Milwaukee South Shore Beach Improvements

Basis of Design

FINAL

Prepared For:

Milwaukee County Department of Administrative Services 633 West Wisconsin Avenue, Suite 1006 Milwaukee, WI 53203

Prepared By:

SMITHGROUP JJR

SmithGroupJJR

44 East Mifflin Street, Suite 500

Madison, WI 53703

SmithGroupJJR Project Number: 10451.000

Revision Date: June 11, 2018

EPA Grant Number: GL00E01206_MKE1603_SouthShore







Table of Contents

1.	EXEC	UTIVE SUMMARY	1
2.	PROJ	ECT BACKGROUND	2
	2.1.	Previous Studies	3
	2.1.1.	From McLellan and Salmore, 2003	3
	2.1.2.	From McLellan and Jensen, 2005	3
	2.1.3.	Scopel, Harris and Mc.Lellan 2006	4
	2.1.4.	McLellan, et. Al., 2007	4
	2.2.	BACTERIA IN BEACH SANDS	5
3.	EXIST	ING ENVIRONMENTAL CONDITIONS	6
	3.1.	WATER LEVELS	6
	3.2.	Over Water Wind Data	8
	3.3.	OFFSHORE WAVE CONDITIONS	. 10
4.	ADCF	DEPLOYMENT	. 12
5.	BEAC	H ALTERNATIVES	. 13
	5.1.	OPINION OF PROBABLE CONSTRUCTION COST	. 20
6.	NUME	ERICAL MODELING	. 21
	6.1.	Model Setup	. 21
	6.1.1.	Mesh and Bathymetry	. 22
	6.2.	CALIBRATION OF THE NUMERICAL MODEL	. 24
	6.2.1.	Offshore Wave Boundary Conditions for calibration	. 24
	6.2.2.	Wind Boundary Conditions for calibration	. 26
	6.2.3.	Model calibration	. 27
	6.2.4.	Model Simulation for the different alternatives	. 29
	6.3.	Results	. 33
7.	CONC	CLUSIONS	. 40
8.	RECO	MMENDATIONS	. 40

Table of Contents | i

Appendices

- A. INITIAL BEACH ALTERNATIVES
- B. OPINION OF PROBABLE CONSTRUCTION COST FOR THE BEACH ALTERNATIVES
- C. MODEL GRAPHICS
- D. STORMWATER REPORT
- E. WETLAND DELINEATION REPORT

List of Tables

ABLE 1: LAKE MICHIGAN LOW AND MEAN WATER LEVELS FROM JANUARY 1918 TO MARCH 2018	7
TABLE 2: EXTREME WIND SPEEDS IN MILES PER HOUR FOR DIFFERENT RETURN PERIODS PER 22.5° DIRECTIONAL BIN. FROM GLEF MLWW3	
ABLE 3: EXTREME SIGNIFICANT WAVE HEIGHTS FOR DIFFERENT RETURN PERIODS PER 22.5° DIRECTIONAL BIN. FROM WIS ST 940501	1
ABLE 4: OPCC FOR EACH BEACH ALTERNATIVE	20
ABLE 5: MODEL SIMULATION BOUNDARY CONDITIONS	31
ABLE 6: NEARSHORE CURRENT SPEED VALUES FOR THE 4 PROPOSED ALTERNATIVES	3

1. Executive Summary

A beach relocation study was completed for the beach at the South Shore Park in Milwaukee, WI. The work consisted of the following:

- 1) Reviewing and analyzing the existing metocean conditions (water levels, wind, wave, and currents) that impact the project site.
- 2) Preparation of the base map, for which a field survey of the project site that includes the existing beach, upland area, the stone revetment, and the potential beach relocation area, was completed. Bathymetric contours from previously completed studies and from LiDAR data were also incorporated into the final base map.
- 3) Deployment of an *Acoustic Doppler Current Profiler* (ADCP) to measure wave and currents near the project site.
- 4) Numerical modeling of the wind, waves and currents at the site. For this, a model calibration was carried out using the data collected by the ADCP.
- 5) Development of four improved beach alternatives for the park.

2. Project Background

South Shore Park is a Milwaukee County Department of Parks, Recreation and Culture (DPRC) facility located in the city of Milwaukee, the state's most populous urban area. It is one of only three improved public access points along the Lake Michigan shoreline in the southern half of Milwaukee County. As such, it provides Lake Michigan recreational access to thousands of Southeast Wisconsin residents annually, including significant numbers of individuals with low-moderate incomes. Within the recreational amenities of the park is the South Shore Beach, which unfortunately ranks amongst the worst in the nation in recreational water quality. Consequently, the beach, and specifically the water quality at the beach has been the subject of numerous studies over the years. These studies identified the probable causes of the poor water quality, which include stormwater runoff, waterfowl excrement, CSO discharges, the sailboat mooring field and restricted water circulation. In late 2014, DPRC in partnership with key stakeholders, including SmithGroupJJR, approved a masterplan for the shoreline area of South Shore Park.

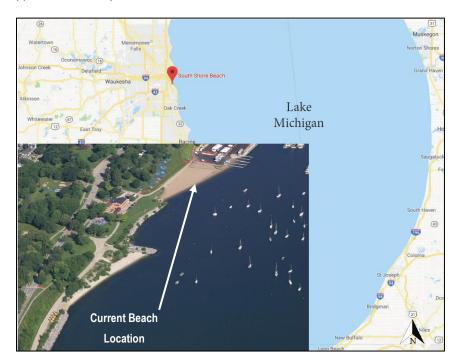


Figure 1: Location of the South Shore Park along the Lake Michigan shoreline

Now that funding has been secured, Milwaukee County wishes to move forward with a process that focuses on the nearshore influences on the water quality issue. The landside features, which are equally important, were addressed in previous planning exercises. These will also be integrated and enhanced during the nearshore development. Some of the alternatives explored include relocation of the recreational beach to the south, which is in an area outside the original master plan. Addressing existing sources of water quality degradation and evaluating the possible relocation of the beach are the focus of this project. The goal is to improve water quality adjacent to the beach and reduce to the greatest extent possible the ongoing beach closures.

2.1. <u>Previous Studies</u>

The McLellan lab from the School of Freshwater Sciences, UWM has carried out extensive field surveys and molecular testing methods to determine the causes of poor water quality at South Shore beach.

The *E. coli* bacteria is used as an indicator for fecal pollution. The monitoring of South Shore Beach showed that this indicator was above the EPA recommended limit nearly 60% of the days tested.

There are multiple sources of potential contamination that impact South Shore Beach. The majority of the fecal pollution originates from bird waste, where gulls, ducks and geese deposit *E. coli* into the sand and water. Human waste has also been intermittently detected at low levels. Additionally, large-scale regional sources of fecal pollution during heavy rain impact South Shore and the adjacent areas.

A summary of the McLellan lab investigation can be found below:

2.1.1. From McLellan and Salmore, 2003

- The beach closings from 1999-2001 were caused mainly by avian contamination.
- Water quality samples were taken during the summer of 2002 at South Shore Park. E. coli levels were highest at the Beach site 88% of the days sampled.
- *E. coli* levels were much higher within the first 10m from the shoreline. *E. coli* counts approximately10m away from the shoreline were similar to the levels measured 150m away, which indicates that the source of contamination is from the shoreline.
- The concentration of *E. coli* at the breakwater opening were found to be significantly less than the levels found in the swimming area.

2.1.2. From McLellan and Jensen, 2005

- Overall, the *E. coli* counts were consistently higher after a precipitation event, indicating transport via stormwater runoff.
- *E. coli* concentrations increased six-fold after a precipitation event.
- 33 of the 34 beach water samples tested positive for Bacteroids, however, none tested positive for human specific Bacteroids. Therefore, it was deducted that much of the contamination is not from human sewage since there were no Combined Sewer Overflow (CSO) events during the sampling time.

- 2.1.3. Scopel, Harris and Mc.Lellan 2006
 - Water quality sampling indicated that the existing beach had much higher levels than the TBM beach (the location of SGJJR alternative 1). The primary cause of contamination was pollutants from the adjacent shoreline.
 - A fluorescein dye study demonstrated that wind could move the water away from the beach, but only during strong wind conditions.
 - During calm winds, the longshore current was determined to be the main dispersion factor at the existing beach.
 - The dye moved twice as fast during calm wind conditions at the TBM beach location.
 - During high wind conditions, at the existing beach, the dye moved away from the shore; however, at the TBM location, the dye continued to move along the shore, only at a faster rate.
 - Under NNW wind conditions, the residence times for 90% replacement of the dye were similar for both locations.
 - The primary mechanism for *E. coli* dispersion appeared to be surface currents, while mixing was a minor factor.
- 2.1.4. McLellan, et. Al., 2007
 - The study concluded that *E. coli* levels were notably higher during CSO and storm sewer overflow events. Unfortunately, it is difficult to determine if the pollution originated from the CSO events, or from the large volume of urban stormwater that was released directly into the receiving waters.
 - *E. coli* levels dramatically decreased outside the breakwater.
 - Beaches at least one kilometer from the harbor were not affected by overflow events.

2.2. Bacteria in beach sands

Aside from the nearshore water, *E. coli* bacteria can also be found in the beach sand. Sands and sediments can provide habitat where fecal bacterial populations may persist, and in some cases grow in the coastal zone. Some of the ways that fecal indicator bacteria can be deposited in the sand are via stormwater runoff, fecal contamination from sewage malfunction or overflow, direct introduction of fecal matter by animals (birds, dogs, wildlife, humans), and periodic water level rewetting within the swash zone¹.

To address this issue, all three alternatives feature a steep beach face with a coarse sediment to minimize the area that's in contact with the water.

¹ The swash zone is defined as the part of the beach extending from a nearshore shallow depth to the limit of maximum inundation.

3. Existing Environmental Conditions

3.1. Water Levels

South Shore Park is subjected to the varying water levels of Lake Michigan. On a yearly basis, the water levels vary by approximately one foot, with the highs occurring in mid-July and the lows in mid-February. Long term water levels fluctuate by approximately 6.3 feet with the record high occurring in 1986-1987 and the record lows occurring in 1964, 2012 and 2013 depending on the month. Lake levels drop during periods of drought and dry or cold weather and rise during periods of heavy rainfall and runoff of snowmelt. Individual storm events and pressure systems also affect water levels on a short-term basis.

Lake Michigan water levels are well documented and historical information of over a century is available through the *National Oceanic and Atmospheric Administration*'s website, where the water levels are reported in the International Great Lakes Datum 1985 (IGLD85). The closest water measurement station from NOAA is station 9087057, located in Milwaukee (43° 0.1' N 87° 53.2' W), less than a mile Northwest from the project site. This gauge collects hourly data and has been recording information since January of 1970.

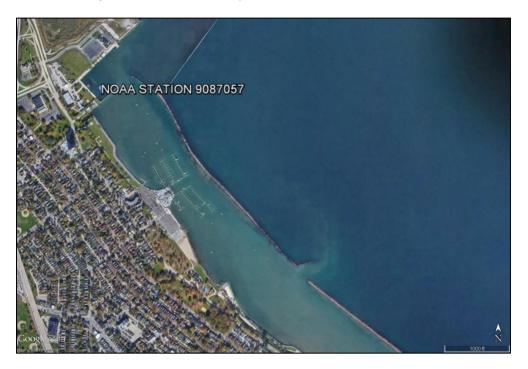


Figure 2: Location of NOAA's water level gauge ST 9087057.

Water level measurements from January of 1919 to March of 2018 are shown in Figure 3. It can be observed that the minimum average water level was recorded in March of 1964, whereas the maximum average level was recorded in

October of 1986 with a total average variation of 6.3 ft. It is also observed that highest levels are registered during the summer months and the lowest during the winter months.

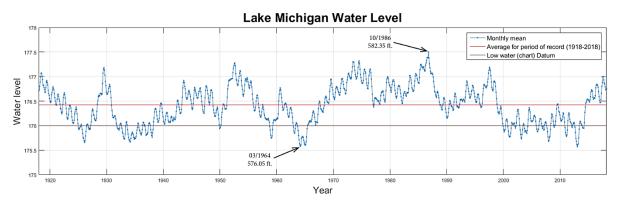


Figure 3: Lake Michigan measured Water Levels (1918-2018)

The reported low water datum (LWD) and mean water level (MWL) for this station are shown in both IGLD85 and in NGVD29 in Table 1. The Low Water Datum was used as a zero level for the numerical model grid generation.

WATER LEVEL	IGLD85 (ft.)	NGVD29 (ft.)
Low Water Datum LWD	577.50	578.27
Mean Water Level MWL	578.80	579.65

Table 1: Lake Michigan Low and Mean water levels from January 1918 to March 2018².

² https://www.glerl.noaa.gov//data/dashboard/GLWLD.html

3.2. Over Water Wind Data

Wind measurements were extracted from the MLWW3 meteorological station. This station is operated by NOAA's Great Lakes Environmental Research Laboratory and has approximately 12.7 years of data. Station MLWW3 has an anemometer located 12.2m above the site elevation (~617 ft. above mean sea level). The unit is set to sample an averaging interval of 5 minutes. For each 5-minute interval, a mean and maximum (gust) wind speed are reported.



Figure 4: Location of Milwaukee meteorological station (MLWW3).

Figure 5 shows the wind rose for all year. It can be inferred from this rose that the dominant winds are from the W and WNW sectors, whereas the strongest winds come from the NNE and NE, almost perpendicular to the shore. Figure 6 shows the summer wind rose, where the dominant winds come from the NNE and N sectors and the strongest from the SW and the NNE sectors.

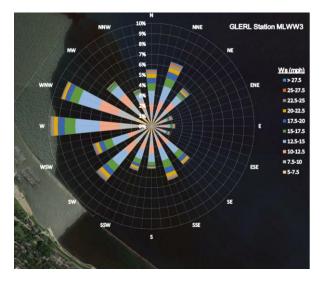


Figure 5: Wind rose for the Milwaukee meteorological station, all year.

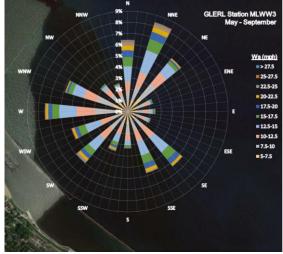


Figure 6: Wind rose for the Milwaukee meteorological station, summer.

An extreme analysis using the highest winds per 22.5° directional bin from MLWW3 was also completed. Recorded winds were available from 2005-2017. These winds were then fitted to a Weibull distribution to obtain the different return period storms shown in Table 2. These winds were used as additional energy input into the large-scale wave model through wave generation.

Return Periods	All Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	wsw	W	WNW	NW	NNW
1 yr	37.41	29.99	32.89	32.32	31.46	29.67	28.34	30.87	30.07	29.44	31.49	32.40	32.31	31.44	29.37	27.33	26.55
10 yr	43.70	32.72	34.57	38.87	33.85	36.26	34.76	33.52	33.76	32.75	37.91	39.98	42.05	38.33	33.50	30.47	31.84
25 yr	45.83	33.07	36.78	42.50	37.10	37.88	35.74	34.26	34.87	34.08	40.26	44.71	46.22	41.40	34.94	31.89	33.50
50 yr	47.38	33.29	39.22	45.48	40.76	39.01	36.38	34.79	35.66	35.09	42.02	48.73	49.43	43.78	36.00	32.99	34.69
100 yr	48.91	33.48	42.41	48.62	45.59	40.06	36.96	35.29	36.41	36.10	43.75	53.09	52.68	46.20	37.04	34.12	35.85

Table 2: Extreme Wind speeds in miles per hour for different return periods per 22.5° directional bin. From GLERL MLWW3

No overland – over water wind transformation was done since the GLERL MLWW3 is located at the lake, and only 3.6 miles from the project site.

3.3. Offshore Wave Conditions

Wave measurements were extracted from the US Army Corps of Engineers (USACE) *Wave Information Studies* (WIS) Station 94050 which is located 5 miles offshore of the project site. The water depth at this station is approximately 98 feet. This station has 35 years of wave data (from 1979-2014).



Figure 7: Location of the WIS station 94050 in front of the project site.

The all-year wave rose for station 94050 shown in Figure 8, indicates that the most frequent and highest waves come from the NNE direction.

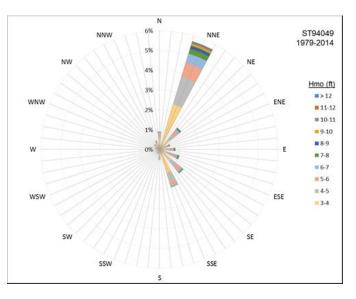


Figure 8: All season deep water wave rose from ST 94050 (1979-2014)

Using the 35 years of available information, the offshore wave conditions were analyzed by obtaining the yearly wave occurrences per direction. The results are shown in Table 3. These values will be used as boundary conditions for the numerical wave modeling efforts.

Return Periods	All Direction	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	sw	wsw	w	WNW	NW	NNW
1 yr	10.95	6.21	10.21	8.18	5.87	6.65	7.19	7.11	6.55	5.49	4.98	4.61	4.08	4.18	4.11	4.48	4.93
10 yr	16.25	9.59	16.08	10.98	9.98	11.64	11.10	9.65	8.11	7.27	6.72	6.55	6.26	6.10	6.40	6.58	6.85
25 yr	18.08	11.02	17.87	13.38	10.97	13.47	12.26	10.50	8.50	8.19	7.85	7.31	6.76	6.69	6.99	7.06	7.21
50 yr	19.42	12.11	19.16	15.64	11.65	14.84	13.09	11.11	8.76	8.93	8.82	7.89	7.10	7.12	7.41	7.38	7.45
100 yr	20.74	13.22	20.39	18.27	12.30	16.18	13.89	11.71	9.01	9.71	9.88	8.46	7.42	7.54	7.80	7.69	7.67

Table 3: Extreme significant wave heights for different return periods per 22.5° directional bin. From WIS ST 94050.

4. ADCP Deployment

An Acoustic Doppler Current Profiler (ADCP) was deployed in the nearshore area of South Shore Beach to collect wave and current data from November 11th to December 22nd of 2017. This data was used to calibrate the numerical model (See section 6.2).

The ADCP was programmed using TELEDYNE's suite of tools which are used to set up the ADCP for data collection. A thorough check of the ADCP's battery, compass, time stamp, current, and pressure sensors was done before delivering the instrument to *Pirates Cove Diving Inc.*, a professional diving team that attached the ADCP to a secure housing, and deployed it to the established location shown in Figure 9 at a depth of 11.5 ft.



Figure 9: Position of the deployed ADCP behind the breakwater entrance.

After retrieval, the collected data was post-processed using the manufacturer's software to eliminate any erroneous information based on the instrument's thresholds.

5. Beach Alternatives

Based on the specific goals and objectives of this project, and the comments received during the public input process, SmithGroupJJR prepared four initial plan alternatives to illustrate upland, beach, and nearshore area improvements. The main objectives were:

- Provide a recreational beach with a footprint of similar area to the existing beach.
- Provide infrastructure that supports public access to the park.
- Provide accommodations to improve user recreational needs.
- Full integration of stormwater BMP's.
- Beach water circulation improvements with the goal of decreasing the amount of beach closures.
- Implement deterrents to reduce wildlife presence.
- Adherence to ADA guidelines.

These initial alternatives can be found in Appendix A. The alternatives were developed with an understanding the water circulation improved the closer the beach was to the breakwater opening. Furthermore, the beach slope at the water's edge was steepened to reduce the beach surface regularly wetted by wave activity. To lessen moisture retention time within the sands, it is recommended that the beach sediment be coarse and narrowly-graded sandy material which will promote drainage. The alternatives were presented to the Milwaukee County and WDNR staff at a meeting on January 9th, 2018. Based on comments received, four final alternatives were developed for the site. These final alternatives were developed in conjunction with the numerical modeling task to ensure that they perform as required (See section 6.2.4).

Based on the findings of previous studies listed in section 2.1 and the numerical modeling results, the water circulation is higher along the southern beach location then at its current location next to the marina. Understanding that without removal of contributing sources of pollutants which are not within the project boundary, the best method for improving water quality along the nearshore is to increase water circulation. Therefore, the location of the three alternatives was strategically located in front of the breakwater entrance where wave penetration, and therefore wave generated water circulation, would be greatest.

This alternative provides a beach closer to the breakwater opening, where wave energy and water circulation is highest. (see Section 6.3).



Figure 10: Alternative 1

The proposed jetties were sized to provide a beach area that would match the existing dry beach area (~1 acre), which was one of the main constrains that informed the design.

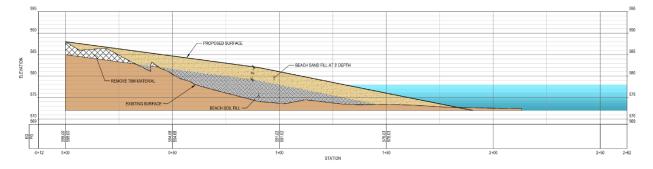


Figure 11: Alternative 1 Generic Beach Cross-Section

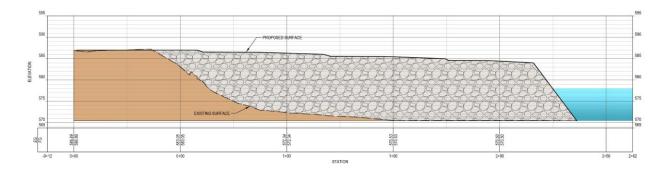


Figure 12: Alternative 1 North Breakwater Section

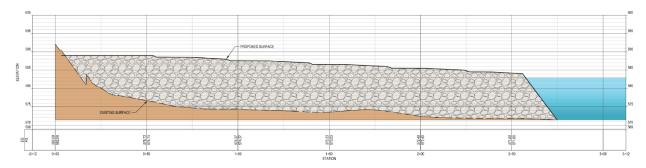


Figure 13: Alternative 1 South Breakwater Section

This alternative features a beach closer to the existing amenities (restrooms, beer garden), and adjacent to a Terraced Lawn more central to park and pavillion users.



Figure 14: Alternative 2 Planview

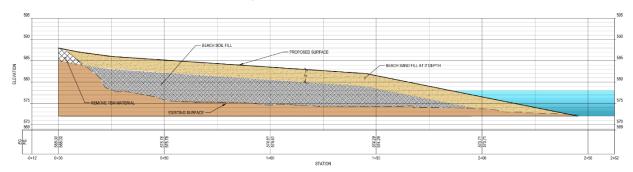


Figure 15: Alternative 2 Generic beach Cross-section

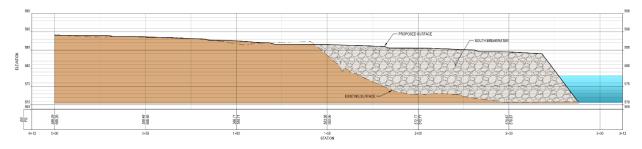


Figure 16: Alternative 2 South Breakwater Cross-section.

This alternative was developed to create a narrower groomed beach that extends further south closer to the breakwater entrance while still providing beach area in front of the pavilion.



Figure 17: Alternative 3 Planview

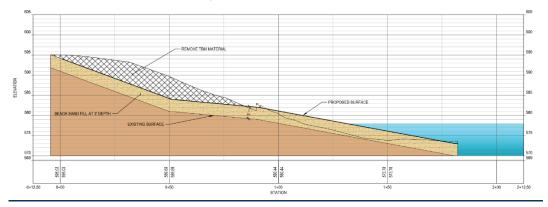


Figure 18: Alternative 3 Generic Beach Cross-section

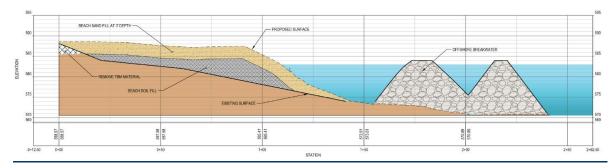


Figure 19: Alternative 3 Beach and Detached Breakwater Cross-section

Based on comments from WDNR following review of a draft of this report, alternative 4 was included. It is located in the same area as Alternative 1 where the water circulation is better, although it features smaller structures.

