in remarks) Eggers & Reed (primary): Upland

Are vegetation No Soil No Hydrology No significantly disturbed? Are "normal circumstances" present? Yes Eggers & Reed (secondary):

Are vegetation No Soil No Hydrology No naturally problematic? Eggers & Reed (tertiary):

Eggers & Reed (quaternary):

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

Hydrophytic vegetation present?	<u>No</u>	General Remarks (explain any answers if needed):	Conditions are wetter than normal within the three months prior to the site visit.
Hydric soil present?	<u>No</u>		
Indicators of wetland hydrology present?	<u>No</u>		
Is the sampled area within a wetland?	<u>No</u>	If yes, optional Wetland Site ID: <u>Upland</u>	

VEGETATION

	<u>Tree Stratum</u> (Plot Size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>
1.		0		
2.		0		
3.		0		
4.		0		
Total Cover:		0		
<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15 ft</u>)				
1.	Salix interior	1	No	FACW
2.		0		
3.		0		
4.		0		
5.		0		
Total Cover:		1		
<u>Herb Stratum</u> (Plot Size: <u>5 ft</u>)				
1.	Glechoma hederacea	70	Yes	FACU
2.	Poa pratensis	30	Yes	FAC
3.		0		
4.		0		
5.		0		
6.		0		
7.		0		
8.		0		
Total Cover:		100		
<u>Woody Vine Stratum</u> (Plot Size: <u>30 ft</u>)				
1.				
2.		0		
Total Cover:				

% Bare Ground in Herb Stratum: _____ % Sphagnum Moss Cover: _____

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

<u>50/20 Thresholds:</u>		<u>20%</u>	<u>50%</u>
Tree Stratum	0	0	
Sapling/Shrub Stratum	0.2	0.5	
Herb Stratum	20	50	
Woody Vine Stratum	_____	_____	
<u>Dominance Test Worksheet:</u>			
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:	50.00%	(A/B)	
<u>Prevalence Index Worksheet:</u>			
Total % Cover of:		Multiply by:	
OBL Species	0	X 1	0
FACW Species	1	X 2	2
FAC Species	30	X 3	90
FACU Species	70	X 4	280
UPL Species	0	X 5	0
Column Totals:	101	(A)	372 (B)
Prevalence Index = B/A =			3.68
<u>Hydrophytic Vegetation Indicators:</u>			
No	Rapid Test for Hydrophytic Vegetation		
No	Dominance Test is >50%		
No	Prevalence Index ≤ 3.0 [1]		
No	Morphological Adaptations [1] (provide supporting data in vegetation remarks or on a separate sheet)		
No	Problematic Hydrophytic Vegetation [1] (Explain)		
[1] Indicators of hydric soil & wetland hydrology must be present, unless disturbed or problematic.			
Hydrophytic vegetation present?			<u>No</u>

WETLAND DETERMINATION DATA FORM - Midwest Region

SOIL

Sampling Point:

B-2u

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

	Depth (inches)	Matrix		Redox Features				Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type [1]	Loc [2]		
1.	0 - 10	N 2.5/0	100					Silt Loam	
2.	10 - 24	N 2.5/0	98	10YR 3/3	2	C	M	Silt Loam	Peat intermixed
3.	-								
4.	-								
5.	-								
6.	-								

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if present):	Type: _____	Depth (inches): _____	Hydric soil present?	<u>No</u>
Soil Remarks:				

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (explain in remarks)	
Field Observations:		Indicators of wetland hydrology present? <u>No</u>
Surface water present?	<input type="checkbox"/> Surface Water Depth (inches): _____	Describe Recorded Data:
Water table present?	<input type="checkbox"/> Water Table Depth (inches): _____	
Saturation present? (includes capillary fringe)	<input type="checkbox"/> Saturation Depth (inches): _____	
Recorded Data: <input type="checkbox"/> Aerial Photo <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Stream Gauge <input type="checkbox"/> Previous Inspections		
Hydrology Remarks:		