Alternative 4 was developed in order to reduce impacts to the lakebed and reduce construction costs. This alternative resulted in a recreational beach area reduced by approximately 40% when compared to Alternative 1.



Figure 20: Alternative 4 Planview

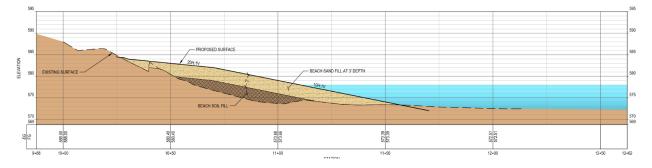


Figure 21: Alternative 4 Generic Beach Cross-Section

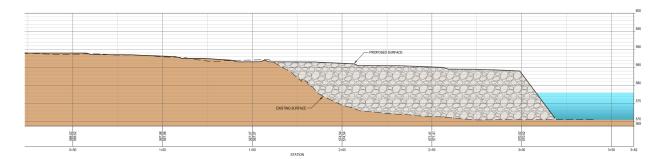


Figure 22: Alternative 4 North Breakwater Section

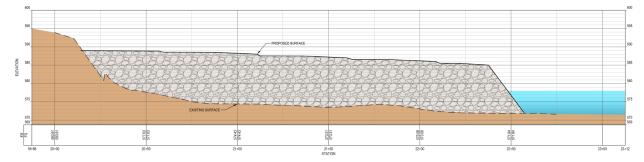


Figure 23: Alternative 4 South Breakwater Section

5.1. Opinion of Probable Construction Cost

A preliminary opinion of probable construction cost (OPCC) with key elements broken out separately was prepared for the beach alternatives and is included in Appendix B. Table 4 indicates the total cost for each.

 Table 4: OPCC for each beach alternative.

Project Total (Construction,	Al	ternative 1	A	Iternative 2	Alternative 3	Alternative 4		
design, contingency and	\$	3,530,039	\$	3,605,804	\$ 4,332,361	\$	2,956,979	
permitting)								

6. Numerical Modeling

All numerical modeling was completed using the MIKE 21 software package, a state of the art model developed by DHI, capable of simulating physical nearshore processes. This software has a proven 25-year track record of successful applications. This software package is a modular product that includes simulation engines for different applications, such as wave modeling, hydrodynamics, sediment dynamics, etc.

For this application, the MIKE 21 Spectral Wave model (SW), and the MIKE 21 Flow Model (FM), were used. The MIKE 21 SW simulates the growth, decay, and transformation of wind-generated waves and swells, both in offshore and coastal areas. The hydrodynamic (HD) module, is the basic module in MIKE 21 FM, and provides the hydrodynamic basis to simulate water level variations and flows in response to a variety of forcing functions in lakes and other coastal regions.

Both the SW and FM modules were dynamically coupled to simulate the mutual interaction between the waves and the currents, i.e. the two modules feed information to one another iteratively until an equilibrium is reached. This way, a full feedback of the changes on the waves and flow calculation was included.

After the initial model setup, calibration and verification of the model was completed using waves and currents measured by the ADCP deployed for this purpose (See page 24).

6.1. Model Setup

To set up the model, the collected data was converted into a format which can be understood by the numerical model. This was completed by creating a computational domain (mesh and bathymetry) and preparing the input for the boundary conditions for the model. A summary of this setup is presented in this section.

6.1.1. Mesh and Bathymetry

Bathymetry information for the numerical model was compiled from several sources:

- 1) A selected grid from NOAA's Great Lakes Bathymetry database at 3 arc-second resolution (~295 ft.) for the large-scale bathymetry.
- 2) NOAA's more detailed nearshore bathymetry from LiDAR 2012³.
- 3) Topographic survey performed by KSingh Engineers on November 14 of 2017.
- 4) Bathymetry information from Himalayan Consultants, who completed a survey on August of 2012.

With the above information, a digital terrain model was created for the numerical model (Figure 24). The boundary outline defining the model domain extends approximately 4.6 miles North, 3 miles South and 4.4 miles offshore of the project site.

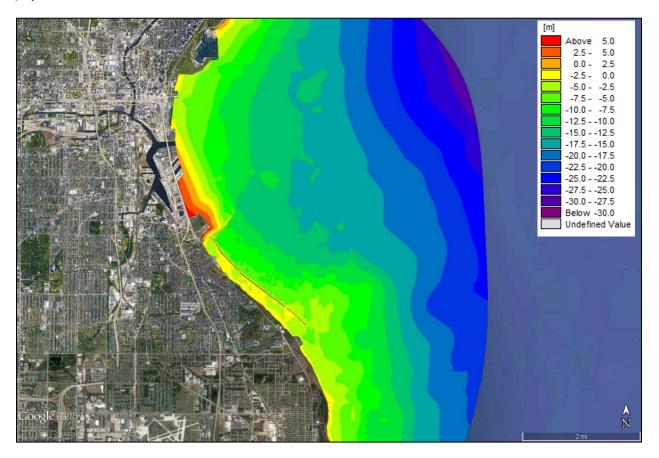


Figure 24: Large scale Bathymetry for the study area.

³ https://coast.noaa.gov/dataviewer/#/lidar/

An unstructured mesh (varying in grid size) was created using the MIKE *Mesh Generator* tool (Figure 25). This unstructured mesh provides a good degree of flexibility in the representation of complex geometries since small elements can be used in areas where more resolution is required, and larger elements used where less resolution is required. The mesh resolution influences greatly the accuracy and duration of the numerical simulation. For this study the mesh sizes ranged from 8m (~26 ft.) close to the project site (Figure 26), to 130m (~426 ft.) in the offshore deepwater areas.

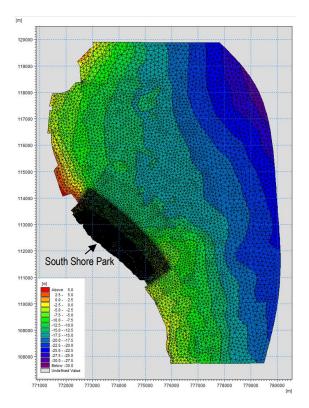


Figure 25: Unstructured mesh for the model domain with varying mesh resolutions.

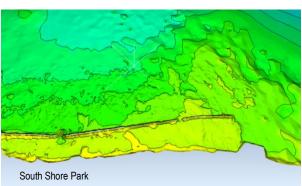


Figure 26: Bathymetry with higher resolution in the nearshore area.

6.2. <u>Calibration of the numerical model</u>

The purpose of the calibration is to tune the numerical model to reproduce known/measured conditions for a particular situation. In this case, the wave and current data recorded by the ADCP was used to calibrate the numerical model for the period of time from November 11th, 2017 to December 22nd, 2017 (calibration period).

The most important factor when calibrating a model is the accuracy of the measured data. As mentioned in section 4, the measurements were processed to eliminate erroneous information based on the instrument's thresholds.

6.2.1. Offshore Wave Boundary Conditions for calibration

Since the ADCP wave measurements were taken inside the harbor (Figure 9), offshore wave conditions for the same period of time were required. This information was downloaded from the Nowcast of the Great Lakes Coastal Forecasting System⁴ at a Latitude of 43.0400° and a Longitude of -87.8°, as shown in Figure 27.

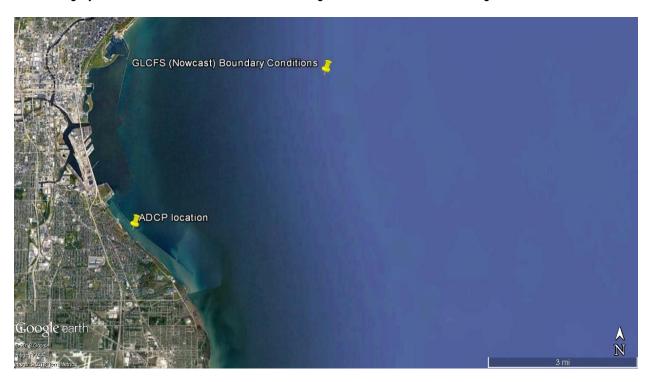
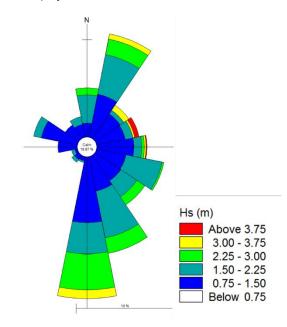


Figure 27: Comparison between the offshore wave data vs the ADCP location.

⁴ http://data.glos.us/glcfs/

Wave roses for the two different locations are shown in Figures 28 and 29. The change in magnitude and in direction is evident. This is because as offshore waves enter shallower water, they become depth-limited and start to shoal and refract because of the varying water depths. Furthermore, when waves encounter an obstacle, such as the breakwaters at the project site, diffraction occurs and the wave crest will curve into the shadow area behind the breakwater.



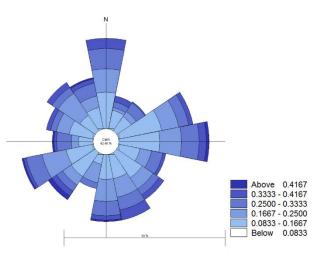


Figure 29: Nearshore wave rose from 11/06/2017 to 12/22/2017

Figure 28: Offshore wave rose from 11/06/2017 to 12/22/2017

6.2.2. Wind Boundary Conditions for calibration

The wind data for the model calibration was downloaded from the NDBC MLWW3 station. The wind rose generated with this data shows that the dominant winds are coming from the WNW and the SW sectors, whereas the strongest winds are from the West and WSW.

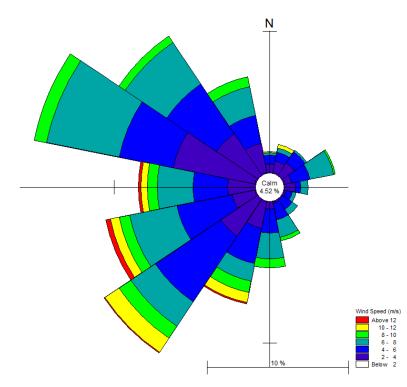


Figure 30: Wind rose from 11/06/2017 to 12/22/2017

6.2.3. Model calibration

The wind and wave offshore data mentioned in sections 6.2.1 and 6.2.2 were used as boundary conditions to force the model during the calibration period.

The initial run was completed using the software's default parameters. The results show an underestimation of the wave heights in the model simulations (Figure 31).

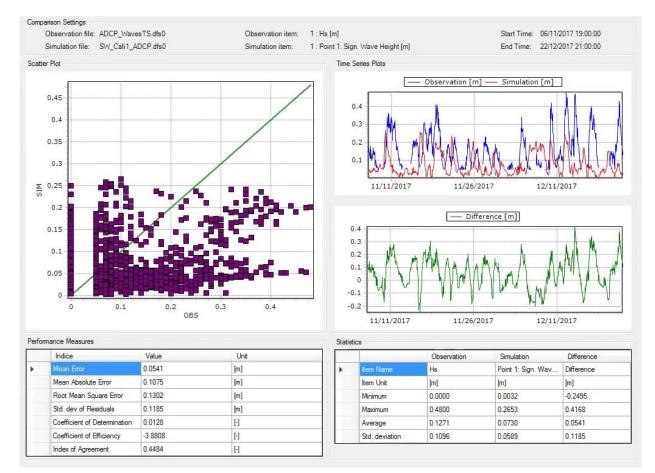


Figure 31: Comparison between the ADCP measured wave heights and the model simulation using the default parameters.

To reduce the differences between the model results and the in-situ measurements, different formulations, solution techniques, and the following parameters were changed:

- Resolution of the mesh grid.
- Bottom friction coefficient for shallow water depths.
- Wave breaking parameters.
- Accuracy of the wind data.

Various model runs were completed modifying the tuning parameters until an acceptable difference was reached (calibrated) (Figure 32).

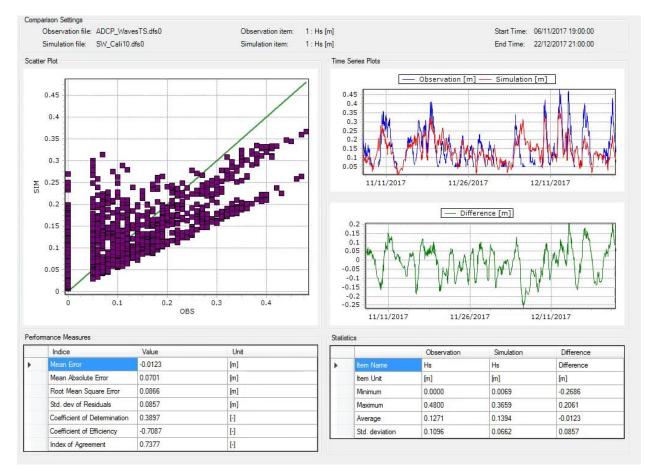


Figure 32: Comparison between the ADCP measured wave heights and the model simulation after the tuning parameters were changed.

6.2.4. Model Simulation for the different alternatives

Once the model was calibrated, a digital terrain for each of the beach alternatives shown in Section 5 was created (Figures 33-36).

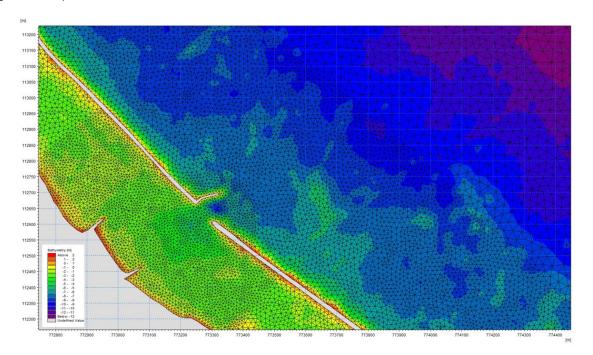


Figure 33: Digital domain for alternative 1.

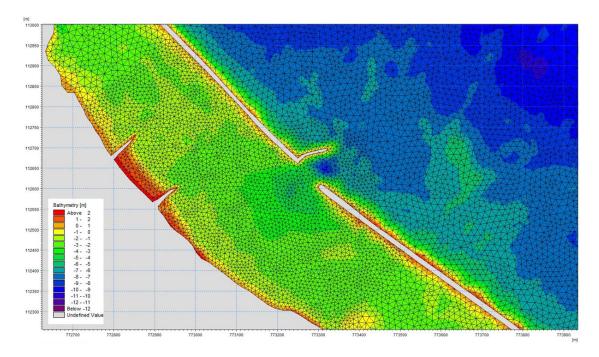


Figure 34: Digital domain for alternative 2.

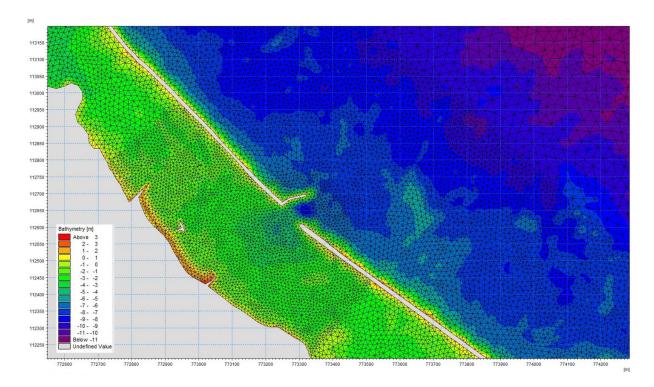


Figure 35: Digital domain for alternative 3.

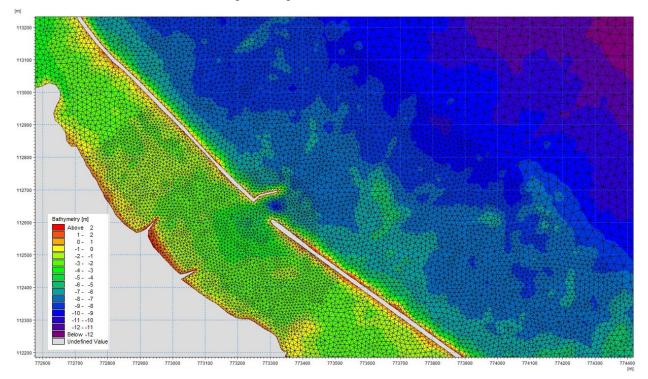


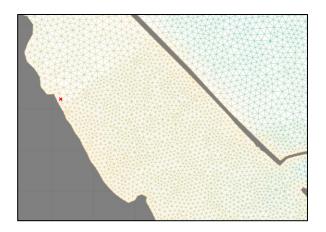
Figure 36: Digital domain for alternative 4.

The existing conditions of South Shore Park and the four beach alternatives were modeled under different return period events per directional bin, as discussed in Section 3.2 and Section 3.3. The purpose of these simulations was to assess the difference in the nearshore currents at each of the location during different wind/waves conditions. The wind and waves used to force the model are shown in Table 5, for a total of 48 simulations.

Direction and Return Period Event	Hs (m)	Tp (s)	Wind Speed (m/s)	Direction (°)
NNE_1yr	3.11	7.5	13.8	22.5
NNE_50yr	5.48	9.75	17.11	22.5
NE_1yr	2.49	7	12.67	45
NE_50yr	4.77	8.75	16.87	45
E_1yr	2.03	6.25	12.71	90
E_50yr	4.52	8.75	16.49	90
SE_1yr	2.17	6.5	12.18	135
SE_50yr	3.20	7.5	14.42	135
SW_1yr			14.27	225
SW_50yr			19.45	225
W_1yr			14.09	270
W_50yr			17.15	270

Table 5: Model simulation Boundary Conditions

After the simulations were completed, current speed information near the shore was extracted for each of the alternatives for comparison purposes. Figures 37-41 show the location of the extraction points.



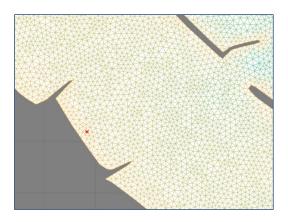


Figure 37: Extraction Point at the Existing Beach Location

Figure 38: Extraction Point for Alternative 1

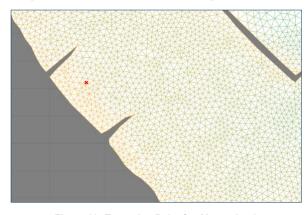


Figure 39: Extraction Point for Alternative 2

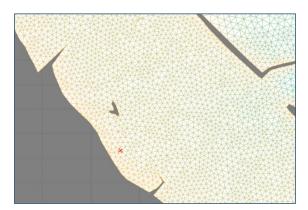


Figure 40: Extraction Point for Alternative 3

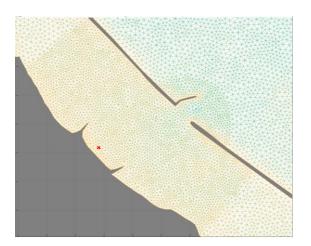


Figure 41: Extraction Point for Alternative 4

6.3. <u>Results</u>

A quantitative comparison of the nearshore currents was completed for each beach alternative and for the existing location of the beach. The results for the one-year return period events per directional bin are shown in Table 6.

Direction	Current Speed (m/s)										
and Return Period	Existing	Alternative 1		Alternative 2		Alternative 3		Alternative 4			
Event	Beach	Before Structures	After Structures	Before Structures	After Structures	Before Structures	After Structures	Before Structures	After Structures		
NNE_1yr	0.06	0.28	0.25	0.07	0.08	0.28	0.22	0.28	0.24		
NE_1yr	0.18	0.36	0.33	0.11	0.16	0.36	0.32	0.36	0.3		
E_1yr	0.11	0.22	0.2	0.12	0.16	0.22	0.26	0.22	0.17		
SE_1yr	0.12	0.17	0.12	0.09	0.11	0.12	0.14	0.12	0.11		
SW_1yr	0.05	0.06	0.09	0.05	0.05	0.06	0.08	0.06	0.05		
W_1yr	0.11	0.09	0.13	0.06	0.07	0.07	0.2	0.07	0.08		

Table 6: Nearshore current speed values for the 4 proposed alternatives

As requested by DNR, a comparison of the existing circulation in the locations of the proposed alternatives was added to Table 6. It is worth nothing that in many of the locations, adding the jetties has slightly decreased circulation velocities. However, the jetties are necessary to contain the recreational beach and prevent sand migration. In the case of alternative 2, the circulation is slightly greater after adding the new jetties and regrading the area, this is due to the beach being extended lakeward. As stated previously, the dominant wind direction in the summer is NNE. When winds are from the NNE, the water currents head towards the NW parallel to the shore. As shown in Table 6, the nearshore current velocities are significantly higher in alternatives one and three than the velocities at the existing location.

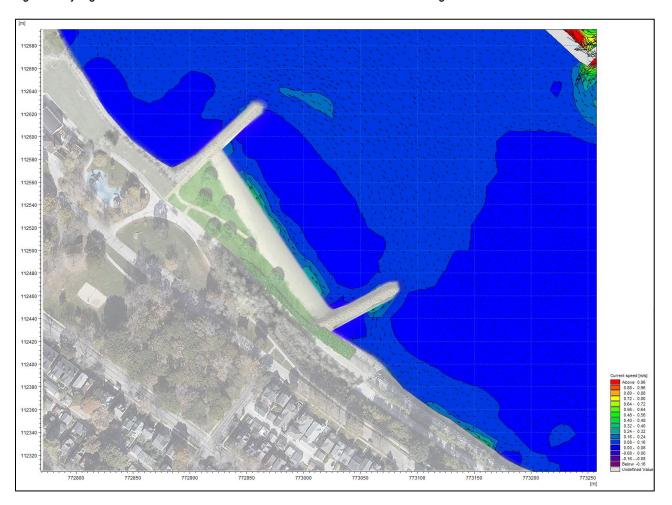


Figure 42: Current Speeds caused by winds from the NNE 1year return period event (Alternative 1).



Figure 43: Current Speeds caused by winds from the NNE 1year return period event (Alternative 2).

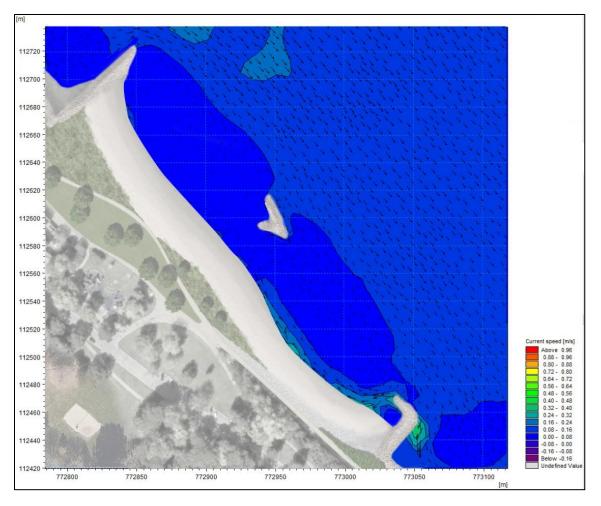
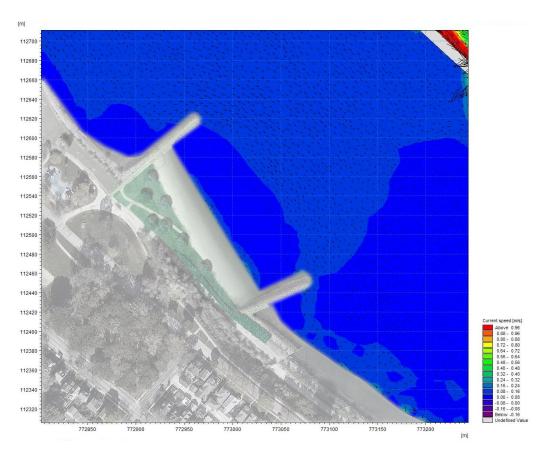
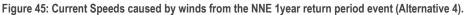


Figure 44: Current Speeds caused by winds from the NNE 1year return period event (Alternative 3).





The second most dominant wind direction during the summer is the West (Figure 6). Alternatives one, four and three still show better water circulation than the existing beach although the difference is not as significant. It is worth noting that water circulation varies the most in Alternative three, the water circulation South of the beach is higher than at the North, further to the breakwater entrance.

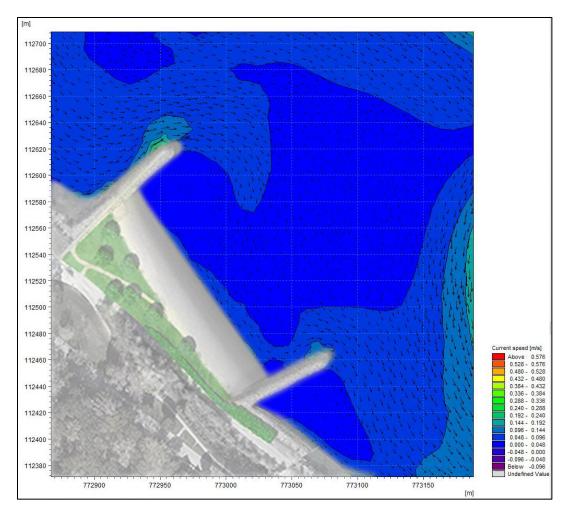


Figure 46: Current Speeds caused by winds from the W 1year return period event (Alternative 1).

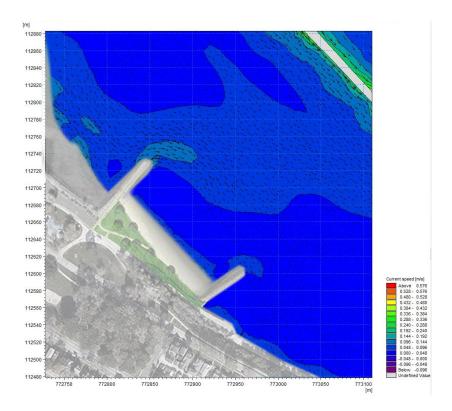


Figure 47: Current Speeds caused by winds from the W 1year return period event (Alternative 2).

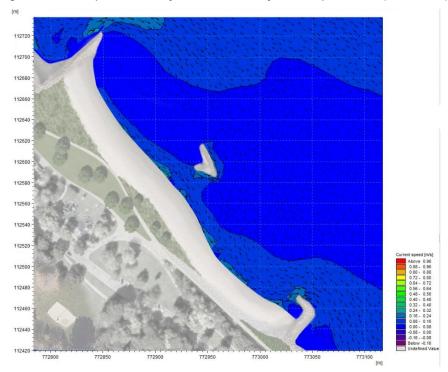


Figure 48: Current Speeds caused by winds from the W 1year return period event (Alternative 3).

7. Conclusions

- South Shore Park is located inside two breakwaters that shelter it from Lake Michigan's waves. This results
 in less energy from the waves breaking near the shore and therefore low current velocities along the shoreline.
- The NNE is the dominant wind direction during the summer, occurring approximately 8.5% of the time.
- Winds from the NNE and NE directions generate higher current velocities and increased water circulation is observed in the nearshore area. The nearshore water in alternative one, three, and four experience higher current velocities than the velocities at the existing beach location. Current velocities in the nearshore area of alternative two are similar to the existing beach location.
- Winds from the West are the second most dominant direction during the summer. The currents generated from the westerly winds have a SE direction. The differences between alternative 1, 4 and the existing beach are not significant (~0.02m/s).
- Alternative three shows higher current velocities at the southern part of the beach given the shape of the breakwaters that promote better water circulation, the same was not observed for the northern part of the beach.

8. Recommendations

The goal of this study was to develop alternatives to the existing beach layout and configuration that improved water circulation adjacent to the beach and reduce to the greatest extent possible the ongoing beach closures at South Shore Beach. Based on the results of the modeling which indicates increased nearshore water velocities and circulation during winds from the NNE (prominent summer wind direction), we recommend alternatives #1 and #4. The advantage of alternative #4 is that it has the least cost, however, the recreational beach area is ~40% less than alternative #1.

Alternative #3, also has increased water circulation, but only at the southern most limits of the beach, whereas alternatives #1 and #4, showed increased water circulation across the full width of the beach.

Milwaukee County Department of Administrative Services

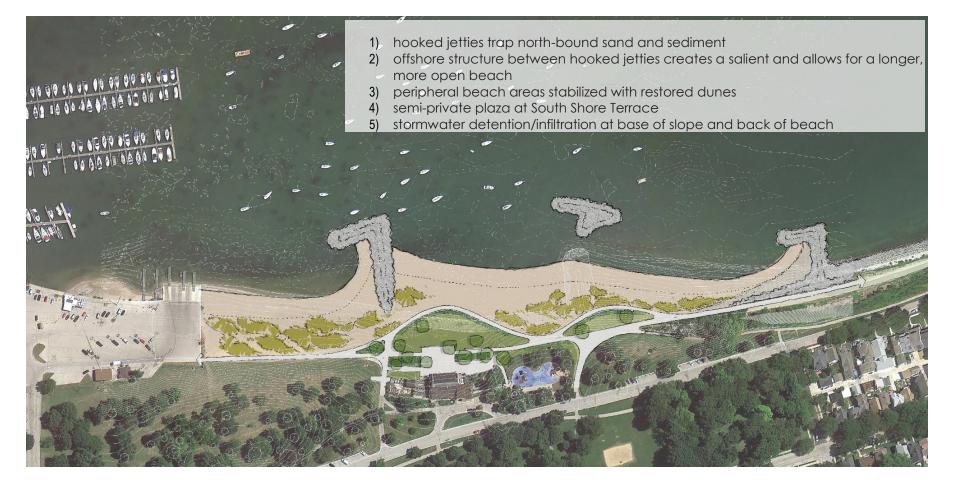
South Shore Beach Improvements

Coastal Report

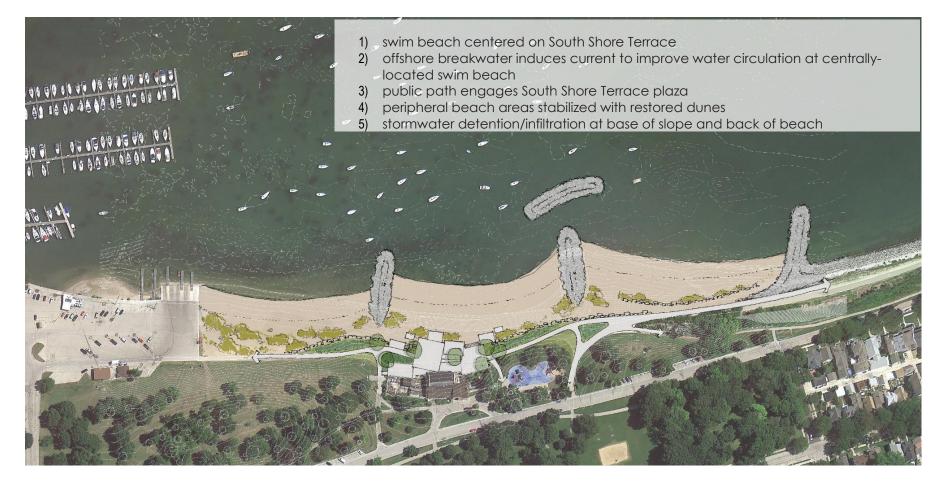
APPENDIX A

Initial Beach Alternatives

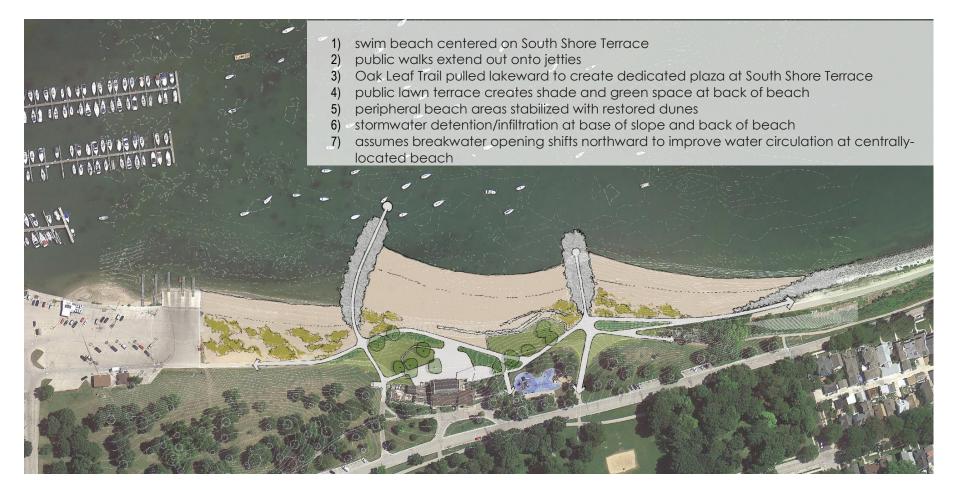
Initial Alternatives – Alt A



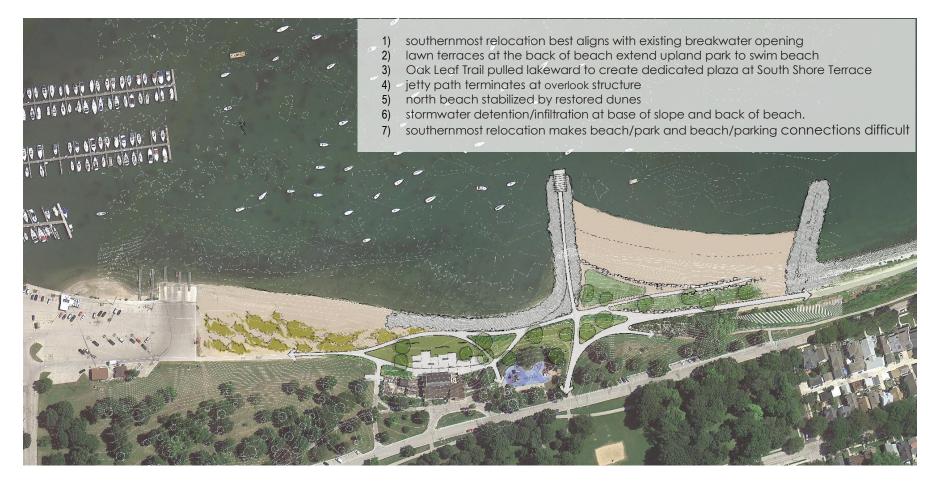
Initial Alternatives – Alt B



Initial Alternatives – Alt C



Initial Alternatives – Alt D



Milwaukee County Department of Administrative Services

South Shore Beach Improvements

Basis of Design

APPENDIX B

Opinion of Probable Construction Cost for the Beach Alternatives

Client	Milwaukee County
Project	South Shore Park - Beach Masterplan
Project #	10451
Detail	prelimnary cost opinions on beach alternative
Date	4/16/2018
	Alternative 1

Division	Item	Quantity Unit		Unit Cost	lt	em Total	Subtotal
01	General Requirements					\$	210,500.0
1. 01 21	Allowances - testing	1 LS	\$	5,000.00	\$	5,000	
2.015436	Mobilization	1 LS	\$	200,000.00		200,000	
3. 01 58 13	Temporary Project Signage	1 LS	\$	500.00		500	
4. 01 71 23	Construction Layout	1 LS	\$	5,000.00	\$	5,000	
02	Existing conditions	45.000 014		45.00		\$	225,000.00
1. 02 41 13	Remove existing TBM Material	15,000 CY	\$	15.00	\$	225,000	
03 1, 03 30 53	Concrete Miscellaneous Cast-In-Place Concrete	0 SF	\$		\$	\$; -
		v or	Ŷ		Ŷ	-	
10	Specialties Signage	1 LS	\$	3,000.00	\$	3,000	3,000.00
			Ť	0,000.00	•	5,000	121.000-00
31	Earthwork	110	¢	6.000.00	¢	6 000	124,888.89
1. 31 11 10	Clearing and Grubbing of Land	1 LS	\$	6,000.00		6,000	
2. 31 22 13	Rough Grading Sites	1 LS	\$	25,000.00		25,000	
3. 31 22 16	Fine Grading General Fill - at existing Beach	1 LS 2.778 CY	\$ \$	25,000.00 14.00		25,000 38,889	
4. 31 23 23.17 5. 31 25	General Fill - at existing Beach Erosion and Sedimentation Controls	2,778 CY 1 LS	\$ \$			38,889	
5. 31 25 6. 31 41 16	Erosion and Sedimentation Controls Sheet Piling	0 FF	\$ \$	30,000.00 35.00		30,000	
	-	VFF	Ŷ	33.00	Ф		
32 1, 32 12 16	Exterior Improvements	2,500 sf		7.00	¢	17.500	404,131.50
	Hardscape Stone Potsining Wallo	· · · · · · · · · · · · · · · · · · ·	\$	150.00		17,500	
2. 32 32 53	Stone Retaining Walls	0 LF 8.150 SF	\$	150.00		81.500	
3. 32 91 13.26 4. 32 92 23	Planting Beds/Stormwater Seeded Lawn	4,136 SY	\$ \$	4.50		81,500	
4. 32 92 23	Seeded Lawn Seeded Prairie Restoration	63,400 SY	\$ \$	6.00		24.818	
	Beach Grasses	0.5,400 ST	\$	2.00		126,800	
7. 32 93 23.10		900 Each	ŝ	20.00		18,000	
8. 32 93 33	Shrubs	40 Each	\$ \$	110.00		4,400	
9, 32 93 43	Trees	40 Each 17 Each	ŝ	500.00		8,500	
	Stairs	10 Treads	ŝ	600.00		6,000	
11. 32 16 00	Concrete Path on Breakwater	2,800 SF	ŝ	35.00		98,000	
33	Utilities					\$	6,000.00
1. 33 46 16	Subdrainage Piping	1 LS	\$	6,000.00	\$	6,000	
35	Waterways and Marine Construction					\$	1,642,918.28
1. 35 31 19	Armor Stone	6,324 Ton	\$	80.00		505,920	
2. 35 31 19	Filter Stone & Core Stone	5,394 Ton	\$	70.00		377,580	
3.	Beach Sand Fill	10,556 CY	\$	50.00		527,778	
4.	Beach Soil Fill	3,938 CY	\$	10.00		39,380	
5.	Revetment	1,871 Ton	\$	55.00		102,911	
6.	Dunes Outble Decel	0 CY	\$	20.00		-	
7.	Cobble Beach	0 Ton	\$	40.00		-	
8.353119	Salvaged Existing Revetment	0 Ton 2.142 Ton	\$	18.00		53 550	
9. 35 31 19 10. 35 31 19	Salvaged Existing Breakwater (Armor Stone) Salvaged Existing Breakwater (Core Stone)	2,142 Ion 1,790 Ton	\$ \$	25.00 20.00		53,550 35,800	
10. 33 31 13		1,730 TON	\$	20.00	•	55,000	
	Construction Subtotal	42					\$ 2,616,439
	Bonds and Insurance	1%				S	
	Contractor Fee	0%				S	
	Phasing	0%				\$	
	Escalator Construction Total	2.0%		1	years		
	Construction Total					1	
	Design/Engineering/Permits	6%					
	Design/Engineering/Permits Construction Contingency & Remaining Elements	6% 25%				S	

www.smithgroupjjr.com

Client Milwaukee County Project South Shore Park - Beach Masterplan 10451 Project # Detail prelimnary cost opinions on beach alternative Date 4/16/2018 Alternative 2

Item Division Quantity Unit Unit Cost Item Total Subtotal General Requiren \$ 210,500.00 01 5.000.00 \$ 5.000.00 1.0121 Allowances - testing 1 LS \$ 2.015436 Mobilization 200.000.00 \$ 200.000.00 115 \$ 3.015813 500.00 \$ 500.00 Temporary Project Signage 1 L S \$ 5.000.00 4.017123 Construction Layout 1 LS \$ 5.000.00 \$ 02 Existing conditions 0 CY 15 00 \$ 1 02 41 13 Remove existing TBM Material \$ Concrete 03 1 03 30 53 Miscellaneous Cast-In-Place Concrete 0 SF \$ - \$ Specialties 10 \$ 3.000.00 1, 10 14 Signage 1 LS \$ 3.000.00 \$ 3.000 Earthwork \$ 124,888.89 1, 31 11 10 6.000.00 Clearing and Grubbing of Land 6.000.00 \$ 1 LS \$ 2. 31 22 13 Rough Grading Sites 25,000.00 \$ 25,000.00 1 LS \$ 25,000.00 3. 31 22 16 Fine Grading 25.000.00 \$ 115 \$ 4. 31 23 23.17 14.00 \$ 38,888.89 General Fill - at existing Beach 2.778 CY \$ 5. 31 25 30.000.00 \$ 30.000.00 **Erosion and Sedimentation Controls** 115 \$ 6. 31 41 16 Sheet Piling 0 FF 35.00 \$ \$ \$ 341,591.67 Exterior Improvements 1. 32 12 16 49,000 7.000 sf 7.00 \$ Hardscape \$ 2. 32 32 53 690 LF 150.00 \$ 103,500 Stone Retaining Walls \$ 3. 32 91 13.26 Planting Beds/Stormwater 7.268 SF 10.00 \$ 72,680 \$ 4. 32 92 23 3,488 SY 4.50 \$ 15,695 Seeded Lawn \$ 6.00 \$ 5. 32 92 23 Seeded Prairie Restoration 7,044 SY 42,267 \$ 6. 32 93 13.40 Beach Grasses 2.00 \$ 0 SF \$ 20.00 \$ 7. 32 93 23.10 Perennials 28,000 1.400 Each \$ 8. 32 93 33 75 Each 110.00 \$ 8,250 Shrubs \$ 9. 32 93 43 500.00 \$ 9,000 18 Each Trees \$ 10. 32 06 10.20 Stairs 600.00 \$ 22 Treads 13 200 \$ 11 32 16 00 Concrete Path on Breakwater 0 SF 35.00 \$ \$ \$ 6,000.00 33 Utilities 1, 33 46 16 Subdrainage Piping 6.000 1 LS \$ 6.000.00 \$ Waterways and Marine Construction \$ 1,986,823.87 6,486 Ton 80.00 \$ 518,880 Armor Stone \$ 385,490 2. Filter Stone & Core Stone 5,507 Ton 70.00 \$ \$ Beach Sand Fill 16.111 CY 50.00 \$ 805,556 3 \$ 13,206 CY 10.00 \$ 132,060 4 Beach Soil Fill \$ 55.00 \$ 16,500 5 300 Ton Revetment \$ 50.00 š 6 0 CY \$ Dunes Cobble Beach 0 Ton 40.00 \$ 7. \$ Salvaged Existing Revetment 2,166 Ton 18.00 \$ 38,988 8 \$ 53,550 Salvaged Existing Breakwater (Armor Stone) 2,142 Ton 25.00 9 \$ \$ 10. 1,790 Ton 35,800 Salvaged Existing Breakwater (Core Stone) 20.00 \$ \$ **Construction Subtotal** 2,672,804 ŝ Bonds and Insurance 1% 26,700 \$ 0% Contractor Fee Ŝ 0% Phasing \$ 53.000 Escalator 2.0% 1 years \$ **Construction Total** 2,752,504 ŝ Design/Engineering/Permits 6% 165.200 Construction Contingency & Remaining Elements 25% 688,100 \$ 3,605,804

Project Total (Construction, design, contingency and permitting)

www.smithgroupjjr.com

\$

Client	Milwaukee County
Project	South Shore Park - Beach Masterplan
Project #	10451
Detail	prelimnary cost opinions on beach alternative
Date	3/9/2018
	Alternative 3

Division	ltem	Quantity Unit	:	Unit Cost	Item Total	Subtotal
01	General Requirements					\$ 270,500.00
1. 01 21	Allowances - testing	1 LS	\$	5,000.00	\$ 5,000	¥ 210,300.00
2. 01 54 36	Mobilization	1 LS	ŝ	260,000.00		
3. 01 58 13	Temporary Project Signage	1 LS	Ş	500.00		
4. 01 71 23	Construction Layout	1 LS	\$	5,000.00	\$ 5,000	
02	Existing conditions				-	\$ 225,000.00
1. 02 41 13	Remove existing TBM Material	15,000 CY	\$	15.00	\$ 225,000	
03	Concrete					\$
1. 03 30 53	Miscellaneous Cast-In-Place Concrete	0 SF	\$	-	\$-	
10	Specialties					\$ 3,000.00
1. 10 14	Signage	1 LS	\$	3,000.00	\$ 3,000	-,
31	Earthwork					\$ 164,888.89
1. 31 11 10	Clearing and Grubbing of Land	1 LS	\$	6,000.00	\$ 6.000	\$ 104,000.0 <u>3</u>
2. 31 22 13	Rough Grading Sites	1 LS	ŝ	45,000.00		
3. 31 22 16	Fine Grading	1 LS	š	45,000.00		
	17 General Fill - at existing Beach	2,778 CY	š	14.00		
4. 31 23 23. 5. 31 25	Erosion and Sedimentation Controls	2,778 CT 1 LS	ŝ	30,000.00		
6. 31 41 16	Sheet Piling	0 FF	ŝ	- 30,000.00		
0. 3141 10	Sheet Filling	VTF	Ŷ	-	φ -	
32	Exterior Improvements					\$ 373,566.67
1. 32 12 16	Hardscape	7,000 SF	\$	7.00	· · · · · · · · · · · · · · · · · · ·	
2. 32 32 53	Stone Retaining Walls	0 LF	\$	150.00		
	26 Planting Beds/Stormwater	8,650 SF	\$	10.00		
4. 32 92 23	Seeded Lawn	4,400 SY	\$	4.50		
5. 32 92 23	Seeded Prairie Restoration	7,044 SY	\$	6.00	\$ 42,267	
6. 32 93 13.4	40 Beach Grasses	18,000 SF	\$	2.00	\$ 36,000	
7. 32 93 23.	10 Perennials	1,200 Each	\$	20.00	\$ 24,000	
8. 32 93 33	Shrubs	50 Each	\$	110.00	\$ 5,500	
9. 32 93 43	Trees	25 Each	ŝ	500.00		
10. 32 06 10.		0 Treads	š	600.00	· · · · · ·	
11. 32 16 00	Concrete Path on Breakwater	2,800 SF	ŝ	35.00		
33	Utilities					\$ 6,000.00
1. 33 46 16	Subdrainage Piping	1 LS	\$	6,000.00		ə 0,000.00
				-	-	
35 1.	Waterways and Marine Construction Armor Stone	7,600 Ton	s	80.00		\$ 2,168,105.78
2.	Filter Stone & Core Stone	6,039 Ton	š	70.00	· · · · · ·	
3.	Beach Sand Fill		ŝ	50.00	1	
		17,589 CY			1	
4.	Beach Soil Fill	3,024 CY	S	10.00		
5.	Revetment	300 Ton	S	55.00	1	
6.	Dunes	2,081 CY	\$	20.00		
7.	Cobble Beach	1,031 Ton	\$	40.00		
8.	Salvaged Existing Revetment	2,166 Ton	\$	18.00		
9.	Salvaged Existing Breakwater (Armor Stone)	2,142 Ton	\$	25.00		
10.	Salvaged Existing Breakwater (Core Stone)	1,790 Ton	\$	20.00	\$ 35,800	
	Construction Subtotal					\$ 3,211,061
	Bonds and Insurance	1%				\$ 32,100
	Contractor Fee	0%				\$
	Phasing	0%				s -
	Escalator	2.0%		1		
	Construction Total	694				c 100 400
	Design/Engineering/Permits	6% 25%				\$ 198,400 \$ 926,900
		6% 25%				\$ 198,400 \$ 826,800

www.smithgroupjjr.com

Client	Milwaukee County
Project	South Shore Park - Beach Masterplan
Project #	10451
Detail	preliminary cost opinion on beach alternatives
Date	6/7/2018
	Alternative 4