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WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Bassett Creek Park Pond & Winnetka Pond (East) Applicant/Owner: BCWMC City/County: Crystal/Hennepin State: MN Sampling Date: 10/11/16

Investigator(s): BKB Section: 21 Township: 118N Range: 21W Sampling Point: B-2w

Land Form: Footslope Local Relief: Concave Slope %: 1 Soil Map Unit Name: Udorthents, wet sub, 0-2% slopes

Subregion (LRR): M Latitude: 4984251 Longitude: 472137 Datum: UTM Nad 83 Zone 15N

Cowardin Classification: PSS1A Circular 39 Classification: Type 6 Mapped NWI Classification: Upland

Are climatic/hydrologic conditions on the site typical for this time of year? No (If no, explain in remarks) Eggers & Reed (primary): Shrub-Carr

Are vegetation No Soil No Hydrology No significantly disturbed? Are "normal circumstances" present? Yes Eggers & Reed (secondary):

Are vegetation No Soil No Hydrology No naturally problematic? Eggers & Reed (tertiary):

Eggers & Reed (quaternary):

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

Hydrophytic vegetation present?	<u>Yes</u>	General Remarks (explain any answers if needed):	Conditions are wetter than normal within the three months prior to the site visit.
Hydric soil present?	<u>Yes</u>		
Indicators of wetland hydrology present?	<u>Yes</u>		
Is the sampled area within a wetland?	<u>Yes</u>	If yes, optional Wetland Site ID: <u>Bassett Cr Park Pond</u>	

VEGETATION

Tree Stratum	(Plot Size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.		0		
2.		0		
3.		0		
4.		0		
Total Cover:		0		
<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15 ft</u>)				
1.	Salix interior	15	Yes	FACW
2.		0		
3.		0		
4.		0		
5.		0		
Total Cover:		15		
<u>Herb Stratum</u> (Plot Size: <u>5 ft</u>)				
1.	Phalaris arundinacea	40	Yes	FACW
2.	Persicaria amphibia	20	Yes	OBL
3.	Solidago gigantea	20	Yes	FACW
4.	Urtica dioica	10	No	FACW
5.	Geranium maculatum	10	No	FACU
6.	Alliaria petiolata	5	No	FAC
7.		0		
8.		0		
Total Cover:		105		
<u>Woody Vine Stratum</u> (Plot Size: <u>30 ft</u>)				
1.		0		
2.		0		
Total Cover:		0		

% Bare Ground in Herb Stratum: _____ % Sphagnum Moss Cover: _____

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

<u>50/20 Thresholds:</u>		<u>20%</u>	<u>50%</u>
Tree Stratum	0	0	
Sapling/Shrub Stratum	3	7.5	
Herb Stratum	21	52.5	
Woody Vine Stratum	0	0	
<u>Dominance Test Worksheet:</u>			
Number of Dominant Species That Are OBL, FACW or FAC:	4	(A)	
Total Number of Dominant Species Across All Strata:	4	(B)	
Percent of Dominant Species That Are OBL, FACW or FAC:	100.00%	(A/B)	
<u>Prevalence Index Worksheet:</u>			
Total % Cover of:		Multiply by:	
OBL Species	20	X 1	20
FACW Species	85	X 2	170
FAC Species	5	X 3	15
FACU Species	10	X 4	40
UPL Species	0	X 5	0
Column Totals:	120	(A)	245 (B)
Prevalence Index = B/A =		2.04	
<u>Hydrophytic Vegetation Indicators:</u>			
No	Rapid Test for Hydrophytic Vegetation		
Yes	Dominance Test is >50%		
Yes	Prevalence Index ≤ 3.0 [1]		
No	Morphological Adaptations [1] (provide supporting data in vegetation remarks or on a separate sheet)		
No	Problematic Hydrophytic Vegetation [1] (Explain)		
[1] Indicators of hydric soil & wetland hydrology must be present, unless disturbed or problematic.			
Hydrophytic vegetation present?	<u>Yes</u>		

WETLAND DETERMINATION DATA FORM - Midwest Region

SOIL

Sampling Point:

B-2w

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

	Depth (inches)	Matrix		Redox Features				Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type [1]	Loc [2]		
1.	0 - 8	N 2.5/0						Silt Loam	
2.	8 - 15	N 2.5/0	98	10YR 3/3	2	C	M	Silt Loam	Peat intermixed
3.	15 - 30	N 2.5/0							Peat
4.	-								
5.	-								
6.	-								

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if present):	Type: _____	Depth (inches): _____	Hydric soil present? <u>Yes</u>
Soil Remarks:			

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)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (explain in remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

- Surface water present? ☐ Surface Water Depth (inches): _____
- Water table present? ☐ Water Table Depth (inches): _____
- Saturation present? (includes capillary fringe) ☒ Saturation Depth (inches): 6

Indicators of wetland hydrology present? Yes

Describe Recorded Data:

Recorded Data: ☐ Aerial Photo ☐ Monitoring Well ☐ Stream Gauge ☐ Previous Inspections

Hydrology Remarks:

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WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Bassett Creek Park Pond & Winnetka Pond (East) Applicant/Owner: BCWMC City/County: Crystal/Hennepin State: MN Sampling Date: 10/11/16

Investigator(s): BKB Section: 21 Township: 118N Range: 21W Sampling Point: B-3u

Land Form: Hillslope Local Relief: Concave Slope %: 2 Soil Map Unit Name: Udorthents, wet sub, 0-2% slopes

Subregion (LRR): M Latitude: 4984301 Longitude: 472021 Datum: UTM Nad 83 Zone 15N

Cowardin Classification: Upland Circular 39 Classification: Upland Mapped NWI Classification: Upland

Are climatic/hydrologic conditions on the site typical for this time of year? No (If no, explain in remarks) Eggers & Reed (primary): Upland

Are vegetation No Soil No Hydrology No significantly disturbed? Are "normal circumstances" present? Yes Eggers & Reed (secondary):

Are vegetation No Soil No Hydrology No naturally problematic? Eggers & Reed (tertiary):

Eggers & Reed (quaternary):

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

Hydrophytic vegetation present?	<u>Yes</u>	General Remarks (explain any answers if needed):	Conditions are wetter than normal within the three months prior to the site visit.
Hydric soil present?	<u>No</u>		
Indicators of wetland hydrology present?	<u>No</u>		
Is the sampled area within a wetland?	<u>No</u>	If yes, optional Wetland Site ID: <u>Upland</u>	

VEGETATION

	<u>Tree Stratum</u> (Plot Size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>
1.	Acer negundo	10	Yes	FAC
2.	Populus tremuloides	10	Yes	FAC
3.		0		
4.		0		
Total Cover:		20		
	<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15 ft</u>)			
1.		0		
2.		0		
3.		0		
4.		0		
5.		0		
Total Cover:		0		
	<u>Herb Stratum</u> (Plot Size: <u>5 ft</u>)			
1.	Glechoma hederacea	65	Yes	FACU
2.	Taraxacum officinale	5	No	FACU
3.	Poa pratensis	5	No	FAC
4.	Parthenocissus quinquefolia	5	No	FACU
5.		0		
6.		0		
7.		0		
8.		0		
Total Cover:		80		
	<u>Woody Vine Stratum</u> (Plot Size: <u>30 ft</u>)			
1.		0		
2.		0		
Total Cover:		0		

% Bare Ground in Herb Stratum: _____ % Sphagnum Moss Cover: _____

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

50/20 Thresholds:	20%	50%
Tree Stratum	4	10
Sapling/Shrub Stratum	0	0
Herb Stratum	16	40
Woody Vine Stratum	0	0