Division	ltem	Quantity Unit		Unit Cost	lt	em Total	Subtotal
01	General Requirements					\$	210,500.0
1. 01 21	Allowances - testing	1 LS	S	5,000.00	S	5,000	210,000.0
2. 01 54 36	Mobilization	1 LS		200.000.00		200,000	
3. 01 58 13	Temporary Project Signage	1 LS	S	500.00		500	
4. 01 71 23	Construction Layout	1 LS	S	5,000.00		5,000	
4. 017123	Constitution Edyour	1 63	0	0,000.00	Ŷ	0,000	
02	Existing conditions					\$	225,000.0
1. 02 41 13	Remove existing TBM Material	15,000 CY	S	15.00	\$	225,000	
03	Concrete					\$	
1. 03 30 53	Miscellaneous Cast-In-Place Concrete	0 SF	S	-	\$		
10	Specialties					\$	3,000.0
1. 10 14	Signage	1 LS	\$	3,000.00	\$	3,000	
31	Earthwork					\$	80,000.0
1. 31 11 10	Clearing and Grubbing of Lanc	1 LS	S	6,000.00	\$	6,000	00,000.0
2 31 22 13	Rough Grading Sites	1 LS	S	22,000.00		22,000	
3. 31 22 16	Fine Grading	1 LS	S	22,000.00	S	22,000	
4. 31 23 23.17	General Fill - at existing Beach	2,778 CY	S	-	\$	-	
5. 31 25	Erosion and Sedimentation Controls	1 LS	S	30,000.00	\$	30,000	
6. 31 41 16	Sheet Piling	0 FF	S	35.00	\$	-	
32	Exterior Improvements					\$	306,131.5
1. 32 12 16	Hardscape	2,500 sf	S	7.00	S	17,500	
2. 32 32 53	Stone Retaining Walls	0 LF	S	150.00	S	-	
	Planting Beds/Stormwater	8,150 SF	S	10.00	S	81,500	
4. 32 92 23	Seeded Lawn	4,136 SY	S	4.50	\$	18,614	
5. 32 92 23	Seeded Prairie Restoration	63,400 SY	S	6.00	S	24,818	
	Beach Grasses	0 SF	S	2.00	S	126,800	
7. 32 93 23.10		900 Each	S	20.00		18,000	
8. 32 93 33	Shrubs	40 Each	S	110.00		4,400	
9. 32 93 43	Trees	17 Each	S	500.00		8,500	
0. 32 06 10.20		10 Treads	S	600.00	S	6,000	
1. 32 16 00	Concrete Path on Breakwater	0 SF	S	35.00		-	
33	Utilities					\$	6,000.0
1. 33 46 16	Sub-drainage Piping	1 LS	\$	6,000.00	\$	6,000	0,000.0
35	Waterways and Marine Construction					\$	1,360,747.1
1. 35 31 19	Armor Stone	3,537 Ton	Ş	80.00	\$	282,960	1,000,141.1
2 35 31 19	Filter Stone & Core Stone	7,564 Ton	S	70.00	S	529,480	
3.	Beach Sand Fill	6,333 CY	S	50.00	S	316,667	
4.	Beach Soil Fill	3,938 CY	S			39,380	
5.	Revetment	1,871 Ton	S		S	102,911	
6.	Dunes	0 CY	S	20.00		-	
7.	Cobble Beach	0 Ton	S	40.00			
8. 35 31 19	Salvaged Existing Revetment	0 Ton	S	18.00	100	-	
9. 35 31 19	Salvaged Existing Breakwater (Armor Stone)	2,142 Ton	S	25.00		53,550	
0. 35 31 19	Salvaged Existing Breakwater (Core Stone)	1,790 Ton	S	20.00		35,800	
	Construction Subtotal					\$	2,191,379
	Bonds and Insurance	1%				\$	
	Contractor Fee	0%				Ф \$	
	Phasing	0%				۵ ۶	
	Escalator	2.0%		1	years		
	Construction Total				,	\$	
	Design/Engineering/Permits	6%				\$	135,40
							50100
	Construction Contingency & Remaining Elements	25%				\$	564,30

www.smithgroupjjr.com

Milwaukee County Department of Administrative Services

South Shore Beach Improvements

Basis of Design

APPENDIX C

Model Graphics

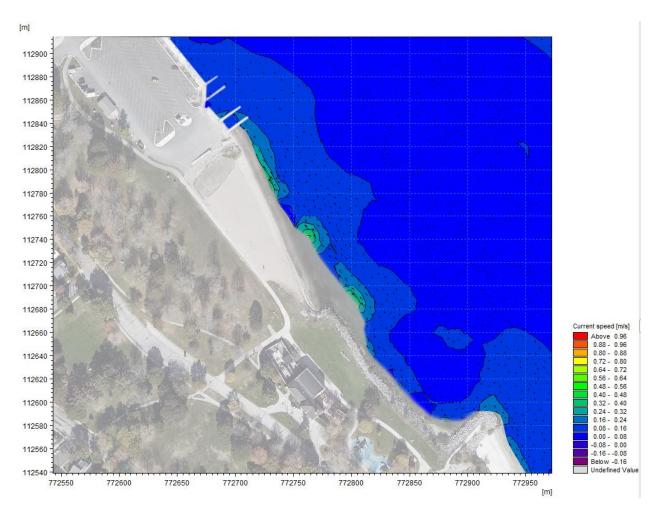


Figure 49: E_1yr

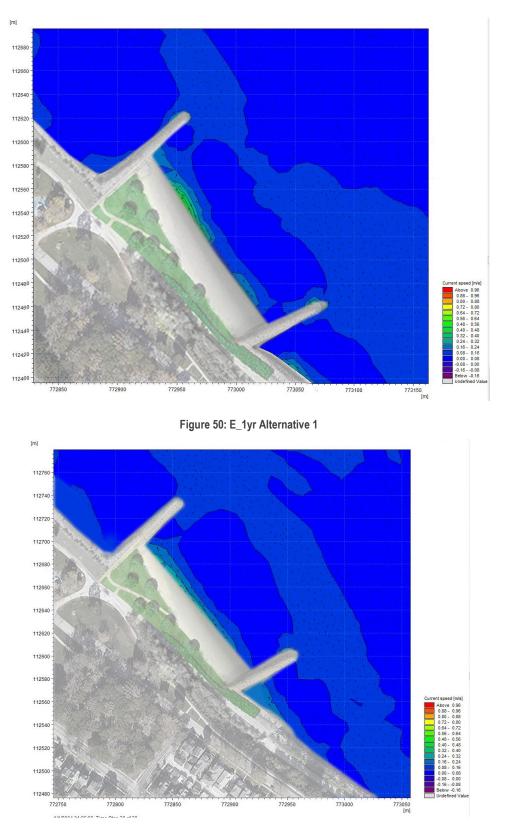


Figure 51: E_1yr Alternative 2

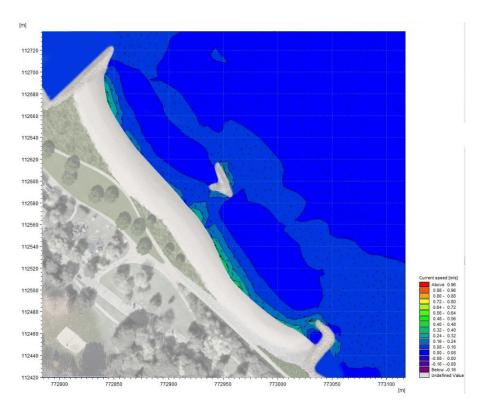
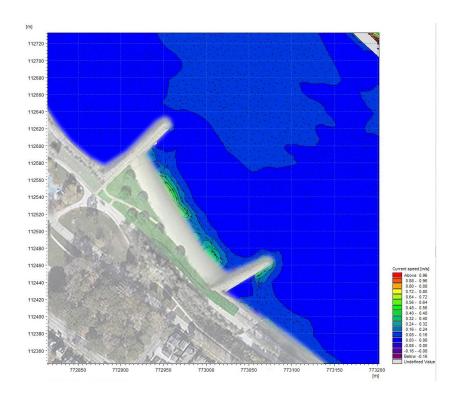
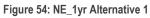


Figure 52: E_1yr Alternative 3



Figure 53: NE_1yr





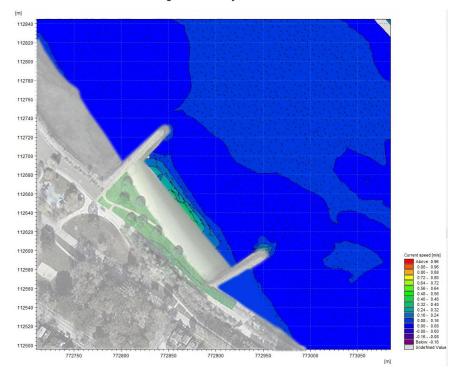


Figure 55: NE_1yr Alternative 2



Figure 56: NE_1yr Alternative 3

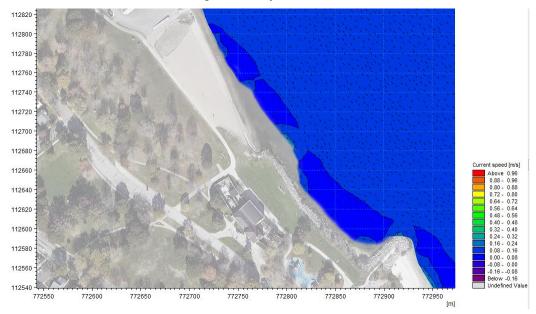


Figure 57: NNE_1yr

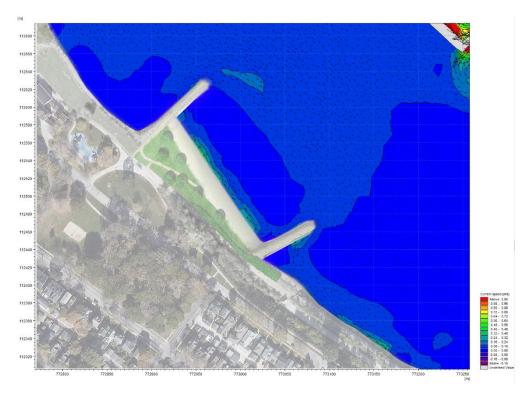


Figure 58: NNE_1yr Alternative 1



Figure 59: NNE_1yr Alternative 2



Figure 60: NNE_1yr Alternative 3

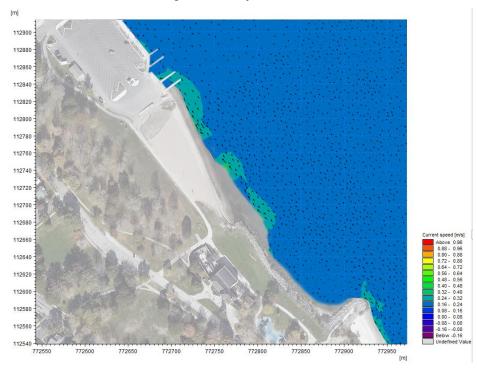
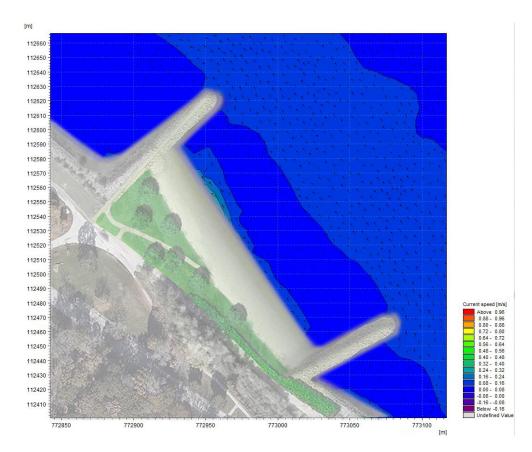
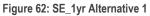


Figure 61: SE_1yr





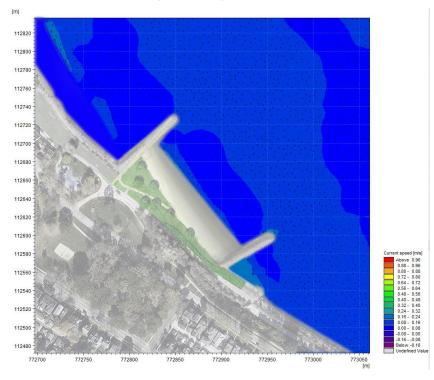


Figure 63: SE_1yr Alternative 2

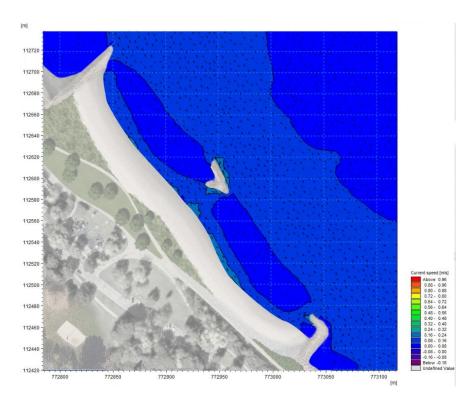


Figure 64: SE_1yr Alternative 3

Milwaukee County Department of Administrative Services

South Shore Beach Improvements

Coastal Report

APPENDIX D

Stormwater Report

8.1. Sediment Loading Analysis

Pollutant loading for existing conditions was estimated using both the WinSLAMM and STEPL computer programs.

8.1.1. WinSLAMM Modeling Methodology

WinSLAMM is commonly used in Wisconsin to evaluate the relationships between sources of urban nonpoint source pollutants and the discharge of pollutants downstream. The model also evaluates the pollutant trapping capabilities of stormwater BMP's, such as the biofiltration basins located in the yacht club parking lot.

8.1.2. WinSLAMM Parameter Files

WinSLAMM requires a series of parameters to simulate pollutant probability distribution, source area runoff coefficients, particle size distributions, and pollutant delivery characteristics. Parameter files used for the analysis were selected based on DNR requirements, as summarized below:

- Pollutant Probability Distribution File WI_GEO01.ppd
- Runoff Coefficient File WI_SL06 Dec06.rsv
- Particulate Solids Concentration File WI_avg01.psc
- Particulate Residue Delivery File WI_dlv01.prr
- <u>Street Delivery Files:</u>
- Residential/Other WI_Res and Other Urban Dec06.std
- Institutional/Commercial/Industrial WI_Com Inst Indust Dec06.std
- Freeway Freeway Dec06.std
- Rain Files WisReg Milwaukee WI 1969.RAN

STEPL Modelling Methodology

Spreadsheet Tool for Estimating Pollutant Load (STEPL) is a model developed for the EPA which uses simple algorithms to calculate nutrient and sediment loads from different land uses and the load reductions that would result from the implementation of various best management practices (BMPs). It computes watershed surface runoff; nutrient loads, including nitrogen, phosphorus, and BOD5; and sediment delivery based on various land uses and management practices. The sediment and pollutant load reductions that result from the implementation of BMPs are computed using the known BMP efficiencies.

STEPL Parameters and Assumptions

- Milwaukee Mitchell AP Weather Station, 32 total inches of rain in 124 storm events annually
- All tributary area is considered "Urban", as no crop or pasture land is present onsite.
- Septic system leakage was not included
- Hydrologic soil group: C
- Existing Bioretention BMP's were included assuming 63% Nitrogen reduction, 80% Phosphorous reduction, and 80% TSS reduction for all runoff draining to the engineered soil.

8.2. Existing Land Use

Approximately 34 acres were included in the WinSLAMM model. The South Shore site was divided into 5 sub-basins (Figure1) The Sub-basins include: (1) the existing beach area, (2) an area draining directly to the lake via storm sewer, (3) a portion of the yacht club discharging directly to the lake, (4) the area draining to the yacht club parking lot biofiltration basins, (5) the area southwest of the spur. Other adjacent areas drain directly to a combined sewer owned by MMSD. For each sub-basin, specific pollutant source areas (such as parking lots, roadways, and other impervious areas) were quantified using shapefiles and aerial photos available from Milwaukee County. The models also include the biofiltration basins. The cross-section of the biofiltration basins was not known, but it was assumed that the minimal DNR requirements in Tech Standard 1004 were met, and 80% TSS removal was achieved for runoff flowing through the engineered media.



Watershed	Urban Area (ac.)	Industrial %	Institutional %	Transportation %	Single-Family %	Open Space %
1	6.2	0	40	0	0	60
2	8.6	0	9	13	0	78
3	4.82	63	0	0	0	37
4	7.77	42	0	7	29	22
5	6.78	0	35	0	0	65

Table 1. Assumed Urban land use distribution

Table 2. Pollutant Source Areas

Subbasin #	1	2	3	4	5
Location	Ex. Beach	Inland ST.	NW-Shore	NW-Yacht Club	SE of Spur
Source Area	(ac)	(ac)	(ac)	(ac)	(ac)
Roof-Sloped	0.38	-	0.08	0.54	-
Parking	-	0.24	1.82	2.91	0.00
Driveway	-	-	-	0.34	-
Sidewalk	0.64	0.42	0.64	0.24	0.98
Street	0.00	1.11	-	0.56	0.00
Small Landscape	3.73	6.74	1.80	3.03	4.42
Other Pervious	0.85	0.09	0.33	-	0.44
Other Impervious	0.60	-	0.15	0.15	0.94

8.3. <u>Results</u>

As indicated in Table 3, the WinSLAMM model estimates that 8,065 pounds of TSS would be generated from the 34acre area. Existing BMP's, including the biofiltration basins capture 2,574 pounds annually. This results in a TSS reduction of 32% for the overall site.

As indicated in **Error! Reference source not found.**le 4, the STEPL model estimates that approximately 6,201 pounds of TSS would be generated from the 34-acre site. The existing BMP's, including the Biofiltration Basins capture 1,768 pounds annually. This results in a TSS reduction of 80% for the area treated and approximately 25% for the overall site.

For each sub-basin, the annual pollutant loading is calculated based on the runoff volume and the pollutant concentrations in the runoff water. Each of the two models has unique empirical coefficients used to calculate pollutant runoff so it's not unexpected that the models would have somewhat different results.

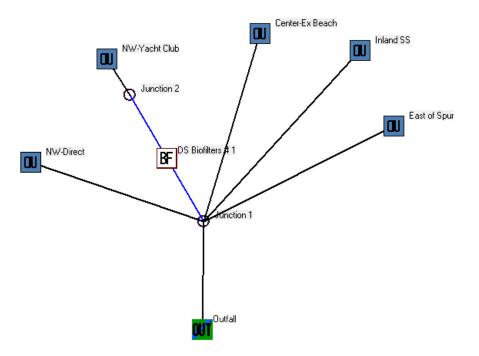
Table 3. SLAMM TSS Loading

Watershed	TSS Load (no BMP)	TSS Load (with BMP)	TSS Reduction
	lb/year	lb/year	lb/year
1	649.4	649.4	0.0
2	1964.5	1964.5	0.0
3	1570.3	1570.3	0.0
4	3130.0	3130.0	2574.0
5	750.6	750.40	0.0
Total Urban	8064.8	5897.7	2574.0

Table 4. STEPL TSS Loading

Watershed	TSS Load (no BMP)	TSS Load (with BMP)	TSS Reduction
	lb/year	lb/year	lb/year
1	781.6	781.6	0.0
2	1565.9	1565.9	0.0
3	1120.2	1120.2	0.0
4	1906.5	384.8	1521.8
5	826.9	826.9	0.0
Total Urban	6201.1	4679.4	1521.8

WinSLAMM Model Input



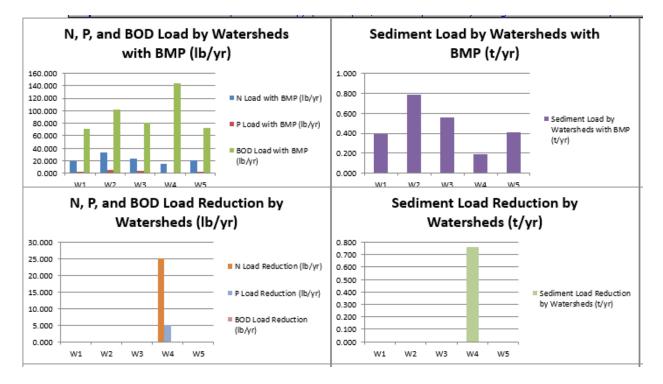
WinSLAMM Model Results

			Outfall O	utput	Summary				Percent
		Runoff Volur (cu. ft.)	me Percent F Reduc		Runoff Coefficient (R∨)	Particulate S Conc. (mg/		articulate Solids Yield (Ibs)	Particulat Solids Reductio
Total of	All Land Uses without Controls	1.018E+0	06	Γ	0.25	12	6.9	8065	
	Outfall Total with Controls	84683	39 16.8	1%	0.21	10:	3.9	5490	31.93
Current	File Output: Annualized Total After Outfall Controls	85860	0 Years	s in Model	Run: 0	.99		5567	
	Pollutant	Concen- tration - No Controls	Concen- tration - With Controls	Concen- tration Units	Pollutant Yield • No Controls	Pollutant Yield • With Controls	Pollutant Yield Units	Percent Yield Reduction	
	Particulate Solids	126.9	103.9	mg/L	8065	5490	lbs	31.93 %	-
	Filterable Solids	65.92		mg/L	4188	3609		13.84 %	
	Total Solids	192.9	172.1	mg/L	12253	9099	lbs	25.74 %	-
Summar F	Dutput y to Text lie File	,	odeled (ac) 170			Re	ceivino	g Water Im	pacts
otal C	Control Practice Cost	S					-	tormwater	•
apital Co	st N/A						(CWP Im	pervious Cover M	odel)
and Cost								Calculated I	Approxima Jrban Stre Classificati
iniuar me	aintenance Cost N/A				erform Outfall				ciassincad

STEPL Model input

State Wisconsin		County Milwaukee	•	Weather Sta			•	Calculate Ma	anure Applica	tion Months:	Manure Application
								Rain correction factors			
1. Input watershed land use area (ac) and precipitation (in)								0.853	0.399		
					User		Feedlot Percent		Annual		Avg.
Watershed	Urban	Cropland	Pastureland	Forest	Defined	Feedlots	Paved	Total	Rainfall	Rain Days	Rain/Event
W1	6.2	0	0	0	0	0	0-24%	6.2	32	115	0.590
W2	8.6	0	0	0	0	0	0-24%	8.6	32	115	0.590
W3	4.82	0	0	0	0	0	0-24%	4.82	32	115	0.590
W4	7.77	0	0	0	0	0	 0-24% 	7.77	32	115	0.590
W5	6.78	0	0	0	0	0	0-24%	6.78	32	115	0.590

STEPL Model Results



Milwaukee County Department of Administrative Services

South Shore Beach Improvements

Coastal Report

APPENDIX E

Wetland Delineation Report

WETLAND DELINEATION REPORT South Shore Park Beach Re-location Project

Delineation #16.2017

October 23, 2017



Alice Thompson Carissa Anich Thompson and Associates Wetland Services, LLC 1514 Menomonee Ave. South Milwaukee, WI 53172 (414) 571-8383 www.thompsonwetlands.com



the professional opinion of Thompson and Associates. These are suggested categories however the WDNR may modify these in their permit review. For example, some of the characteristics of a Highly Susceptible wetland may not be apparent to Thompson due to confidential data or data beyond the scope of this delineation (eg: Rare Species, high quality trout stream etc.).

The wetland line staked in the field by Thompson and Associates Wetland Services is an estimate of the wetland boundary and the opinions presented in this report are best estimates of the conditions at the time the wetlands were delineated.

Alice Thompson, lead delineator, is an Assured Delineator as explained at the Wisconsin Department of Natural Resources' (the "WDNR") web site, at http://www.dnr.state.wi.us/org/water/fhp/wetlands/boundaries.html. The WDNR considers Thompson's wetland delineation work to be "Assured" for purposes of Wisconsin waterway and wetland permits, such that Thompson's clients do not need to wait for concurrence letters from the WDNR before relying on such delineations and may expect that wetland delineation issues should not be the cause of delays in state waterway and wetland permit decisions.

Thompson's work is reviewed annually by the WDNR Wetland ID program and one site a year is field verified as part of Thompson's continued assurance status. A client will be notified if their site is going to be spot-checked, and no additional fees will be required. The Assurance Program has a code of ethics that includes high moral and ethical standards and clear and scientifically accurate reporting to the WDNR. All of Thompson's reports are filed with the WDNR Wetland ID program, unless the client does not want to utilize the report and findings. Any work not filed with the WDNR is not valid.

Wetlands and waterways that are considered waters of the U.S. are subject to regulation under Section 404 of the Clean Water Act (CWA) and the jurisdictional regulatory authority lies with the U.S. Army Corps of Engineers (USACE). Additionally, the Wisconsin Department of Natural Resources (WDNR) has regulatory authority over wetlands, navigable waters, and adjacent lands under Chapters 30 and 281 Wisconsin State Statutes, and Wisconsin Administrative Codes NR 103, 299, 350, and 353. As of 2015, the USACE and WDNR have jurisdictional authority to determine which features are exempt including stormwater ponds and conveyance features. If the client proposes to modify a stormwater feature, the WDNR will need to determine its exemption status. Contact the Wetland Identification Program for assistance, this will involve a fee. Furthermore, municipalities, townships and counties may have local zoning authority over certain areas or types of wetland and waterways. The determination that a wetland or waterway is subject to regulatory jurisdiction is made independently by the agencies. As a result, there may be adjustments to boundaries or jurisdiction based upon review of a regulatory agency.

Any activity in the delineated wetland may require U.S. Army Corps of Engineers permits and State of Wisconsin Department of Natural Resources Water Quality Certification, and local government permits. If the Client proceeds to change, modify or utilize the property in question without obtaining authorization from the appropriate regulatory agency, it will be done at the Client's own risk and Thompson and Associates Wetland Services shall not be responsible or liable for any resulting damages.

This field work and report is not intended to meet the requirements of an SEWRPC Environmental Corridor, WDNR Endangered Species Review, a navigability determination, or the location of either the Ordinary High Water Mark or floodplain.

APPENDICES:

- 1. Field Photographs
- 2. Figures
 - Figure 1. Location Map
 - Figure 2. NWS Departure from Mean Precipitation Maps
 - Figure 3. 2-ft Contour Map
 - Figure 4. Soil Map & Hydric Soil List with Minor Soils
 - Figure 5. Wisconsin Wetland Inventory
 - Figure 6. Wetland and Data Point Locations
- 3. Field Data and Results
 - Table 1. Significantly Disturbed and Problem Areas
 - Data Sheets



ROUTINE METHODOLOGY FOR DELINEATING WETLANDS

This delineation was performed according to guidelines set by the <u>U.S. Army Corps of Engineers</u> <u>1987 Manual</u> and either the <u>2012 Regional Supplement to the Corp of Engineers Wetland</u> <u>Delineation Manual: Northcentral and Northeastern Region</u>, or the <u>2010 Regional Supplement to</u> <u>the Corp of Engineers Wetland Delineation Manual: Midwest Region</u>, depending on which region the site occurs within per US Army Corps of Engineers guidance. Additional DNR requirements and guidance that were presented at wetland delineation training courses offered by UW-Extension have also been incorporated. The most recent of these workshops we attended that provided current guidance was the Critical Methods in Wetland Delineation Workshop in March of 2017.

Maps used during the delineation included site location map, NRCS County soil maps, U.S.G.S. topographic map, Wisconsin Wetland Inventory Map, and aerial photography. NRCS Wetland Inventory Maps are provided when available and pertinent. Soil taxonomy is obtained from the NRCS Official Soil Series Descriptions (OSD). The indicator plant status was taken from the State of Wisconsin 2016 Wetland Plant List authored by Lichvar, R.W., D.L. Banks, W.N.Kirchner, and N.C. Melvin. The National Wetland Plant List: 2016 wetland ratings. U.S. Army Corps of Engineers. When an indicator was not given then the indicator listed in the Plants of the Chicago Region by Floyd Swink and Gerould Wilhelm (1994) was used. Typha plants area not identified to species level as recent research by Dr. Pamela Geddes documents the inability to accurately identify to species using current field characteristics. The reference for landform descriptors is: Schoeneberger, P.J., Wysocki and Benham. 2012. Field Book for describing and sampling soils, Version 3.0, NRCS, Lincoln, NE. The NOAA Advanced Hydrologic Prediction Service Departure from Normal Map is used to calculate the 90 day departure from normal on the day of the delineation, and the 90 day percent of mean departure from normal. This NOAA data set uses radar, satellite data, and observed data from the 12 CONUS River Forecast Center. The NOAA "normal" precipitation is derived from PRISM climate data created at Oregon State University. As of 2015 the 30 year PRISM Normals have been updated utilizing the 1981-2010 dataset. The location of the project is geo-referenced on the map.

Data points were set in areas that exhibited obvious wetland and obvious upland characteristics. The location of each data point is in the midpoint of the number on the aerial map "Data Point Locations". At each data point, vegetation was identified, soils described, and hydrology noted. Vegetation was recorded as species and absolute percent cover. Herbaceous vegetation, shrub, and tree cover were estimated in circular plots of approximately 5, 15, and 30 feet in radius, respectively, with the center point being the soil pit. If the entire circular plot was not located within a single plant community, then the plot shape was adjusted accordingly with the total plot area remaining equivalent to the circular plot area. The absolute cover was estimated as precisely as possible with low cover estimated as 1%, 3%, or 5%. Vegetation greater than 5% absolute cover was estimated in additional increments of 5%. The appropriate test (Rapid Assessment, Dominance, Prevalence or Morphological Adaptations test) was used to determine dominant vegetation. All plots with a 50% dominance of hydrophytes were evaluated with the Prevalence Index. The wetland boundary was staked and located between the wetland and upland data points, at a consistent break in vegetation, topography, and soils.



BIOGRAPHIES OF FIELD INVESTIGATORS

Alice L. Thompson, Owner, Assured Wetland Delineator

Alice L. Thompson is an independent wetland consultant and is certified by the Society of Wetland Scientists as a Professional Wetland Scientist (PWS). Thompson is a WDNR "assured" wetland delineator since 2006. She obtained a Master's degree in biological sciences at the University of Wisconsin-Milwaukee in 1995. Her professional interests include wetland restoration, mitigation, and the control of invasive plant species, especially reed canary grass. Ms. Thompson has satisfactorily completed the Wetland Delineation course offered by the Wisconsin Department of Administration, Coastal Management Program in 1998; the Advanced Wetland Delineation Training Workshop offered by the University of Wisconsin-La Crosse in 2002, 2008 and again in 2014; Advanced Hydric Soils offered by the Wetland Training Institute in 2004; the Primary Environmental Corridor Delineation Workshop offered by the Southeastern Wisconsin Regional Planning Commission in 2004; Wetland Plant Identification offered by Dr. Mohlenbrock, Biotic Consultants, 2003 and 2004; Ecological Geology Workshop, UWM Field Station, 2006; the Midwest Supplement Training offered by the US Army Corp of Engineers in 2009. Native Mussel Identification Workshop, UWM Field Station, 2012; and the Critical Methods in Wetland Delineation offered annually by the Wisconsin Department of Natural Resources in 2017 and seven previous years since 2006.

Aaron J. Menke, Field Assistant

Aaron J. Menke earned a Bachelor's degree in Applied Environmental Geography from University of Wisconsin-Parkside in 2013. Menke has worked in wetland consulting for Thompson and Associates for the past three years. His specialty includes utility environmental oversight and permitting, and construction environmental monitoring including on the high profile We Energies Germantown-Mequon Gas Main Replacement. Menke also assists on fieldwork including wetland delineation and wetland management. He previously worked as a Natural Resource Specialist at the Hawthorn Hollow Nature Sanctuary and Arboretum (Kenosha) from 2011-2013, and now serves as an advisor to the center. He was a Forestry Specialist for City of Kenosha in 2013, identifying, inventorying and mapping street trees. He has a Certificate in Geographic Information System (GIS) from UW- Parkside (2013). Mr. Menke has inventoried native vegetation, participated in varied wildlife surveys including Blanding's turtles, blue bird nest box monitoring, and removal of the invasive Red Swamp Crayfish in Kenosha. He attended the Wisconsin Wetlands Association Wetland Identification Workshop held in September, 2013 (Racine County). He has successfully completed the Basic Wetland Delineation course offered by the University of Wisconsin-La Crosse in 2014. He attended Critical Methods in Wetland Delineation offered by the Wisconsin Department of Natural Resource (UW-La Crosse) in 2015, 2016 and 2017.







Upper left– Stormwater swale adjacent parking lot– not a wetland

Middle– Stormwater swale and planted beach dune grass beyond– upland

Below-- View from above of Wetland A in swale adjacent rock beach



Upper left– Wetland A– three basins within depressions on rocky beach

Upper right— shovel with upland beach rock— no black coating on the left and wetland beach rock with black coating on the right

Right- close up of beach rock with black coatings in wetland ponded basin

Below left- Ponded wetland depression

Below right—Spray painted wetland line

















Upper left– Wetland A with rip rap revetment to the north

Upper right- close up of Wetland A

Middle left-view of beach facing north

Middle right– Spray paint edge of Wetland A

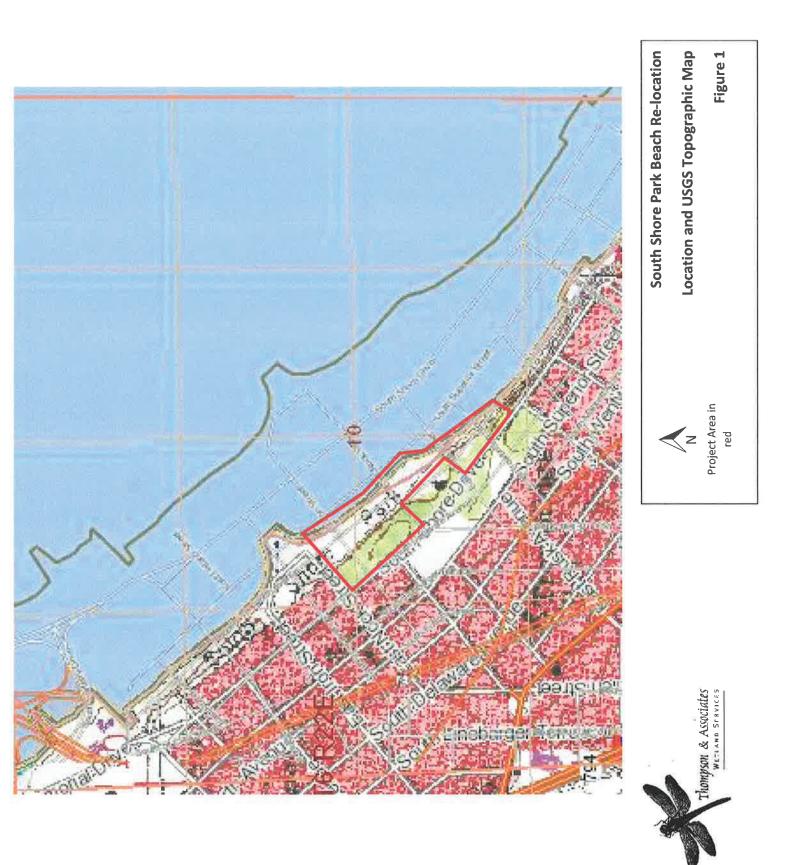
Lower left– Path facing south — uplands in right of photo, on slope, uplands in left of photo dropping down to rocky beach

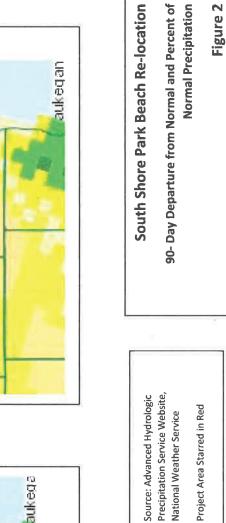


Upper left- Uplands on slope above path

Middle- facing north—Upland rocky shoreline in south end of project

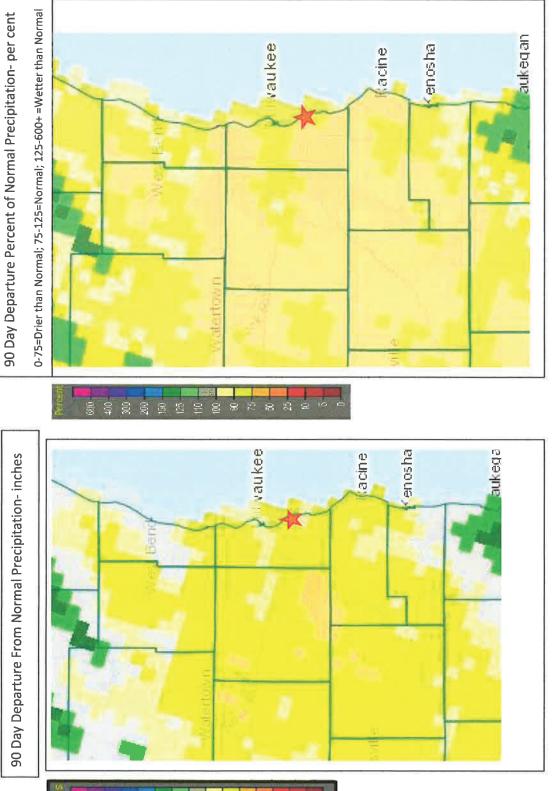
Lower left– Upland rocky shoreline facing south at south end of project







₹z



-8 12

16

9

8 9 4

8 2

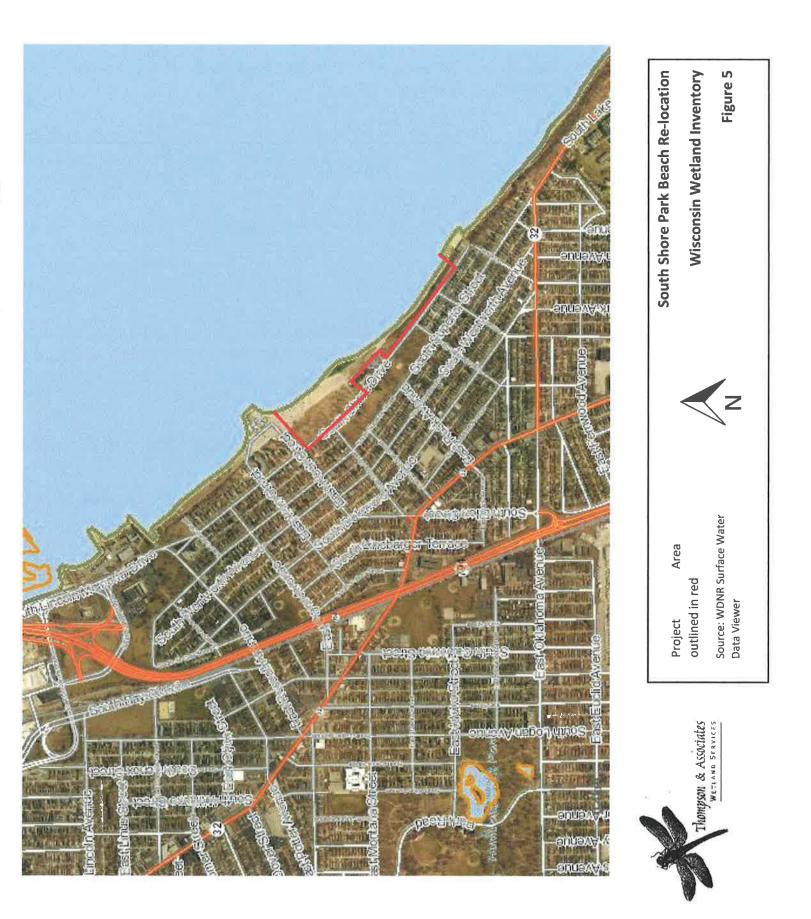
2

-













Fable 1. Site:	Summary of "Significantly South Shore Park Beach Re		and the second	-
	cantly Disturbed Areas	Corresponding Data Points	Description	Justification for wetland with less tha 3 parameters
	Farmed Field			
7	Managed plant community	1, 3, 11,	mowed lawn in park	
	Soil Removal			
I	Fill	1, 3, 4, 5, 6, 9, 10, 14	historic fill in established park including fill from the deep tunnel project dug by MMSD, also revetments, rip rap other shoreline stabilization features.	
	Subsurface Plow			
	Surface Layer Removed			
	Man-Made Structure			
	Dam/Levee			
	Channelization			
	Drainage			
Ţ	Human-induced wetland	12	recently constructed stormwater swale- did not meet wetland criteria	
	Change in River			
Problem	Areas	Corresponding Data Points	Description	Justification for wetland with less tha 3 parameters
	Highly seasonal wetland			
	Vegetated flats			
	FACU dominated wetland			
	Beaver impoundment			
	Problem soils- red parent material, sandy etc.			
	Fluvial Soils			
	Vernal pools			
	Multi-year wet/dry cycle			
	White pine swamp			
I	Other	6, 7, 8, 13	disturbance area- beach erosion, wave action- storm events will move rock and alter the shoreline	

Significantly disturbed and problem areas are found when one or more of three parameters (vegetation, soils, hydrology) are missing, obscured or misleading. Disturbed areas include human-caused disturbance or disturbance due to a significant, catastrophic natural event. Problem areas are due to natural, normal, seasonal, or annual variability or permanently due to the nature of soils or vegetation on site.

WETLAND DETERMINATION DATA FORM - Midwest Region

Contraction of Deck Territ	Delening		ATUM -	al Milwarker Sampling Date: 10 23 /2017
Project/Site: South shore Park Beach	la lades		primada	State:Sampling Point:
nvestigator(s): TAWS - Alice Thompson, Canson An	the c	Section 10	Township	(N Range 22 East West
andform: Summit Shoulder Backslope Footslope Toeslope Urban Modified	Other			concave convex linear other:
				WWI classification:
Soil Map Unit Name: Un map yed are climatic/hydrologic conditions on the site typical for this ti	me of vear?	Yes -	No	Reason: Previous 90 day Precipitation WET NORMAL DRY
The Vegetation X , Soil X , or Hydrology	significantly	listurbed? C'I	1 mar	Are "Normal Circumstances" present? Yes No X
Are Vegetation	problematic?	iotatiood - 4-1	1	
SUMMARY OF FINDINGS - Attach site map showing	 samoling o	oint locations	. transect	s, important features, etc.
Hydrophytic Vegetation Present? YesN			the Sample Netland?	ed Area within Yes No X
		We	tland Type: M	arsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine
				Farmed Wetland
Remarks: on high rip rap (-newy)	Wall	orajace	ut Lake Michigan
W. P. N. A. B.	LOVP. N	Jes level		Sooth end of Project
Mo beach veren 10-12 0	10010 1	When we are		in the second second
VEGETATION - Use scientific names of plants.				
	Absolute %	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: equiv to 30' radius)	Cover	Species?	Status	Number of Dominant Species That
1				Are OBL, FACW, or FAC: (A)
2.				Total Number of Dominant Species
3.				Total Number of Dominant Species 3 (B)
				D A Construction That Am
4				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
5.		= Total Cover		
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2.				OBL species x1 =
				FACW species x 2 =
3				FAC species x 3 =
4				FACU species x 4 =
5				UPL species x 5 =
6				
7		= Total Cover		Column Totals: (A) (B) Prevalence Index = B/A =
Harb Strature (Blat size) could to 5' radiue)		- Total Cover		Hydrophytic Vegetation Indicators:
Herb Stratum (Plot size: equiv to 5' radius)	60	2	Facu	Rapid test for hydrophytic vegetation
30 <u> </u>	20		FreU	Dominance Test is >50%
2. Davius carota	30	~~~~~	FAC V	Prevalence index is ≤3.01
3. Trifolium hybridum 4. Tarraxacum officiade	- <u>>0</u> V0		FALV	
4. Jan raxacum officinate		-M-	TACV	Morphological Adaptations ¹ (Provide supporting data in Remarks)
5				Problematic Hydrophytic Vegetation ¹ (Explain)
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7.				
8.				Definitions of Vegetation Strata:
9,				Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
10.				
· · ·	150	= Total Cover	75/30	Sapling/shrub - Woody plants less than 3 in. DBH and greater than
Woody Vine Stratum (Plot size: equiv to 30' radius)			-/30	3.28 (1m) tall.
1				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2				Troody profiles food that one is with
3	-			Woody vines - All woody vines greater than 3.28 ft in height.
		= Total Cover		Is Hydrophytic Vegetation Present? Yes No 🔀
Remarks				de sus sus sus sus sus sus sus sus sus su
Remarks:				

Thompson & Associates Wetland Services

Same	alina	Point:

١

Depth (inches)	Matrix		Redox Feature	88			
	Color (moist)	%	Color (moist)	% Type ¹	Loc ²	Texture	Remarks
15-8	10422/1	100				silty clay /	
00 10		100		·		- Sinty comy in	
8-12	1042 5/3			······		sandy day loa	m m pebbles
ype: C=Conc	entration, D=Depletion	, RM=Reduced N	Matrix, MS=Masked	Sand Grains		2 ocation: PI =Pr	ore Lining, M≍Matrix.
	cators: (For LRR M)					Indicators for Problematic H	
Histosol (A	(1)		Sandy Gleyed	Matrix (S4)		Coast Prairie Redox (A	
Histic Epip	edon (A2)		Sandy Redox	(S5)		Iron-Manganese Mass	es (F12)
Black Histi	ic (A3)		Stripped Matri	x (S6)		Very Shallow Dark Sur	face (F22)*
Hydrogen	Sulfide (A4)		Dark Surface	(S7)		Other (Explain in Rema	
Stratified L	ayers (A5).		Loamy Mucky	Mineral (F1)			
2 cm Muck		· -	Loamy Gleyed	Matrix (F2)			
Depleted F	Below Dark Surface (A	11)	Depleted Matr	ix (F3)			
Thick Dark	Surface (A12)	_	Redox Dark S	urface (F6)			
Sandy Mud	cky Mineral (S1)	_	Depleted Dark	Surface (F7)			
5 cm Muck	y Peat or Peat (S3)	_	Redox Depres	sions (F8)			
		and wetland hydro	ology must be prese	ent, unless disturbed or	problematic.	* Test Indicator	
	er (if observed):						
Туре:							
Depth (inch emarks:	es):					Is Hydric Soil Present?	Yes No X
	012 00	rpacteo	5011 -	likely hi	24 - 24 - 24 - 24 - 24 - 24 - 24 - 24 -	e - 11 6	
YDROLOGY							
	gy Indicators:						
many Indicator		required: check (all that applu)			Occasional and the March 198	
		required: check a	all that apply)	d Leaves (B0)			minimum of two required)
Surface Wa	ater (A1)	required; check a	Water-Staine	ed Leaves (B9)		Surface Soil Cra	icks (B6)
Surface Water	ater (A1) r Table (A2)	required; check a	Water-Staine Aquatic Faur	ia (B13)		Surface Soil Cra Drainage Patter	icks (B6) ns (B10)
Surface Water High Water Saturation	ater (A1) r Table (A2) (A3)	required: check	Water-Staine Aquatic Faun True Aquatic	ia (B13) Plants (B14)		Surface Soil Cra Drainage Patter Dry-Season Wa	icks (B6) ns (B10) ter Table (C2) (~July 15 or late
Surface Water High Water Saturation Water Mark	ater (A1) r Table (A2) (A3) ks (B1)	required: check :	Water-Staine Aquatic Faun True Aquatic Hydrogen Su	na (B13) Plants (B14) Ifide Odor (C1)	unte (C.2)	Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow	acks (B6) ns (B10) ter Table (C2) <i>(~July 15 or late</i> s (C8)
Surface Wa High Water Saturation Water Mark Sediment E	ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2)	required: check :	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi	a (B13) Plants (B14) Ifide Odor (C1) zospheres on Living Ro	oots (C3)	Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib	icks (B6) ns (B10) ter Table (C2) <i>(~July 15 or late</i> s (C8) ie on Aerial Imagery (C9)
Surface Wa High Water Saturation Water Mark Sediment E Drift Depos	ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3)	required: check :	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi Presence of	na (B13) Plants (B14) Ifide Odor (C1) zospheres on Living Ro Reduced Iron (C4)		Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres	icks (B6) ns (B10) ter Table (C2) <i>(~July 15 or late</i> s (C8) le on Aerial Imagery (C9) sed Plants (D1)
Surface Wa High Water Saturation Water Marl Sediment I Drift Depos Algal Mat o	ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) iits (B3) r Crust (B4)	required: check :	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Recent Iron F	na (B13) Plants (B14) Ifide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils		Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres Geomorphic Pos	ucks (B6) ns (B10) ter Table (C2) <i>(-July 15 or lete</i> s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2)
Surface Water High Water Saturation Water Mark Sediment I Drift Depos Algal Mat o Iron Depos	ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5)		Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Presence of Recent Iron F Thin Muck Su	na (B13) Plants (B14) Ifide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils urface (C7)		Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres	acks (B6) ns (B10) ter Table (C2) <i>(~July 15 or lete</i> s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2)
Surface Wa High Water Saturation Water Mark Sediment I Drift Depos Algal Mat o Iron Depos Inundation	ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) iits (B3) r Crust (B4)	ery (B7)	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Recent Iron F	na (B13) Plants (B14) Ifide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils urface (C7) Il Data (D9)		Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres Geomorphic Pos	ucks (B6) ns (B10) ter Table (C2) <i>(-July 15 or lete</i> s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2)
Surface Wa High Water Saturation Water Mark Sediment I Drift Depos Algal Mat o Iron Depos Inundation Sparsely Wa	ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) Visible on Aerial Imag egetated Concave Sur	ery (B7)	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Presence of Recent Iron F Thin Muck Su Gauge or We	na (B13) Plants (B14) Ifide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils urface (C7) Il Data (D9)		Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres Geomorphic Pos	ucks (B6) ns (B10) ter Table (C2) <i>(-July 15 or lete</i> s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2)
Surface Water High Water Saturation Water Mark Sediment I Drift Depos Algal Mat o Iron Depos Inundation Sparsely Water Pol Mark State Pol	ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) bits (B3) or Crust (B4) its (B5) Visible on Aerial Imag egetated Concave Sur ons: resent? Yes	ery (B7) rface (B8) s No	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Presence of I Recent Iron F Thin Muck Si Gauge or We Other (Explain	na (B13) Plants (B14) Ilfide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils urface (C7) all Data (D9) h in Remarks) 		Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres Geomorphic Pos	acks (B6) ns (B10) ter Table (C2) <i>(~July 15 or lete</i> s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2)
Surface Water High Water Saturation Water Mark Sediment I Drift Depos Algal Mat o Iron Depos Inundation Sparsely W Seld Observation Irface Water Present	ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) bits (B3) or Crust (B4) its (B5) Visible on Aerial Imag egetated Concave Sur ons: resent? Yes	ery (B7) rface (B8) s No s No	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Presence of I Recent Iron F Thin Muck Su Gauge or We Other (Explain	na (B13) Plants (B14) Ilfide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils urface (C7) all Data (D9) n in Remarks) mes): 		Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres Geomorphic Pos	ucks (B6) ns (B10) ter Table (C2) <i>(~July 15 or late</i> s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2)
Surface Water High Water Saturation Water Mard Sediment I Drift Depos Algal Mat o Iron Depos Inundation Sparsely Water Plater Table Present Intrace Water Plater Table Present Intrace Present	ater (A1) r Table (A2) (A3) ks (B1) Deposits (B2) sits (B3) or Crust (B4) its (B5) Visible on Aerial Imag egetated Concave Sur poss: resent? Yes sent? Yes	ery (B7) rface (B8) s No s No	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Presence of I Recent Iron F Thin Muck Si Gauge or We Other (Explain	na (B13) Plants (B14) Ilfide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils urface (C7) all Data (D9) n in Remarks) mes): 	(C6)	Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres Geomorphic Pos	ucks (B6) ns (B10) ter Table (C2) <i>(~July 15 or late</i> s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2)
Surface Water High Water Saturation Water Mark Sediment D Drift Depos Algal Mat o Iron Depos Inundation Sparsely Va eld Observatio Inface Water Pre- ater Table Prese cludes capillar	ater (A1) r Table (A2) (A3) (A3) Deposits (B2) vits (B3) or Crust (B4) its (B5) Visible on Aerial Imag egetated Concave Sur Drs: resent? Yes sent? Yes nt? Yes	ery (B7) rface (B8) s No s No s No	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Presence of I Recent Iron F Thin Muck Su Gauge or We Other (Explain Depth (inch Depth (inch	na (B13) Plants (B14) Ilfide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils urface (C7) all Data (D9) n in Remarks) mes): 	(C6)	Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres Geomorphic Por FAC-Neutral Ter	icks (B6) ns (B10) ter Table (C2) (~July 15 or late s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2) st (D5)
Surface Water High Water Saturation Water Mark Sediment D Drift Depos Algal Mat o Iron Depos Inundation Sparsely Water Presence aturation Presence Includes capillar escribe Record	ater (A1) r Table (A2) (A3) (A3) Deposits (B2) vits (B3) or Crust (B4) its (B5) Visible on Aerial Imag egetated Concave Sur Drs: resent? Yes sent? Yes nt? Yes	ery (B7) rface (B8) s No s No s No	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Presence of I Recent Iron F Thin Muck Su Gauge or We Other (Explain Depth (inch Depth (inch	aa (B13) Plants (B14) Ifide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils urface (C7) Sell Data (D9) in Remarks) mes): mes	(C6)	Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres Geomorphic Por FAC-Neutral Ter	icks (B6) ns (B10) ter Table (C2) (~July 15 or late s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2) st (D5)
Surface Water High Water Saturation Water Mark Sediment D Drift Depos Algal Mat o Iron Depos Inundation Sparsely Va eld Observation rface Water Pre- ater Table Pre- turation Prese cludes capillar	ater (A1) r Table (A2) (A3) (A3) beposits (B2) vits (B3) or Crust (B4) its (B5) Visible on Aerial Imag egetated Concave Sur ons: resent? Yes sent? Yes nt? Yes y fringe) ed Data (stream gauge	ery (B7) rface (B8) s No s No s No	Water-Staine Aquatic Faur True Aquatic Hydrogen Su Oxidized Rhi: Presence of I Recent Iron F Thin Muck Su Gauge or We Other (Explain Depth (inch Depth (inch	aa (B13) Plants (B14) Ifide Odor (C1) zospheres on Living Ro Reduced Iron (C4) Reduction in Tilled Soils urface (C7) Sell Data (D9) in Remarks) mes): mes	(C6)	Surface Soil Cra Drainage Patter Dry-Season Wa Crayfish Burrow Saturation Visib Stunted or Stres Geomorphic Por FAC-Neutral Ter	icks (B6) ns (B10) ter Table (C2) <i>(~July 15 or lefe</i> s (C8) le on Aerial Imagery (C9) sed Plants (D1) sition (D2) st (D5)

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: South Share Park Beach	Re-location	Gity/County:	Milwaul	Lee, Milwaukee Sampling Date: 10/23 12017
pplicant/Owner: Bobert Wright, Smith	A Group			State: WI Sampling Point: Z
ivestigator(s): TAWS - Alice Thompson, Carisso (Anich !	Section 10	_Township	N, Range2_(East) West
andform: Summit Shoulder Backstope Footslope Toeslope Urban Modified	Other	L	ocal relief:	
oil Map Unit Name: unmanned		N. V	Ma	WWI classification:
re climatic/hydrologic conditions on the site typical for this			NO	
re Vegetation, Soil, or Hydrology re Vegetation, Soil, or Hydrology	_ problematic?	,		Are "Normal Circumstances" present? Yes X No
SUMMARY OF FINDINGS - Attach site map showing		oint locations	s, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	No 🗡	a We	Wetland? stland Type: M	ed Area within Yes No X larsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine Farmed Wetland
Remarks: world Stup slope up on landsrape		+	data p	point at lowest point
VEGETATION - Use scientific names of plants.				
	Absolute %	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: equiv to 30' radius) 1. Franking Pannel yuhn an	Cover	Species?	Frew	Number of Dominant Species That Are OBL, FACW, or FAC:
2		/		Total Number of Dominant Species
3				Across All Strata:
5			151	Percent of Dominant Species That Are 33 (A/B)
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)	_30	= Total Cover	19/6	Prevalence Index worksheet:
	30	M	FAC	Total % Cover of: Multiply by:
2. Lonicen tartarian	30	M	FACU	
			Inco	
3				FACW species x 2 =
4				FAC species x 3 =
5.				FACU species x 4 =
3				UPL species x 5 =
7.				Column Totals: (A) (B)
I I Di di Chi di construito di Chardiana)	60	= Total Cover	39/12	Prevalence Index = B/A =
Herb Stratum (Plot size: equiv to 5' radius)	50	~	Val	Hydrophytic Vegetation Indicators:
	- 40		Facu	Rapid test for hydrophytic vegetation
Artion minus	40			Dominance Test is >50%
solanum ditamara			FACU	Prevalence Index is <3.01
Loniava tartarica	_ 20		FACU	Morphological Adaptations ¹ (Provide supporting data in Remarks)
vitis ripavik			Frew	Problematic Hydrophytic Vegetation ¹ (Explain)
s. Symphytrichum ericoiles	20		FACU	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Allaria petiolata	30		FAC	
. Tarraxacing officinate			FALV	Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
				height (DBH), regardless of height.
10	250	= Total Cover	12.5/	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 (1m) tall.
Noody Vine Stratum (Plot size: equiv to 30' radius)				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2				Woody vines - All woody vines greater than 3.28 ft in height.
3.		= Total Cover		Is Hydrophytic Vegetation Present? Yes No
Remarks:				

Thompson & Associates Wetland Services

Sampling Point: 2

10-02-04-0	tion: (Describe to the	depth neede			nfirm the a	bsence of	indicators.)	
Depth	Matrix		Redox Feature			1 2	Tak	
0 = 4	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Silt lo am	Remarks
4-20	51048312	40						
	75445137	60					siby clay	
20.23	104/23/2	80	104R516	20	د	m	silly day	
							······	
1Type: C=Conc	entration, D=Depletion,	RM=Reduce	d Matrix, MS=Masked	Sand Grains			²Location: PL≍P	ore Lining, M=Matrix.
	icators: (For LRR M)						Indicators for Problematic	
Histosol (/	A1)		Sandy Gleyed	Matrix (S4)			Coast Prairie Redox (/	A16)
Histic Epi	pedon (A2)		Sandy Redox				Iron-Manganese Mass	es (F12)
Black Hist	tic (A3)		Stripped Matri	ix (S6)			Very Shallow Dark Su	rface (F22)*
Hydrogen	Sulfide (A4)		Dark Surface				Other (Explain in Rem	arks)
Stratified	Layers (A5)		Loamy Mucky					
2 cm Muc			Loamy Gleyed					
ter-Web-ter-	Below Dark Surface (A	11)	Depleted Matr	. ,			08	
	k Surface (A12)		Redox Dark S					
	cky Mineral (S1)		Depleted Dark					
	ky Peat or Peat (S3)		Redox Depres					
	Ny i Cal Of I Cal (OD)			3310113 (1 0)				
³ Indicators of h	ydrophytic vegetation a	nd wetland hy	drology must be prese	ent, unless dist	turbed or p	roblematic.	* Test Indicator	
Restrictive Lay	er (if observed):							
Type:								V
Depth (incl	nes):						Is Hydric Soil Present?	Yes No
Remarks:								
HYDROLOG	Y							
Wetland Hydrol Primary Indicato	ogy indicators: ors (minimum of one is	required: che	ck all that apply)				Secondary Indicators	(minimum of two required)
Surface W		required. one		ed Leaves (B9)		Surface Soil Cr	
	er Table (A2)		Aquatic Fau		/		Drainage Patte	
Saturation				Plants (B14)				ater Table (C2) (~July 15 or later)
Water Ma			·	ulfide Odor (C1	1)		Crayfish Burrow	
	Deposits (B2)			izospheres on		te (Ca)		ble on Aerial Imagery (C9)
Drift Depo				Reduced Iron		100)		ssed Plants (D1)
'	or Crust (B4)			Reduction in T	- ,	(CB)	Geomorphic Po	
Iron Depo			Thin Muck S		ined Solis i	(00)	FAC-Neutral Te	. ,
	Visible on Aerial Imag	en/(P7)	Gauge or W					SSI (00)
	egetated Concave Su	, ()		· · ·				
Sparsely (regetated Concave Sur	IACO (DO)	Other (Explain	n in Remarks)				
Field Observat	lons:							
Surface Water F	Present? Yes	s No	/ Depth (incl	hes):				
Water Table Pre	esent? Yes	s No						A
Saturation Pres				-		Is Wet	land Hydrology Present?	Yes No
(includes capilla		2	-t			-	,	
Describe Record	ded Data (stream gaug	e, monitoring	well, aerial photos, pre	evious inspecti	ons), if ava	ilable:		
Remarks:								
					_			
Thompson & As	sociates Wetland Servi	ices					Based on USACE Midwe	est Supplement Datasheet, v2.0

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: South Shore Park Beach R	le-locatio	n City/County	Milwa	ulzee/Milwaukeesampling Date: 10/23 12017
pplicant/Owner: <u>Robert Wright</u> , Smith	th Group)		State: WI Sampling Point: >
nvestigator(s): TAWS - Alice Thompson, Carissa P		Section 10		
andform: Summit Shoulder Backslope Footslope Toeslope Urban Modified	Other		_ocal relief: o	concave, convex, linear, other:
ioil Map Unit Name: Un Mappled				WWI classification:
re climatic/hydrologic conditions on the site typical for this t		-		
re Vegetation <u>,</u> Soil <u>,</u> or Hydrology re Vegetation Soil or Hydrology	problematic?			
SUMMARY OF FINDINGS - Attach site map showing	g sampling p	oint location	s, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes				ed Area within
Hydric Soil Present? Yes Metland Hydrology Present? Yes Metland Hydrology Present?	No X		Wetland?	larsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine
Wetland Hydrology Present? YesN	No			Farmed Wetland
Remarks:			2	
VEGETATION - Use scientific names of plants.				
	Absolute %	Dominant Species2	Indicator Status	Dominance Test worksheet:
Tree Stratum (Plot size: equiv to 30' radius)	Cover	Species?	Vel	Number of Dominant Species That
1. Ulmus pumila 2. Gleditsia triacanthos				Are OBL, FACW, or FAC:
2. Gredistin Fridicanthos		<u></u>	Incu	Total Number of Dominant Species (0 (B)
4				Percent of Dominant Species That Are 16 (A/B)
	40	= Total Cover	2.0%	
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)			18	Prevalence Index worksheet:
1. Ulmus punila	30	M	Upl	Total % Cover of: Multiply by:
2 Salix bebbiana	ZO	09	FACW	OBL species x 1 =
			1	
3				
4				FAC species x 3 =
5				FACU species x 4 =
ô				UPL species x 5 =
7				Column Totals: (A) (B)
	50	= Total Cover	25/	Prevalence Index = B/A =
Herb Stratum (Plot size: equiv to 5' radius)	1.0		110	Hydrophytic Vegetation Indicators:
1. Pour compressa	60	<u>M</u>	FACU	Rapid test for hydrophytic vegetation
2. Tamara cum officinale	30	M	FALV	Dominance Test is >50%
3. Chickorium inty bus	20	-	FULV	Prevalence Index is ≤3.0 ⁴
Theolium hybridium	2.0		FALU	Morphological Adaptations ¹ (Provide supporting data in Remarks)
				Problematic Hydrophytic Vegetation ¹ (Explain)
5 6	_			Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7			÷	Definitions of Vegetation Strata:
8				Tree - Woody plants 3 in. (7,6cm) or more in diameter at breast height (DBH), regardless of height,
10	130	= Total Cover	65/	Sapling/shrub - Woody plants less than 3 in. DBH and greater than
Woody Vine Stratum (Plot size: equiv to 30' radius)			-/2.6	3.28 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2			·	Woody vines - All woody vines greater than 3.28 ft in height.
		= Total Cover		Is Hydrophytic Vegetation Present? Yes No X
Remarks:				

Thompson & Associates Wetland Services

Sampling Point: 3

Profile Descrip	tion: (Describe to the	depth needed	to document the i	ndicator or co	nfirm the ab	sence of	indicators.)	
Depth	Matrix		Redox Featu	res				
(inches)	Color (moist)	%	Color (moist)	%	Туре1	Loc ²	Texture	Remarks
0-1	1048211	100					1.88 i	alt loon
7 - 7	1012713	100						
2-3	1014-117						grovel?	CIAY
)
	entration, D=Depletion,	RM=Reduced	Matrix MS=Masker	Sand Grains			21 ocation	.: PL=Pore Lining, M=Matrix.
	licators: (For LRR M)	1101-11000000						ematic Hydric Soils ³ :
Histosol (Sandy Gleve	d Matrix (S4)			Coast Prairie I	
	pedon (A2)		Sandy Redo	* ,			fron-Mangane	se Masses (F12)
Black His	tic (A3)		Stripped Mat	rix (S6)			Very Shallow I	Dark Surface (F22)*
Hydrogen	Sulfide (A4)		Dark Surface	e (S7)			Other (Explain	in Remarks)
	Layers (A5)		Loamy Muck	y Mineral (F1)				
2 cm Muc	. ,			ed Matrix (F2)				
	Below Dark Surface (A	11)	Depleted Ma	. ,				
	k Surface (A12)		Redox Dark					
	icky Mineral (S1) ky Peat or Peat (S3)		Redox Depre	rk Surface (F7)				
5 CIT MUC	ky real of real (00)		Redox Depre	3310113 (1-0)				
³ Indicators of h	ydrophytic vegetation a	nd wetland hy	drology must be prea	sent, unless dis	turbed or pro	oblematic.	* Test Indicator	
-	ver (if observed):							
Type:								
Depth (inc	nes):						Is Hydric Soil Pres	sent? Yes <u>No X</u>
Remarks:					-			
	NH.	(historic	£11			
-	3" compact	ed gra	nue -	NISTONE				
						_		
HYDROLOG	V							
Wetland Hydrol Primany Indicate	ogy indicators: ors (minimum of one is	coquirad: choo	k all that apply)				Secondary Ind	lipotore (minimum of two required)
	Vater (A1)	required. criec	and the second se	ned Leaves (B9))			licators (minimum of two required)
	er Table (A2)		Aquatic Fa		')			je Patterns (B10)
Saturation				ic Plants (B14)				ason Water Table (C2) (~July 15 or later)
Water Ma	rks (B1)		Hydrogen S	Sulfide Odor (C	1)			h Burrows (C8)
Sediment	Deposits (B2)		Oxidized R	hizospheres on	Living Root	s (C3)	Saturat	ion Visible on Aerial Imagery (C9)
Drift Depo	osits (B3)		Presence of	f Reduced Iron	(C4)		Stunted	i or Stressed Plants (D1)
	or Crust (B4)		Recent Iror	Reduction in 1	filled Soils (0	C6)	Geomo	rphic Position (D2)
Iron Depo				Surface (C7)			FAC-Ne	eutral Test (D5)
	n Visible on Aerial Imag			Vell Data (D9)				
Sparsely	Vegetated Concave Su	face (B8)	Other (Expl	ain in Remarks)				
Field Observat	ions:					1		
Surface Water I	Present? Yes	No No	Depth (in	ches):				
Water Table Pro	esent? Yes	SNo	Depth (in	ches):				
Saturation Pres		8 No	Depth (in	ches):		Is Wet	and Hydrology Pres	sent? Yes No Y
(includes capilla Describe Recor	ded Data (stream gaug	e monitoring v	vell aerial photos n	revious inspect	ions) if avail	lahle [.]		
	and Dam (broain goog	o, montoning i	ron, donar priotos, p		ionoj, n avan	abie.		
Demerker								
Remarks:								
Thompson & As	sociates Wetland Serv	ces					Based on USAC	E Midwest Supplement Datasheet, v2.0

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: South Shore Park Beach Re-	location	City/County:	Milway	Lee/Milwoukee Sampling Date: 10/23 12017
Applicant/Owner: Robert Wright Sm	ith Grou	Q.		State: WI Sampling Point:
nvestigator(s): TAWS - Alice Thompson Can 556				
andform: Summit Shoulder Backslope Footslope Toeslope Urban Modified	Other	L	ocal relief:	
Soil Map Unit Name: UNMOpped			N.	WWI classification:
Are climatic/hydrologic conditions on the site typical for this				
Are Vegetation, Soil, or Hydrology Are Vegetation, Soil, or Hydrology	_problematic?			Are "Normal Circumstances" present? Yes No
SUMMARY OF FINDINGS - Attach site map showing	g sampling p	oint locations	s, transect	s, important features, etc.
Hydrophytic Vegetation Present? Yes1	No X	ls	the Sample	ed Area within
Hydric Soil Present? Yes 1	No X	a	Wetland?	YesNoX
Wetland Hydrology Present? Yes 1	No 1			arsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine Farmed Wetland
toe of slope - ste	cp bri	nk p	Wes	+
VEGETATION - Use scientific names of plants.				
Tree Stratum (Plot size: equiv to 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. FRAXIN-S DEMOSSYVANKE	30	M	FALW	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2.				
3.				Total Number of Dominant Species 5 Across All Strata: (B)
4				
5.				Percent of Dominant Species That Are 40 (A/B)
	30	= Total Cover	15/10	
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)			14	Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x 1 =
3.				FACW species x 2 =
4				FAC species x 3 =
5				FACU species x 4 =
6				UPL species x 5 =
7			<u></u>	Column Totals: (A) (B)
		= Total Cover		Prevalence Index = B/A =
Herb Stratum (Plot size: equiv to 5' radius) 1. Allance Petro (Kth	60	Μ	FAL	Hydrophytic Vegetation Indicators:
	30			Rapid test for hydrophytic vegetation
6.11		<u>M</u>	FALV	Dominance Test is >50%
3. Solidage canalisis	30		FALV	Prevalence Index is ≤3,01
4. Oenothera biennis 5. Dhatais grundimerae			FACU	Morphological Adaptations ¹ (Provide supporting data in Remarks)
······································	<u> </u>]		Face	Problematic Hydrophytic Vegetation ¹ (Explain)
6. Chichony intubus			Facu	Indicators of hydric soil and welland hydrology must be present, unless disturbed or problematic.
7. Mellilotos alba	10		Fred	Definitions of Vegetation Strata:
8. Paetylis glomeration	30	<u> </u>	Fred	Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
9			<u> </u>	height (DBH), regardless of height.
10	180	= Total Cover	90/310	Sapling/shrub - Woody plants less than 3 in. DBH and greater than
Woody Vine Stratum (Plot size: equiv to 30' radius)			1.00	3.28 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and
1				woody plants less than 3,28 ft tail.
2.				Woody vines - All woody vines greater than 3.28 ft in height.
J,		= Total Cover		is Hydrophytic Vegetation Present? Yes No X
Remarks:		- 10181 00461		

Thompson & Associates Wetland Services

CO	1
301	L

Com	nlina	Point:
odilli	pinių.	FOIL.