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: 66.67% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL Species	0	X 1	0
FACW Species	0	X 2	0
FAC Species	25	X 3	75
FACU Species	75	X 4	300
UPL Species	0	X 5	0
Column Totals:	100	(A)	375 (B)
Prevalence Index = B/A =			3.75

Hydrophytic Vegetation Indicators:

No Rapid Test for Hydrophytic Vegetation

Yes Dominance Test is >50%

No Prevalence Index ≤ 3.0 [1]

No Morphological Adaptations [1] (provide supporting data in vegetation remarks or on a separate sheet)

No Problematic Hydrophytic Vegetation [1] (Explain)

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

Hydrophytic vegetation present? Yes

WETLAND DETERMINATION DATA FORM - Midwest Region

SOIL

Sampling Point:

B-3u

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

	Depth (inches)	Matrix		Redox Features				Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type [1]	Loc [2]		
1.	0 - 15	N 2.5/0						Silt Loam	
2.	15 - 30	N 2.5/0	95	10YR 3/3	5	C	M	Silt Loam	
3.	-								
4.	-								
5.	-								
6.	-								

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if present):	Type: _____	Depth (inches): _____	Hydric soil present?	<u>No</u>
Soil Remarks:				

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (explain in remarks)	
Field Observations:		Indicators of wetland hydrology present? <u>No</u>
Surface water present?	<input type="checkbox"/> Surface Water Depth (inches): _____	Describe Recorded Data:
Water table present?	<input type="checkbox"/> Water Table Depth (inches): _____	
Saturation present? (includes capillary fringe)	<input type="checkbox"/> Saturation Depth (inches): _____	
Recorded Data: <input type="checkbox"/> Aerial Photo <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Stream Gauge <input type="checkbox"/> Previous Inspections		
Hydrology Remarks:		

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WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Bassett Creek Park Pond & Winnetka Pond (East) Applicant/Owner: BCWMC City/County: Crystal/Hennepin State: MN Sampling Date: 10/11/16

Investigator(s): BKB Section: 21 Township: 118N Range: 21W Sampling Point: B-3w

Land Form: Toeslope Local Relief: Concave Slope %: 4 Soil Map Unit Name: Udorthents, wet sub, 0-2% slopes

Subregion (LRR): M Latitude: 4984300 Longitude: 472029 Datum: UTM Nad 83 Zone 15N

Cowardin Classification: PEO1A Circular 39 Classification: Type 1L Mapped NWI Classification: Upland

Are climatic/hydrologic conditions on the site typical for this time of year? No (If no, explain in remarks) Eggers & Reed (primary): Floodplain Forest

Are vegetation No Soil No Hydrology No significantly disturbed? Are "normal circumstances" present? Yes Eggers & Reed (secondary):

Are vegetation No Soil No Hydrology No naturally problematic? Eggers & Reed (tertiary):

Eggers & Reed (quaternary):

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

Hydrophytic vegetation present?	<u>Yes</u>	General Remarks (explain any answers if needed):	Conditions are wetter than normal within the three months prior to the site visit.
Hydric soil present?	<u>Yes</u>		
Indicators of wetland hydrology present?	<u>Yes</u>		
Is the sampled area within a wetland?	<u>Yes</u>	If yes, optional Wetland Site ID: <u>Bassett Cr Park Pond</u>	

VEGETATION

	<u>Tree Stratum</u> (Plot Size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>
1.	Populus deltoides	10	Yes	FAC
2.	Populus tremuloides	5	Yes	FAC
3.	Acer negundo	5	Yes	FAC
4.		0		
Total Cover:		20		
	<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15 ft</u>)			
1.		0		
2.		0		
3.		0		
4.		0		
5.		0		
Total Cover:		0		
	<u>Herb Stratum</u> (Plot Size: <u>5 ft</u>)			
1.	Phalaris arundinacea	75	Yes	FACW
2.	Urtica dioica	20	Yes	FACW
3.	Parthenocissus quinquefolia	5	No	FACU
4.		0		
5.		0		
6.		0		
7.		0		
8.		0		
Total Cover:		100		
	<u>Woody Vine Stratum</u> (Plot Size: <u>30 ft</u>)			
1.		0		
2.		0		
Total Cover:		0		