dride Soli Indicators: (For LRR M) Indicators: (For LRR M) Indicators: (For LRR M) Histos Episodon (A2) Sandy Gleyed Matrix (S4) Costs Praine Redox (A16) Black Histis (A3) Stripped Matrix (S5) Uerry Shallow Dark Surface (F12) Black Histis (A3) Dark Surface (S7) Uerry Shallow Dark Surface (F22)* Other (Explain in Remarks) Learny Mucky Mineral (F1) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F2) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Astronce (F7) * Test Indicator Sandy Mucky Mineral (S1) Depleted Matrix (F3) Is Hydric Soil Present? Yes	ofile Descrip	otion: (Describe to the d	ieput fieede					matorio.j		
D = 2 ⁿ [=(q, L, L]) 100	Depth	Matrix		Redox Feat	ures					
23.11 pd(p.713_102 gr. C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Proc Lining, M=Matrix, MS=Masked Sand Grains dris Boll Indicators: Fr2 L/R/M Indicators for Poblematic Hydris Solie: dris Boll Indicators: Sandy Gleyed Matrix (S4) Indicators for Poblematic Hydris Solie: Histo Explosion (A2) Sandy Redox (S5) Indicators for Poblematic Hydris Solie: Stratile Layers (A5) Loany Mutry (Mineal (F1) Other (Explain in Remarks) 2 cm Muck (Mineal (S1) Depleted Dark Surface (F7) Other (Explain in Remarks) 2 cm Muck (Mineal (S1) Depleted Dark Surface (F7) Other (Explain in Remarks) 2 cm Muck (Mineal (S1) Depleted Dark Surface (F7) Stations (F8) Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator * Test Indicators mark (Mark (A1) Water Sained Leaves (B8) Surface Sol Cracits (B8) Surface Water (A1) Phydrops Sulface (C1) Surface (C2) Secondary Indicators: mark (B1) Phydrops Sulface (C1) Surface (C2) Surface (B2) Oddeced Rinzscheres on (Water Table (C2) / wy rec Surface (C2) Surface (C2) Surface (B3) Tr	(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks
23.11 pd(p.713_102 gr. C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Proc Lining, M=Matrix, MS=Masked Sand Grains dris Boll Indicators: Fr2 L/R/M Indicators for Poblematic Hydris Solie: dris Boll Indicators: Sandy Gleyed Matrix (S4) Indicators for Poblematic Hydris Solie: Histo Explosion (A2) Sandy Redox (S5) Indicators for Poblematic Hydris Solie: Stratile Layers (A5) Loany Mutry (Mineal (F1) Other (Explain in Remarks) 2 cm Muck (Mineal (S1) Depleted Dark Surface (F7) Other (Explain in Remarks) 2 cm Muck (Mineal (S1) Depleted Dark Surface (F7) Other (Explain in Remarks) 2 cm Muck (Mineal (S1) Depleted Dark Surface (F7) Stations (F8) Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator * Test Indicators mark (Mark (A1) Water Sained Leaves (B8) Surface Sol Cracits (B8) Surface Water (A1) Phydrops Sulface (C1) Surface (C2) Secondary Indicators: mark (B1) Phydrops Sulface (C1) Surface (C2) Surface (B2) Oddeced Rinzscheres on (Water Table (C2) / wy rec Surface (C2) Surface (C2) Surface (B3) Tr	0-2"	1248.2/1	100					Just + si	> 100.	
rge: C:Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains *Location: PL=Pore Lining, M=Matrix rde: Sandy Redox (S6) Indicators for Problematic Hydric Solie*: rde: Cost Prime Redox (A19) Sandy Redox (S6) Hittoc (A1) Sandy Redox (S6) Cost Prime Redox (A19) Block Histic (A3) Stripped Matrix (S9) User Surface (S7) Depleted Dark Surface (S7) Other (Explain in Remarks) Stratiled Layers (A5) Learny Mucky Mineral (F1) Depleted Dark Surface (A12) Redox Dark Surface (F7) So Thok Carls (A13) Depleted Dark Surface (F7) So Thok Carls (A13) Thok Carls (F8) So Thok Carls (A12) Redox Dark		The rest of the sector				-			MIL	**
rdfe Soll Indicators: (For LRR M) Indicators (For Delematic Hydró Solle*: Cast Prairie Redox (A16) Histos Epipedon (A2) Sandy Redox (S3) Black Histis (A3) Stripped Matrix (S4) Histos Epipedon (A2) Sandy Redox (S3) Black Histis (A3) Stripped Matrix (S9) Very Shallow Dark Surface (F12) Dark Surface (F22)* Jonary Mucky Mineral (F1) Depixed Matrix (F2) Depixed Below Dark Surface (A11) Depixed Matrix (F2) Depixed Dark Surface (F6) Redox Dark Surface (F7) S and Mucky Mineral (S1) Depixed Matrix (F2) Depixed Dark Surface (F6) Redox Dark Surface (F6) Sindrickue Lagr (F observed): Type: Depixed Orby NicreageItalian and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Stricklev Lagr (F observed): Type: Depixed Matrix (A1) Water-Slained Leaves (B9) Surface Water (A1) Water-Slained Leaves (B9) High Water Table (A2) Aquatic Flauna (F14) Water Marka (B1) Hydrogen Sulfde Odor (C1) Surface Water (A1) Hydrogen Sulfde Odor (C1) Staturation (A3) Train Muck Present? Water Marka (B1) Hydrogen Sulfde Odor	2-5	1048713	100					glavel	4011	
dride Soli Indicators: (For LRR M) Indicators: (For LRR M) Indicators: (For LRR M) Histos Episodon (A2) Sandy Gleyed Matrix (S4) Costs Praine Redox (A16) Black Histis (A3) Stripped Matrix (S5) Uerry Shallow Dark Surface (F12) Black Histis (A3) Dark Surface (S7) Uerry Shallow Dark Surface (F22)* Other (Explain in Remarks) Learny Mucky Mineral (F1) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F2) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Astronce (F7) * Test Indicator Sandy Mucky Mineral (S1) Depleted Matrix (F3) Is Hydric Soil Present? Yes										
rdrd 501 Indicators: (For LRR M) Indicators: (For LRR M) Indicators: (For LRR M) Histos Expected (A1) Sandy Gleyed Matrix (S4) Cost Praine Redox (A16) Histos Expected (A2) Sandy Redox (S5) Uror-Mangarese Masses (F12) Black Hists (A3) Stripped Matrix (S9) Uers Stratece (F7) Black Hists (A10) Learny Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Learny Mucky Mineral (F2) Depleted Matrix (F2) Depleted Below Dark Surface (A12) Redox Dark Surface (F7) S and Mucky Mineral (S1) Depleted Matrix (F3) Beack Mineral (S1) Depleted Matrix (F3) Beack Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Beack Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Beach Mucky Mineral (S1) Redox Dark Surface (F7) S or Mucky Peat or Peat (S3) Redox Dark Surface (F7) Surface Value (F6) Surface Soil Cracks (B6) Surface Value (A1) Muck (F3) Surface Value (A1) Muck (F3) Surface Value (A1) </td <td></td>										
rdrd 501 Indicators: (For LRR M) Indicators: (For LRR M) Indicators: (For LRR M) Histos Expected (A1) Sandy Gleyed Matrix (S4) Cost Praine Redox (A16) Histos Expected (A2) Sandy Redox (S5) Uror-Mangarese Masses (F12) Black Hists (A3) Stripped Matrix (S9) Uers Stratece (F7) Black Hists (A10) Learny Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Learny Mucky Mineral (F2) Depleted Matrix (F2) Depleted Below Dark Surface (A12) Redox Dark Surface (F7) S and Mucky Mineral (S1) Depleted Matrix (F3) Beack Mineral (S1) Depleted Matrix (F3) Beack Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Beack Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Beach Mucky Mineral (S1) Redox Dark Surface (F7) S or Mucky Peat or Peat (S3) Redox Dark Surface (F7) Surface Value (F6) Surface Soil Cracks (B6) Surface Value (A1) Muck (F3) Surface Value (A1) Muck (F3) Surface Value (A1) </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>*</td> <td></td>									*	
rdrd 501 Indicators: (For LRR M) Indicators: (For LRR M) Indicators: (For LRR M) Histos Expected (A1) Sandy Gleyed Matrix (S4) Cost Praine Redox (A16) Histos Expected (A2) Sandy Redox (S5) Uror-Mangarese Masses (F12) Black Hists (A3) Stripped Matrix (S9) Uers Stratece (F7) Black Hists (A10) Learny Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Learny Mucky Mineral (F2) Depleted Matrix (F2) Depleted Below Dark Surface (A12) Redox Dark Surface (F7) S and Mucky Mineral (S1) Depleted Matrix (F3) Beack Mineral (S1) Depleted Matrix (F3) Beack Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Beack Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Sandy Mucky Mineral (S1) Depleted Matrix (F3) Beach Mucky Mineral (S1) Redox Dark Surface (F7) S or Mucky Peat or Peat (S3) Redox Dark Surface (F7) Surface Value (F6) Surface Soil Cracks (B6) Surface Value (A1) Muck (F3) Surface Value (A1) Muck (F3) Surface Value (A1) </td <td></td> <td>······································</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>		······································								
rdrd 501 Indicators: (For LRR M) Indicators: (For LRR M) Indicators: (For LRR M) Histos Expected (A1) Sandy Redox (S3) Cost Praine Redox (A16) Histos Expected (A2) Sandy Redox (S3) Uror-Mangarese Masses (F12) Black Hists (A3) Stripped Matrix (S9) Very Shallow Dark Surface (F22)* Hydrogen Sulfide (A4) Dark Surface (S7) Cherr (Explain in Remarks) 2 cm Muck (A10) Learny Wucky Mineral (F1) Depleted Matrix (F2) Depleted Below Dark Surface (A12) Redox Dark Surface (F7) S and Mucky Mineral (S1) Depleted Matrix (F3) Beak Mineral (S1) Depleted Matrix (F3) Startificite Layer (F6) Redox Dark Surface (F7) S or Mucky Peat or Peat (S3) Redox Dark Surface (F7) S or Mucky Peat or Peat (S3) Redox Dark Surface (F8) Surface Water (A1) Weter Shalned Leaves (B9) Surface Water (A1) Water Shalned Leaves (B9) High Water Table (A2) Aquellor Fauna (F13) Surface Water (A1) Hydrogen Sulfde Odor (C1)										
rdfe Soll Indicators: (For LRR M) Indicators: (For LRR M) Indicators: (For LRR M) Histos Expeden (A2) Sandy Redox (S3) Cost Praine Redox (A16) Histos Expeden (A2) Sandy Redox (S3) Uror-Mangarese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydropon Sunface (A10) Learny Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Learny Mucky Mineral (F2) Depieted Matrix (F2) Depieted Below Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depieted Matrix (F3) Test Indicator Sandy Mucky Mineral (S1) Depieted Matrix (F3) Test Indicator Sandy Mucky Mineral (S1) Depieted Matrix (F3) Test Indicator Sandy Mucky Mineral (S1) Depieted Matrix (F3) Test Indicator Sandy Mucky Mineral (S1) Depieted Matrix (F3) Test Indicator Type:										
Histic Epipedon (A2) Sandy Reidox (S5) Const Praife Redox (A16) Histic Epipedon (A2) Sandy Reidox (S5) Foro-Manganese Masses (F12) Black Histic (A3) Dark Surface (S7) Other (Explain in Remarks) Stratified Layers (A5) Loarny Mukey Mineral (F1) Other (Explain in Remarks) 2 orm Muck (A10) Depited Matrix (F2) Other (Explain in Remarks) 5 orm Muck (A10) Depited Matrix (F2) Depited Matrix (F2) 5 orm Muck (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depited Dark Surface (F6) Sandy Mucky Mineral (S1) Depited Dark Surface (F6) Sondy Mucky Mineral (S1) Depited Dark Surface (F6) Depited Indicators Indicators of hydrophytic vegetation and welland hydrology must be present; unless disturbed or problematic. * Test Indicator stratice Value Layer (if observed): Type: No Type: Depited Bark (S1) Secondary Indicators: (minimum of two requires: the stratic (S1) Surface Soil Cracks (B1) Water Staind Lawers (B3) Secondary Indicators (minimum of two requires: the stratic (S14) YDROLOGY Value Marks (B1) Hydre Suified Odor (C1) Cracks (B2) Surface Soil Cracks (B2) Oxidized Rhizosheres on Living Roo	ype: C=Con	centration, D=Depletion, I	RM=Reduce	d Matrix, MS=Maske	ed Sand Grains			² Locat	ion: PL=Pore	Lining, M=Matrix.
Histic Epipedion (A2) Sandy Redix (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Black Histic (A4) Dark Surface (S7) Other (Explain in Remarks) Straffied Layers (A5) Loamy Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Depleted Matrix (F2) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Depleted Matrix (F2) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) S m Mucky Peat or Peat (S3) Redox Depressions (F6) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator setticity: Type: No Openti (inches):	ydric Soil Ind	licators: (For LRR M)						Indicators for Pro	blematic Hyd	Iric Soils ^a :
Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Depleted Below Dark Surface (A12) Redox Dark Surface (F7) S on Mucky Mineral (S1) Depleted Dark Surface (F7) S on Mucky Peat or Peat (S3) Redox Depressions (F8) Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test indicator estrictive Layer (If Observed): Type: Depleted Dark Surface (F7) Ype: Depth (inches): Is Hydric Soil Present? Yes No emarks: Zom P and M Water-Stained Leaves (B9) Surface Soil Cracks (B8) Surface Soil Cracks (B8) High Water Table (A2) Aquatic Fauna (B13) Dyniange Paterns (B10) Dyniange Paterns (B10) Dyniange Paterns (B10) Seduration (A3) True Aquatic Plants (B14) Dyniange Paterns (B10) Dyniange Paterns (B10) Dyniange Paterns (B10) Sturtator Visible on Aerial Imagery (G3) Striptice Matrix (B3) Drainage Paterns (B10) Sturtator Visible on Aerial Imagery (G3) Sturtator Visible on Aerial Imagery (G3) Dyniange Paterns (Histosol ((A1)		Sandy Gley	ed Matrix (S4)			Coast Prairie	e Redox (A16	š)
Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) Stratified Layers (A5) Learny Mucky Mineral (F1) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Redox Dark Surface (F6) Sandy Mucky Mineral (B1) Depleted Dark Surface (F6) S on Mucky Peat or Peat (S3) Redox Depressions (F8) Indicators of hydrophytic vegetation and welland hydrology must be present, unless disturbed or problematic. * Test Indicator estirictive Layer (if observed): Type: Type: Depletied Dark Surface (F8) Surface VAIR Matrix VPROLOGY Is Hydric Soil Present? Yes No emarks: Surface Valuer (A1) Water-Stained Leaves (B9) Surface Valuer (A1) High Water Table (A2) Aquatic Plants (B14) Sturface Valuer (A1) Water-Stained Leaves (B9) Sturface Valuer (A1) On-Season Water Table (C2) - UAV ris or Sturface Namer (A1) Hydrogen Sulfde Odor (C1) Sturface Namer (A1) On-Season Water Table (C2) - UAV ris or Sturface Namer (A1) On-Season Water Table (C2) - UAV ris or Sturface Namer (A1) On-Season Water Table (C2) - UAV ris or	Histic Epi	ipedon (A2)		Sandy Red	ox (S5)			Iron-Mangar	nese Masses	(F12)
Stratilied Layers (A5) Loamy Mucky Mineral (F1) 2 cm Muck (A10) Loamy Gleyed Mattix (F2) Depleted Below Dark Surface (A11) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (S1) Depleted Below Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Below Dark Surface (F7) S on Mucky Peat or Peat (S3) Redox Depressions (F8) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator estrictive Layer (If observed): Type: Dopth (inches):	Black His	tic (A3)		Stripped Ma	atrix (S6)			Very Shallow	v Dark Surfa	ce (F22)*
Statistical Layers (A5) Loamy Mucky Minerai (F1) 2 cm Muck (A10) Loamy Mucky Minerai (F1) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Sandy Mucky Minerai (S1) Depleted Dark Surface (F6) Sandy Mucky Minerai (S1) Depleted Dark Surface (F7) 5 cm Mucky Peet or Peat (S3) Redox Depressions (F8) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator eather Layer (if observed): Type: Depth finches):	Hvdroger	Sulfide (A4)		Dark Surfac	e (S7)			Other (Expla	in in Remark	(s)
2 cm Muck (A10) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) 5 cm Muck (Paet or Peat (S3) Redox Depressions (F8) Indicators of hydrophytic vegetation and welland hydrology must be present, unless disturbed or problematic. * Test Indicator cettret/ve Layer (If observed): Type: Type:										,
Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) S orn Mucky Peat or Peat (S3) Redox Depressions (F8) Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator estrictive Layer (If observed): Type: Depth (inches): Is Hydric Soil Present? Yes Depth (inches): Is Hydric Soil Present? Yes Surface Valuer (A1) Water-Stained Leaves (B9) Secondary Indicators (ininimum of one is required: check all that apply) Surface Valuer (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B8) High Water Table (A2) Aquatic Fana (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plana (B14) Dry-Season Water Table (C2) (-July 15 or Water Marks (B1) Hydrogen Sufface Odor (C1) Craffsh Burrows (C8) Saturation (Valuer Present 20) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C4) Recent tor Reduction In Tilide Solis (C6) Geomorphic Position (D2) Drin Deposits (B3) Presence of Reduction In Tilide Solis (C6) Geomorphic Positio					• • •					
Thick Dark Surface (A12) Redox Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) S cm Mucky Peat or Peat (S3) Redox Depressions (F8) Indicators of hydrophytic vegetation and welland hydrology must be present, unless disturbed or problematic. * Test Indicator estrictive Layer (If Observed): Type: Type:		. ,	0		• • •					
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) Redox Depressions (F8) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test indicator estrictive Layer (if observed): Type: Depth (inches): remarks: Compared M Sardy Mucky Mineral (S1) Image: Surface Soil Present? Yes No emarks: Compared M Surface Soil Present? Yes Surface Soil Present? Yes Yes Yes Surface Soil Cracks (86) High Water Table (A2) Aquatic Fauna (B13) Saturation (A3) The Aquatic Prants (B14) Drive Season Water Table (C2) Saturation (A3) Price Aquatic Plants (B14) Drive Season Water Table (C2) Saturation Visible on Aerial Imagery (C3 Saturation Visible on Aerial Imagery (C3) Secondary Indicators (B2) Drift Deposits (B3) Presence of Reduced Iron (C4) Surface Soil Cracks (B6) Thin Muck Surface (C7) Innuck Surface		·	')							
Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator estrictive Layer (If observed): Type: Depth (inches):		• • • •			. ,					
estrictive Layer (if observed): Type:	5 cm Mud	sky Peat of Peat (53)		Redox Dep	ressions (Fo)					
Type: Depth (inches): Is Hydric Soil Present? Yes No emarks: compacted fdf YDROLOGY	Indicators of I	nudeanhudia unantation an								
Type: Depth (inches): Is Hydric Soil Present? Yes No emarks: compacted fdf YDROLOGY	indicators of i	hydrophylic vegetation an	d wetland hy	drology must be pre	esent, unless dist	turbed or p	roblematic.	* Test Indicator		
Depth (inches): Is Hydric Soil Present? Yes No emarks: Compacted Fill Its Hydric Soil Present? Yes No etland Hydrology Indicators: finany Indicators (innimum of one is required: check all that apply) Secondary Indicators (minimum of two required: Secondary Indicators (minimum of two required: Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) Drainage Patterns (B10) High Water Table (A2) Aquatic Flauna (B13) Drainage Patterns (B10) Drainage Patterns (B10) Drainage Patterns (B10) Saturation (A3) Drainage Patterns (B10) Crayfish Burrows (C3) Saturation Visible on Aerial Imagery (C3) S			d wetland hy	drology must be pre	esent, unless dist	turbed or p	roblematic.	* Test Indicator		
emarks: Zom gradul All YDROLOGY fetland Hydrology Indicators: imary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: Check all that apply) Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Flauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (-July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Ortit Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Positin (D2) Iron Deposits (B3) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): Depth (inches): Depth (inches): utrace Water Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No	estrictive La		d wetland hy	rdrology must be pre	esent, unless dist	turbed or p	roblematic.	* Test Indicator		
YDROLOGY tetland Hydrology Indicators: imary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Dry-Season Water (Able (C2) (-July 15 or Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (-July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9 Drif Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): End End water Trable Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No eaturation Present? Yes No Depth (i	estrictive La	yer (if observed):	d wetland hy	rdrology must be pre	esent, unless dist	turbed or p	roblematic.		resent?	Yes No
YDROLOGY tetland Hydrology Indicators: imary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Dry-Season Water (Able (C2) (-July 15 or Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (-July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9 Drif Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): End End water Trable Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No eaturation Present? Yes No Depth (i	estrictive La	yer (if observed):		rdrology must be pre	esent, unless dist	turbed or p	roblematic.		resent?	Yes No
YDROLOGY tetland Hydrology Indicators: imary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Dry-Season Water (Able (C2) (-July 15 or Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (-July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9 Drif Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): End End water Trable Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No eaturation Present? Yes No Depth (i	Type: Depth (inc	yer (if observed):		rdrology must be pre	esent, unless dist	turbed or p	roblematic.		resent?	Yes No
fetland Hydrology Indicators: Secondary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (-July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) eld Observations: Urface Water Present? Yes No Acturation Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if ava	Type: Depth (inc	yer (if observed):		rdrology must be pro	esent, unless dist	turbed or p	roblematic.		resent?	Yes No
fetland Hydrology Indicators: Secondary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (-July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) eld Observations: Urface Water Present? Yes No Acturation Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if ava	Type: Depth (inc	yer (if observed):		rdrology must be pro	esent, unless dist	turbed or p	roblematic.		resent?	Yes No
fetland Hydrology Indicators: Secondary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (-July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) eld Observations: Urface Water Present? Yes No Acturation Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if ava	estrictive La Type: Depth (inc	yer (if observed):		rdrology must be pro	esent, unless dist	turbed or p	roblematic.		resent?	Yes <u>No</u>
rimary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (-July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9 Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geornorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Ield Observations: Depth (inches): Is Wetland Hydrology Present? Yes No Icludes capillary fringe) No Depth (inches): Is Wetland Hydrology Present? Yes No escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Is available: <td< th=""><th>estrictive La Type: Depth (inc emarks:</th><th>compactul</th><th></th><th>rdrology must be pro</th><th>esent, unless dist</th><th>turbed or p</th><th>roblematic.</th><th></th><th>resent?</th><th>Yes <u>No</u></th></td<>	estrictive La Type: Depth (inc emarks:	compactul		rdrology must be pro	esent, unless dist	turbed or p	roblematic.		resent?	Yes <u>No</u>
Surface Water (A1) Water-Stained Leaves (B9) Surface Soil Cracks (B6) High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (~July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9 Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): Depth (inches): Is Wetland Hydrology Present? Yes No Includes capillary fringe) No Depth (inches): Is Wetland Hydrology Present? Yes No No Depth (inches): Depth (inches): Is Wetland Hydrology Present? Yes No No Beerration Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No No Beetr	estrictive La Type: Depth (inc emarks:	yer (if observed): ches): Comgactul SY		rdrology must be pro	esent, unless dist	turbed or p	roblematic.		resent?	Yes No
High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10) Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (~July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9 Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): Is Wetland Hydrology Present? Yes No Adater Table Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No cludes capillary fringe) Depth (inches): Is Wetland Hydrology Present? Yes No	estrictive La Type: Depth (inc emarks: IYDROLOG	yer (if observed): thes): Compacted iY logy Indicators:	tu		esent, unless dist	turbed or p	roblematic.	ls Hydric Soil Pr		
Saturation (A3) True Aquatic Plants (B14) Dry-Season Water Table (C2) (~July 15 or Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9 Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): Depth (inches): Is Wetland Hydrology Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Is wailable: Sections), if available:	estrictive La Type: Depth (ind emarks: IYDROLOG /etland Hydro rimary Indicat	yer (if observed): thes): Comgachil iY logy Indicators: tors (minimum of one is re	tu	ck all that apply)			roblematic.	Is Hydric Soil Pr	ndicators (mi	nimum of two require
Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8) Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) FAC-Neutral Test (D5) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): Water Table Present? Yes No Depth (inches): Laturation Present? Yes No Depth (inches): Includes capillary fringe) Lis Wetland Hydrology Present? Yes No escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Is available:	estrictive La Type: Depth (inc emarks: IYDROLOG /etland Hydro rimary Indicat Surface \	yer (if observed): thes): Compactful SY logy indicators: tors (minimum of one is re Water (A1)	tu	ck all that apply)	ined Leaves (B9		roblematic.	Is Hydric Soil Pr	ndicators (mi	nimum of two require
Sediment Deposits (B2) Oxidized Rhizospheres on Living Roots (C3) Saturation Visible on Aerial Imagery (C9 Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) eld Observations: Depth (inches): Depth (inches): urface Water Present? Yes No Depth (inches): Depth (inches): Is Wetland Hydrology Present? Yes No Depth (inches): Is Wetland Hydrology Present? Ves No Depth (inches): Is Wetland Hydrology Present? escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Stream gauge, monitoring well, aerial photos, previous inspections), if available:	estrictive La Type: Depth (inc emarks: IYDROLOG /etland Hydro rimary Indical Surface V High Wat	yer (if observed): thes): Comparately for parately fo	tu	ck all that apply) Water-Sta Aquatic Fa	ined Leaves (B9 auna (B13)		roblematic.	Is Hydric Soil Pr	ndicators (mi ice Soil Cracl iage Patterns	nimum of two require (s (B6) (B10)
Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1) Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) FAC-Neutral Test (D5) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): Ield Observations: Depth (inches): Depth (inches): Jater Table Present? Yes No Depth (inches): Depth (inches): Depth (inches): Is Wetland Hydrology Present? Yes No escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Is wetland Hydrology Present? Yes No	estrictive La Type: Depth (inc emarks: IYDROLOG /etland Hydro rimary Indicat Surface V High Wat Saturatio	SY logy Indicators: Nater (A1) ter Table (A2) n (A3)	tu	ck all that apply) Water-Sta Aquatic Fi True Aqua	ined Leaves (B9 auna (B13) atic Plants (B14)))	roblematic.	Is Hydric Soil Pr	ndicators (mi ice Soil Cracl age Pattems Season Wate	nimum of two require <s (b6)<br="">; (B10) r Table (C2) <i>(~July 15 o</i></s>
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2) Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) FAC-Neutral Test (D5) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Depth (inches): Image: Concave Surface (C7) Index Water Present? Yes No Depth (inches): Depth (inches): Image: Concave Surface (C7) Algal Mat or Crust (M4) Yes No Depth (inches): Image: Concave Surface (C7) FAC-Neutral Test (D5) Index Water Present? Yes No Depth (inches): Image: Concave Surface (C7) Image: Concave Surface (C7) Alter Table Present? Yes No Depth (inches): Image: Concave Surface (C7) Image: Concave Surface (C7) Alter Table Present? Yes No Depth (inches): Image: Concave Surface (C7) Image: Concave Surface (C7) Image: Concave Surface (C7) Indudes capillary fringe) Image: Concave Surface (C7) Depth (inches): Image: Concave Surface (C7) Image: Concave Surface (C7) Image: Concave Surface (C7) Indudes capillary fringe) Image: Conca	estrictive La Type: Depth (inc emarks: IYDROLOG /etland Hydro rimary Indicat Surface V High Wat Saturatio	SY logy Indicators: Nater (A1) ter Table (A2) n (A3)	tu	ck all that apply) Water-Sta Aquatic Fa True Aqua Hydrogen	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C1))		Is Hydric Soil Pr	ndicators (mi ice Soil Cracl age Pattems Season Wate	nimum of two require <s (b6)<br="">; (B10) r Table (C2) <i>(~July 15 o</i></s>
Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5) Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) FAC-Neutral Test (D5) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Edd Observations: urface Water Present? Yes No Depth (inches): //ater Table Present? Yes No Depth (inches): aturation Present? Yes No Depth (inches): aturation Present? Yes No Depth (inches): active control of the control o	estrictive La Type: Depth (inc emarks: //YDROLOG /etland Hydro rimary Indicat Surface V High Wat Saturatio Water Ma	SY logy Indicators: corr (minimum of one is no Nater (A1) ter Table (A2) n (A3) arks (B1)	tu	ck all that apply) Water-Sta Aquatic Fa True Aqua Hydrogen	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C1))		Is Hydric Soil Pr	ndicators (mi ice Soil Cracl age Pattems Season Wate īsh Burrows	nimum of two require (s (B6) (B10) r Table (C2) <i>(~July 15 o</i> (C8)
Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Ield Observations: Depth (inches): urface Water Present? Yes No Depth (inches): Depth (inches): Depth (inches): aturation Present? Yes No Depth (inches): Includes capillary fringe) Is Wetland Hydrology Present? escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	estrictive La Type: Depth (inc emarks: //YDROLOG /etland Hydro rimary Indicat Surface V High Wat Saturatio Water Ma Sedimen	SY logy Indicators: corr graceful SY logy Indicators: cors (minimum of one is no Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2)	tu	ck all that apply) Water-Sta Aquatic Fi True Aqua Hydrogen Oxidized I	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C ⁷ Rhizospheres on	1) Living Roc		Is Hydric Soil Pr	ndicators (mi ice Soil Cracl age Patterns Season Wate īsh Burrows ration Visible	nimum of two require (s (B6) (B10) r Table (C2) (~July 15 o (C8) on Aerial Imagery (C9
Inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9) Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) Ield Observations: Depth (inches): urface Water Present? Yes No Depth (inches): Depth (inches): Depth (inches): aturation Present? Yes No Depth (inches): Includes capillary fringe) Is Wetland Hydrology Present? escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	estrictive La Type: Depth (inc emarks: //YDROLOG /etland Hydro rimary Indical Surface V High Wat Saturatio Water Ma Sedimen Drift Dep	SY logy Indicators: com graceful SY logy Indicators: cors (minimum of one is no Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) posits (B3)	tu	ck all that apply) Water-Sta Aquatic Fi True Aqua Hydrogen Oxidized I Presence	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C ⁷ Rhizospheres on of Reduced Iron	1) Living Roo (C4)	ots (C3)	Is Hydric Soil Pr Secondary I Surfa Drain Dry-S Crayf Satur Satur	ndicators (mi ice Soil Cracl age Patterns Season Wate fish Burrows ration Visible red or Stresso	nimum of two require (s (B6) (B10) r Table (C2) (-July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1)
Sparsely Vegetated Concave Surface (B8) Other (Explain in Remarks) lefd Observations: urface Water Present? Yes No Depth (inches): vater Table Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No aturation Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No aturation Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Is available: Is Wetland Hydrology Present? Yes No	estrictive La Type: Depth (inc emarks: //YDROLOG /etland Hydro rimary Indical Surface N High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat	er (if observed): Comparately	tu	ck all that apply) Water-Sta Aquatic Fi True Aqua Hydrogen Oxidized I Presence Recent Inc	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C ⁷ Rhizospheres on of Reduced Iron on Reduction in T	1) Living Roo (C4)	ots (C3)	Is Hydric Soil Pr Secondary I Surfa Drain Dry-S Crayf Satur Sturt Geor	ndicators (mi ice Soil Cracl age Patterns Season Wate fish Burrows ration Visible red or Stresso norphic Posit	nimum of two require (s (B6) (B10) r Table (C2) (-July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2)
ield Observations: Depth (inches): urface Water Present? Yes No Depth (inches): /ater Table Present? Yes No Depth (inches): aturation Present? Yes No bepth (inches):	estrictive La Type: Depth (inc emarks: IYDROLOG /etland Hydro rimary Indical Saturatio Water Ma Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Depo	Aver (If observed): Comparately Comparatel	fill equired: che	ck all that apply) Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Inc Thin Muck	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (Cr Rhizospheres on of Reduced Iron on Reduction in T s Surface (C7)	1) Living Roo (C4)	ots (C3)	Is Hydric Soil Pr Secondary I Surfa Drain Dry-S Crayf Satur Sturt Geor	ndicators (mi ice Soil Cracl age Patterns Season Wate fish Burrows ration Visible red or Stresso norphic Posit	nimum of two require (s (B6) (B10) r Table (C2) (-July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2)
urface Water Present? Yes No Depth (inches): Depth (inches): /ater Table Present? Yes No Depth (inches): Depth (inches): aturation Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No ocludes capillary fringe) Depth (inches): Depth (inches): Is Wetland Hydrology Present? Yes No escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Sections Sections Sections	estrictive La Type: Depth (inc emarks: IYDROLOG /etland Hydro rimary Indicat Surface N High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Depo Inundatio	Aver (If observed): Comparately Comparately Togy Indicators: cors (minimum of one is re Avater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) in Visible on Aerial Image	Fill equired: che	ck all that apply) Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Inc Thin Muck Gauge or	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C/ Rhizospheres on of Reduced Iron on Reduction in T s Surface (C7) Well Data (D9)	1) Living Roo (C4)	ots (C3)	Is Hydric Soil Pr Secondary I Surfa Drain Dry-S Crayf Satur Sturt Geor	ndicators (mi ice Soil Cracl age Patterns Season Wate fish Burrows ration Visible red or Stresso norphic Posit	nimum of two require (s (B6) (B10) r Table (C2) (July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2)
Vater Table Present? Yes No Depth (inches): la Wetland Hydrology Present? Yes la Wetland Hydrology Present? Yes No Depth (inches): la Wetland Hydrology Present? Yes la	INTERPORT INTERP	Aver (If observed): Comparately Comparately Togy Indicators: cors (minimum of one is re Avater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) in Visible on Aerial Image	Fill equired: che	ck all that apply) Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Inc Thin Muck Gauge or	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C/ Rhizospheres on of Reduced Iron on Reduction in T s Surface (C7) Well Data (D9)	1) Living Roo (C4)	ots (C3)	Is Hydric Soil Pr Secondary I Surfa Drain Dry-S Crayf Satur Sturt Geor	ndicators (mi ice Soil Cracl age Patterns Season Wate fish Burrows ration Visible red or Stresso norphic Posit	nimum of two require (s (B6) (B10) r Table (C2) (July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2)
aturation Present? Yes No Depth (inches): Is Wetland Hydrology Present? Yes No cludes capillary fringe) escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	estrictive La Type: Depth (ind eemarks: IYDROLOG /etland Hydro rimary Indicat Saturatio Water Ma Sedimen Drift Dep Algal Mat iron Depc Inundatio Sparsely	yer (if observed): thes): Comparately if Y logy Indicators: ors (minimum of one is re Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) n Visible on Aerial Image Vegetated Concave Surfa	Fill equired: che	ck all that apply) Water-Sta Aquatic Fa True Aqua Hydrogen Oxidized I Presence Recent Inc Thin Muck Gauge or	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C/ Rhizospheres on of Reduced Iron on Reduction in T s Surface (C7) Well Data (D9)	1) Living Roo (C4)	ots (C3)	Is Hydric Soil Pr Secondary I Surfa Drain Dry-S Crayf Satur Sturt Geor	ndicators (mi ice Soil Cracl age Patterns Season Wate fish Burrows ration Visible red or Stresso norphic Posit	nimum of two require (s (B6) (B10) r Table (C2) (July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2)
escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	estrictive La Type: Depth (ind eemarks: IYDROLOG /etland Hydro rimary Indical Saurface V High Wal Saturatio Water Ma Sedimen Drift Dep Algal Mal iron Depc Inundatic Sparsely ield Observa	yer (if observed): thes): Comparately Comparately in Comparately	-fill equired: che ny (B7) ace (B8)	ck all that apply) — Water-Sta — Aquatic F: — True Aqua — Hydrogen — Oxidized I — Presence — Recent Irc — Thin Muck — Gauge or — Other (Exp	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C' Rhizospheres on of Reduced Iron on Reduction in T & Surface (C7) Well Data (D9) plain in Remarks)	1) Living Roo (C4)	ots (C3)	Is Hydric Soil Pr Secondary I Surfa Drain Dry-S Crayf Satur Sturt Geor	ndicators (mi ice Soil Cracl age Patterns Season Wate fish Burrows ration Visible red or Stresso norphic Posit	nimum of two require (s (B6) (B10) r Table (C2) (July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2)
escribe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	estrictive La Type: Depth (ind eemarks: IYDROLOG /etland Hydro rimary Indical Saturatio Water Ma Saturatio Water Ma Sedimen Drift Dep Algal Mai iron Depc Inundatio Sparsely ield Observa urface Water	yer (if observed): thes): Comparately if Y logy Indicators: ors (minimum of one is re Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) n Visible on Aerial Image Vegetated Concave Surfit tions: Present? Yes	-fill equired: chee ny (B7) ace (B8)	ck all that apply) — Water-Sta — Aquatic F: — True Aqua — Hydrogen — Oxidized I — Presence — Recent Irc — Thin Much — Gauge or — Other (Exp	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C' Rhizospheres on of Reduced Iron on Reduction in T s Surface (C7) Well Data (D9) plain in Remarks)	1) Living Roo (C4)	ots (C3)	Is Hydric Soil Pr Secondary I Surfa Drain Dry-S Crayf Satur Sturt Geor	ndicators (mi ice Soil Cracl age Patterns Season Wate fish Burrows ration Visible red or Stresso norphic Posit	nimum of two require (s (B6) (B10) r Table (C2) (July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2)
	estrictive La Type: Depth (ind emarks: IYDROLOG /etland Hydro rimary Indicat Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat iron Depc Inundatic Sparsely ield Observa urface Water Vater Table Po	yer (if observed): thes): Comparately if Y logy Indicators: ors (minimum of one is re Water (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) m Visible on Aerial Image Vegetated Concave Surfit tions: Present? Yes	equired: che	ck all that apply) — Water-Sta — Aquatic F: — True Aquat — Hydrogen — Oxidized I — Presence — Recent Irc — Thin Muck — Gauge or — Other (Exp — Depth (i — Depth (i	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C' Rhizospheres on of Reduced Iron on Reduction in T (Surface (C7) Well Data (D9) plain in Remarks) inches):	1) Living Roo (C4)	ots (C3) (C6)	Is Hydric Soil Pr	ndicators (mi ice Soil Crac age Patterns Season Wate fish Burrows ration Visible red or Stresse norphic Posit Neutral Test	nimum of two require (s (B6) (B10) r Table (C2) (~July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2) (D5)
emarks:	estrictive La Type: Depth (inc emarks: IYDROLOG /etland Hydro rimary Indicat Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Dep Inundatic Sparsely ield Observa urface Water Yater Table Pr aturation Pres ncludes capili	yer (if observed): thes): Compactful Compactful SY logy indicators: cors (minimum of one is re Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) in Visible on Aerial Image Vegetated Concave Surfations: Present? Present? Yes sent? Yes ary fringe)	Lill aquired: che ry (B7) ace (B8) No	ck all that apply) — Water-Sta — Aquatic Fa — True Aqua — Hydrogen — Oxidized I — Presence — Recent Inc — Thin Much — Gauge or — Other (Exp — Depth (i — Depth (i	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C ⁷ Rhizospheres on of Reduced Iron on Reduction in T (Surface (C7) Well Data (D9) plain in Remarks) inches): 	1) Living Roo (C4) Tilled Soils	ots (C3) (C6)	Is Hydric Soil Pr	ndicators (mi ice Soil Crac age Patterns Season Wate fish Burrows ration Visible red or Stresse norphic Posit Neutral Test	nimum of two require (s (B6) (B10) r Table (C2) (~July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2) (D5)
emarks	estrictive La Type: Depth (inc emarks: IYDROLOG /etland Hydro rimary Indicat Surface V High Wat Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Dep Inundatic Sparsely ield Observa urface Water Yater Table Pr aturation Pres ncludes capili	yer (if observed): thes): Compactful Compactful SY logy indicators: cors (minimum of one is re Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) in Visible on Aerial Image Vegetated Concave Surfations: Present? Present? Yes sent? Yes ary fringe)	Lill aquired: che ry (B7) ace (B8) No	ck all that apply) — Water-Sta — Aquatic Fa — True Aqua — Hydrogen — Oxidized I — Presence — Recent Inc — Thin Much — Gauge or — Other (Exp — Depth (i — Depth (i	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C ⁷ Rhizospheres on of Reduced Iron on Reduction in T (Surface (C7) Well Data (D9) plain in Remarks) inches): 	1) Living Roo (C4) Tilled Soils	ots (C3) (C6)	Is Hydric Soil Pr	ndicators (mi ice Soil Crac age Patterns Season Wate fish Burrows ration Visible red or Stresse norphic Posit Neutral Test	nimum of two require (s (B6) (B10) r Table (C2) (~July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2) (D5)
	estrictive La Type: Depth (inc emarks: YDROLOG /etland Hydro rimary Indicat Surface V High Wate Saturatio Water Ma Sedimen Drift Dep Algal Mat Iron Dep Inundatio Sparsely (eld Observa urface Water /ater Table Pr aturation Pres neludes capilil	yer (if observed): thes): Compactful Compactful SY logy indicators: cors (minimum of one is re Nater (A1) ter Table (A2) n (A3) arks (B1) t Deposits (B2) osits (B3) t or Crust (B4) osits (B5) in Visible on Aerial Image Vegetated Concave Surfations: Present? Present? Yes sent? Yes ary fringe)	Lill aquired: che ry (B7) ace (B8) No	ck all that apply) — Water-Sta — Aquatic Fa — True Aqua — Hydrogen — Oxidized I — Presence — Recent Inc — Thin Much — Gauge or — Other (Exp — Depth (i — Depth (i	ined Leaves (B9 auna (B13) atic Plants (B14) Sulfide Odor (C ⁷ Rhizospheres on of Reduced Iron on Reduction in T (Surface (C7) Well Data (D9) plain in Remarks) inches): 	1) Living Roo (C4) Tilled Soils	ots (C3) (C6)	Is Hydric Soil Pr	ndicators (mi ice Soil Crac age Patterns Season Wate fish Burrows ration Visible red or Stresse norphic Posit Neutral Test	nimum of two require (s (B6) (B10) r Table (C2) (~July 15 o (C8) on Aerial Imagery (C9 ad Plants (D1) ion (D2) (D5)