% Bare Ground in Herb Stratum: _____ % Sphagnum Moss Cover: _____

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

<u>50/20 Thresholds:</u>		<u>20%</u>	<u>50%</u>
Tree Stratum		4	10
Sapling/Shrub Stratum		0	0
Herb Stratum		20	50
Woody Vine Stratum		0	0
<u>Dominance Test Worksheet:</u>			
Number of Dominant Species That Are OBL, FACW or FAC:		5	(A)
Total Number of Dominant Species Across All Strata:		5	(B)
Percent of Dominant Species That Are OBL, FACW or FAC:		100.00%	(A/B)
<u>Prevalence Index Worksheet:</u>			
Total % Cover of:		Multiply by:	
OBL Species	0	X 1	0
FACW Species	95	X 2	190
FAC Species	20	X 3	60
FACU Species	5	X 4	20
UPL Species	0	X 5	0
Column Totals:	120	(A)	270 (B)
Prevalence Index = B/A =		2.25	
<u>Hydrophytic Vegetation Indicators:</u>			
No	Rapid Test for Hydrophytic Vegetation		
Yes	Dominance Test is >50%		
Yes	Prevalence Index ≤ 3.0 [1]		
No	Morphological Adaptations [1] (provide supporting data in vegetation remarks or on a separate sheet)		
No	Problematic Hydrophytic Vegetation [1] (Explain)		
[1] Indicators of hydric soil & wetland hydrology must be present, unless disturbed or problematic.			
Hydrophytic vegetation present?	<u>Yes</u>		

WETLAND DETERMINATION DATA FORM - Midwest Region

SOIL

Sampling Point:

B-3W

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

	Depth (inches)	Matrix		Redox Features				Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type [1]	Loc [2]		
1.	0 - 7	N 2.5/0	100					Silt Loam	
2.	7 - 40	N 2.5/0	95	10YR 3/3	5	C	M	Silt Loam	
3.	-								
4.	-								
5.	-								
6.	-								

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if present):	Type: _____	Depth (inches): _____	Hydric soil present? <u>Yes</u>
Soil Remarks:			

HYDROLOGY

Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:	Indicators of wetland hydrology present? <u>Yes</u>
Surface water present? <input type="checkbox"/>	Describe Recorded Data:
Water table present? <input type="checkbox"/>	
Saturation present? (includes capillary fringe) <input type="checkbox"/>	
Recorded Data: <input type="checkbox"/> Aerial Photo <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Stream Gauge <input type="checkbox"/> Previous Inspections	
Hydrology Remarks:	

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WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Bassett Creek Park Pond & Winnetka Pond (East) Applicant/Owner: BCWMC City/County: Crystal/Hennepin State: MN Sampling Date: 10/11/16

Investigator(s): BKB Section: 17 Township: 118N Range: 21W Sampling Point: W-1u

Land Form: Shoulder Local Relief: Convex Slope %: 18 Soil Map Unit Name: Urban land-Udorthents, wet sub, complex

Subregion (LRR): M Latitude: 4985483 Longitude: 470427 Datum: UTM Nad 83 Zone 15N

Cowardin Classification: Circular 39 Classification: Mapped NWI Classification: Upland

Are climatic/hydrologic conditions on the site typical for this time of year? No (If no, explain in remarks) Eggers & Reed (primary):

Are vegetation No Soil No Hydrology No significantly disturbed? Are "normal circumstances" present? Yes Eggers & Reed (secondary):

Are vegetation No Soil No Hydrology No naturally problematic? Eggers & Reed (tertiary):

Eggers & Reed (quaternary):

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

Hydrophytic vegetation present?	<u>Yes</u>	General Remarks (explain any answers if needed):	Conditions are wetter than normal within the three months prior to the site visit.
Hydric soil present?	<u>No</u>		
Indicators of wetland hydrology present?	<u>No</u>		
Is the sampled area within a wetland?	<u>No</u>	If yes, optional Wetland Site ID: <u>Upland</u>	

VEGETATION

	<u>Tree Stratum</u> (Plot Size: <u>30 ft</u>)	<u>Absolute % Cover</u>	<u>Dominant Species?</u>	<u>Indicator Status</u>
1.	Acer negundo	50	Yes	FAC
2.		0		
3.		0		
4.		0		
Total Cover:		50		
	<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15 ft</u>)			
1.	Rhamnus cathartica	40	Yes	FAC
2.		0		
3.		0		
4.		0		
5.		0		
Total Cover:		40		
	<u>Herb Stratum</u> (Plot Size: <u>5 ft</u>)			
1.	Glechoma hederacea	35	Yes	FACU
2.	Rhamnus cathartica	20	Yes	FAC
3.		0		
4.		0		
5.		0		
6.		0		
7.		0		
8.		0		
Total Cover:		55		
	<u>Woody Vine Stratum</u> (Plot Size: <u>30 ft</u>)			
1.		0		
2.		0		
Total Cover:		0		

<u>50/20 Thresholds:</u>	<u>20%</u>	<u>50%</u>
Tree Stratum	10	25
Sapling/Shrub Stratum	8	20
Herb Stratum	11	27.5
Woody Vine Stratum	0	0

<u>Dominance Test Worksheet:</u>		
Number of Dominant Species That Are OBL, FACW or FAC:	<u>3</u>	(A)
Total Number of Dominant Species Across All Strata:	<u>4</u>	(B)
Percent of Dominant Species That Are OBL, FACW or FAC:	<u>75.00%</u>	(A/B)

<u>Prevalence Index Worksheet:</u>		
Total % Cover of:	Multiply by:	
OBL Species <u>0</u>	<u>X 1</u>	<u>0</u>
FACW Species <u>0</u>	<u>X 2</u>	<u>0</u>
FAC Species <u>110</u>	<u>X 3</u>	<u>330</u>
FACU Species <u>35</u>	<u>X 4</u>	<u>140</u>
UPL Species <u>0</u>	<u>X 5</u>	<u>0</u>
Column Totals: <u>145</u>	<u>(A)</u>	<u>470</u> (B)
Prevalence Index = B/A =		<u>3.24</u>

<u>Hydrophytic Vegetation Indicators:</u>	
<u>No</u>	Rapid Test for Hydrophytic Vegetation
<u>Yes</u>	Dominance Test is >50%
<u>No</u>	Prevalence Index ≤ 3.0 [1]
<u>No</u>	Morphological Adaptations [1] (provide supporting data in vegetation remarks or on a separate sheet)
<u>No</u>	Problematic Hydrophytic Vegetation [1] (Explain)
[1] Indicators of hydric soil & wetland hydrology must be present, unless disturbed or problematic.	
Hydrophytic vegetation present?	<u>Yes</u>

% Bare Ground in Herb Stratum: _____ % Sphagnum Moss Cover: _____

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

WETLAND DETERMINATION DATA FORM - Midwest Region

SOIL

Sampling Point:

W-1u

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

	Depth (inches)	Matrix		Redox Features				Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type [1]	Loc [2]		
1.	0 - 6	10YR 2/1	100					Loam	
2.	6 - 18	10YR 5/3	100					Loamy Sand	
3.	18 - 24	10YR 3/1	98	10YR 3/3	2	C	M	Sandy Clay Loam	
4.	-								
5.	-								
6.	-								

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if present):	Type: _____	Depth (inches): _____	Hydric soil present?	<u>No</u>
Soil Remarks:				

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (explain in remarks)	
Field Observations:		Indicators of wetland hydrology present? <u>No</u>
Surface water present?	<input type="checkbox"/> Surface Water Depth (inches): _____	Describe Recorded Data:
Water table present?	<input type="checkbox"/> Water Table Depth (inches): _____	
Saturation present? (includes capillary fringe)	<input type="checkbox"/> Saturation Depth (inches): _____	
Recorded Data: <input type="checkbox"/> Aerial Photo <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Stream Gauge <input type="checkbox"/> Previous Inspections		
Hydrology Remarks:		

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WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Bassett Creek Park Pond & Winnetka Pond (East) Applicant/Owner: BCWMC City/County: Crystal/Hennepin State: MN Sampling Date: 10/11/16
 Investigator(s): BKB Section: 17 Township: 118N Range: 21W Sampling Point: W-1w
 Land Form: Footslope Local Relief: Concave Slope %: 8 Soil Map Unit Name: Water
 Subregion (LRR): M Latitude: 4985483 Longitude: 470427 Datum: UTM Nad 83 Zone 15N
 Cowardin Classification: PEO1A Circular 39 Classification: Type 1L Mapped NWI Classification: Upland
 Are climatic/hydrologic conditions on the site typical for this time of year? No (If no, explain in remarks) Eggers & Reed (primary): Floodplain Forest
 Are vegetation No Soil No Hydrology No significantly disturbed? Are "normal circumstances" present? Yes Eggers & Reed (secondary):
 Are vegetation No Soil No Hydrology No naturally problematic? Eggers & Reed (tertiary):
 Eggers & Reed (quaternary):

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

Hydrophytic vegetation present?	<u>Yes</u>	General Remarks (explain any answers if needed):	Conditions are wetter than normal within the three months prior to the site visit.
Hydric soil present?	<u>Yes</u>		
Indicators of wetland hydrology present?	<u>Yes</u>		
Is the sampled area within a wetland?	<u>Yes</u>	If yes, optional Wetland Site ID: <u>Winnetka Pond - East</u>	

VEGETATION

Tree Stratum	(Plot Size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.	Populus tremuloides	15	Yes	FAC
2.	Acer negundo	10	Yes	FAC
3.		0		
4.		0		
Total Cover:		25		
Sapling/Shrub Stratum	(Plot Size: <u>15 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.	Rhamnus cathartica	10	Yes	FAC
2.		0		
3.		0		
4.		0		
5.		0		
Total Cover:		10		
Herb Stratum	(Plot Size: <u>5 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.	Phalaris arundinacea	75	Yes	FACW
2.	Schoenoplectus fluviatilis	10	No	OBL
3.	Solidago canadensis	10	No	FACU
4.		0		
5.		0		
6.		0		
7.		0		
8.		0		
Total Cover:		95		
Woody Vine Stratum	(Plot Size: <u>30 ft</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1.		0		
2.		0		
Total Cover:		0		

% Bare Ground in Herb Stratum: _____ % Sphagnum Moss Cover: _____
 Vegetation Remarks: (include photo numbers here or on a separate sheet)

50/20 Thresholds:	20%	50%
Tree Stratum	5	12.5
Sapling/Shrub Stratum	2	5
Herb Stratum	19	47.5
Woody Vine Stratum	0	0

Dominance Test Worksheet:

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

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW or FAC: 100.00% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL Species	10	X 1	10
FACW Species	75	X 2	150
FAC Species	35	X 3	105
FACU Species	10	X 4	40
UPL Species	0	X 5	0
Column Totals:	130	(A)	305 (B)
Prevalence Index = B/A =			2.35

Hydrophytic Vegetation Indicators:

☐ No Rapid Test for Hydrophytic Vegetation
☒ Yes Dominance Test is >50%
☒ Yes Prevalence Index ≤ 3.0 [1]
☐ No Morphological Adaptations [1] (provide supporting data in vegetation remarks or on a separate sheet)
☐ No Problematic Hydrophytic Vegetation [1] (Explain)

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

Hydrophytic vegetation present? Yes

WETLAND DETERMINATION DATA FORM - Midwest Region

SOIL

Sampling Point:

W-1w

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

	Depth (inches)	Matrix		Redox Features				Texture	Remarks
		Color (moist)	%	Color (moist)	%	Type [1]	Loc [2]		
1.	0 - 10	10YR 3/1	96	10YR 4/3	2	C	M	Sandy Clay Loam	
2.	0 - 10			10YR 5/2	2	D	M		
3.	10 - 18	10YR 2/1	98	10YR 4/3	2	C	M	Sandy Clay	
4.	18 - 24	10Y 3/1	98	10YR 5/2	2	D	M	Sandy Clay	
5.	-								
6.	-								

[1] Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains [2] Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (applicable to all LRRs, unless otherwise noted)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils [3]:

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

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

Restrictive Layer (if present):	Type: _____	Depth (inches): _____	Hydric soil present? <u>Yes</u>
Soil Remarks:			

HYDROLOGY




Wetland Hydrology Indicators:	
Primary Indicators (minimum of one required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (explain in remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:	Indicators of wetland hydrology present? <u>Yes</u>
Surface water present? <input type="checkbox"/>	Describe Recorded Data:
Water table present? <input checked="" type="checkbox"/>	
Saturation present? (includes capillary fringe) <input checked="" type="checkbox"/>	
Surface Water Depth (inches): _____ Water Table Depth (inches): <u>9</u> Saturation Depth (inches): <u>2</u>	
Recorded Data: <input type="checkbox"/> Aerial Photo <input type="checkbox"/> Monitoring Well <input type="checkbox"/> Stream Gauge <input type="checkbox"/> Previous Inspections	
Hydrology Remarks:	

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Appendix B

Site Photographs

Appendix B – Bassett Creek Park Pond & Winnetka - East Wetland Delineation Site Photos

<p>Photo 1 – October 11, 2016</p> <p>Bassett Creek Park Pond</p> <p>General view of the shallow open water community of Bassett Creek Park Pond.</p>	 <p>2016/11/11 14:26 302' NAD 83 151' E: 472077.6 N: 494952.2</p>
<p>Photo 2 – October 11, 2016</p> <p>Bassett Creek Park Pond</p> <p>Shallow marsh fringe area located on the west side of the pond.</p>	 <p>2016/11/11 14:17 292' NAD 83 151' E: 472077.6 N: 494952.2</p>
<p>Photo 3 – October 11, 2016</p> <p>Bassett Creek Park Pond</p> <p>Excavated deep marsh community located on the northwest side of the basin within shrub swamp.</p>	 <p>2016/11/11 15:53 135' NAD 83 151' E: 472077.6 N: 494952.2</p>

Appendix B – Bassett Creek Park Pond & Winnetka - East Wetland Delineation Site Photos

<p>Photo 4 – October 11, 2016</p> <p>Bassett Creek Park Pond</p> <p>Shrub swamp "island" community surrounded by shallow open water community located beyond open water.</p>	
<p>Photo 5 – October 11, 2016</p> <p>Bassett Creek Park Pond</p> <p>Bassett Creek extending through floodplain forest community on the northwest side of the basin.</p>	
<p>Photo 6 – October 11, 2016</p> <p>Winnetka Pond</p> <p>Typical view of the shallow open water community.</p>	

Appendix B – Bassett Creek Park Pond & Winnetka - East Wetland Delineation Site Photos

Photo 7 – October 11, 2016

Winnetka Pond

Steep and abrupt wetland edge leading into shallow open water community on the north side.



Photo 8 – October 11, 2016

Winnetka Pond

Typical view of floodplain forest community on the west side of the basin.