配

WETLAN	D DETERM	INATION DAT	A FORM -	Midwest Region
Project Rite Gauth Ghars Pack Beach Be- La	ation	City/County	M: hund	ee Milwaukee Sampling Date: 10/23 12017
Applicant/Owner: Robert Wright, Smith			1 II IW MALL	State:Sampling Point:
Investigator(s): TAWS - Alice Thompson, Carissa A			Township	
Landform: Summit Shoulder Backslope Footslope Toeslope Urban Modified				
Soil Map Unit Name: Unmchoed				WWI classification:
Are climatic/hydrologic conditions on the site typical for this tim	ne of year?	Yes X	No	Reason: Previous 90 day Precipitation WET(NORMAL DRY
Are Vegetation, Soil, or Hydrology				Are "Normal Circumstances" present? Yes No X
Are Vegetation, Soil, or Hydrology	problematic?	lotarbod		
SUMMARY OF FINDINGS - Attach site map showing s	sampling p	oint locations	, transect	s, important features, etc.
Hydrophytic Vegetation Present? YesNo	_X	Is	the Sample	ed Area within
Hydric Soil Present? YesNo	_×		Wetland?	YesNo
Wetland Hydrology Present? Yes No	×			arsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine Farmed Wetland
Remarks: linear lith like	feature			Fost parth - sidewalks
		,		
however upland -	not	collecto	1 8'	ponding water
VEGETATION - Use scientific names of plants.				0
the himan 15107	Abcoluto %	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: equiv to 30' radius)	Cover	Species?	Status	Number of Denting the Country That
1. Juglens nigra	30	M	FACU	Number of Dominant Species That Are OBL, FACW, or FAC:
2. Gleditsia trigranthos			Fred	
2. Greansia Trigranting	-20	<u></u>	TACU	Total Number of Dominant Species
3				Across All Strata:
4				Percent of Dominant Species That Are
5				OBL, FACW, or FAC:
	60	= Total Cover	30/12	
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)	50		FACU	Prevalence Index worksheet:
1. Robus illaus		<u> </u>		Total % Cover of: Multiply by:
2,		1		OBL species x 1 =
3				FACW species x 2 =
4				FAC species x 3 =
5.				FACU species x 4 =
6.				UPL species x 5 =
7.				Column Totals: (A) (B)
	50	= Total Cover	25/10	Prevalence Index = B/A =
Herb Stratum (Plot size: equiv to 5' radius)				Hydrophytic Vegetation Indicators:
1. Allium tricoccum	10		Facu	Rapid test for hydrophytic vegetation
2 Samicula marilandica	50	M	FACV	Dominance Test is >50%
3. Ageratina altissima	30	M	FACU	Prevalence Index is ≤3.01
4. Nepetra cutaria	30	M	FACU	Morphological Adaptations ¹ (Provide supporting data in Remarks)
5. Cichorium inty bis			FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
				¹ Indicators of hydric soil and wetland hydrology must be present, unless
6				disturbed or problematic.

= Total Cover 65/26

1		woody plants less than 3.28 ft tall.
2		Woody vines - All woody vines greater
	= Total Cover	Is Hydrophytic Vegetation Present?
Remarks:		

1.30

Thompson & Associates Wetland Services

Woody Vine Stratum (Plot size: equiv to 30' radius)

8

9,

10.

1.

Based on USACE Midwest Supplement Datasheet, v2.0

woody vines greater than 3.28 ft in height.

Yes

No X

Definitions of Vegetation Strata:

3.28 (1m) tall.

height (DBH), regardless of height.

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast

Sapling/shrub - Woody plants less than 3 in. DBH and greater than

Herb - All herbaceous (non-woody) plants, regardless of size, and

Sampling Point: 5

Drofile Departm	Henry (Describe to the	donth needo	d to dooumont the l	adlactor or con	firm the el	hoopen of	Indiantan)	
Profile Descrip	tion: (Describe to the	e deput neede			mirin the al	osence or	indicators.)	
Depth	Matrix		Redox Featu					
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Locz	Texture	Remarks
0-7	104 R3/2	100				587	SANdy elay	10 44
11	(2000 ())	1						
	10mpnetal	.501						
					·			
		,			_			
'Type: C=Conce	entration, D=Depletion	, RM=Reduced	Matrix, MS=Masked	Sand Grains			² Location: PL	=Pore Lining, M=Matrix.
the state of the s	cators: (For LRR M)						Indicators for Problemat	
Histosol (A	A1)		Sandy Gleye	d Matrix (S4)			Coast Prairie Redo	k (A16)
Histic Epip	edon (A2)		Sandy Redo	k (S5)			Iron-Manganese Ma	asses (F12)
Black Hist	ic (A3)		Stripped Mat	rix (S6)			Very Shallow Dark	Surface (F22)*
Hydrogen	Sulfide (A4)		Dark Surface	e (S7)			Other (Explain in R	emarks)
Stratified L	ayers (A5)		Loamy Muck	y Mineral (F1)				
2 cm Muc	< (A10)		Loamy Gleye	ed Matrix (F2)				
Depleted I	Below Dark Surface (A	(11)	Depleted Ma	trix (F3)			3	
	c Surface (A12)		Redox Dark					
	cky Mineral (S1)			rk Surface (F7)				
5 cm Mucl	ky Peat or Peat (S3)		Redox Depre	essions (F8)				
alndicators of h	vdrophytic vegetation	and wetland hy	drology must be pres	ent, unless dist	urbed or pr	oblematic.	* Test Indicator	
Restrictive Lav	er (if observed):							
Type:								
Depth (incl	ies):						Is Hydric Soil Present?	Yes No X
Remarks:		v						
	11. 14	11:2	Chisto					
	ivery	Bro Jer	Chisiv	~~)				
HYDROLOG	Y							
Wetland Hydrold	ogy Indicators:							
-	rs (minimum of one is	required; chec	k all that apply)				Secondary Indicato	rs (minimum of two required)
Surface W				ned Leaves (B9))		Surface Soil	owned the same and a provide state of the same of the
High Wate	er Table (A2)		Aquatic Fa	una (B13)			Drainage Pa	tterns (B10)
Saturation			True Aquat	ic Plants (B14)				Water Table (C2) (~July 15 or later)
Water Mai	*ks (B1)		Hydrogen S	Sulfide Odor (C1)		Crayfish Bur	rows (C8)
Sediment	Deposits (B2)		Oxidized R	hizospheres on	Living Root	ts (C3)	Saturation V	isible on Aerial Imagery (C9)
Drift Depo	sits (B3)		Presence of	f Reduced Iron	(C4)		Stunted or S	tressed Plants (D1)
Algal Mat	or Crust (B4)		Recent Iron	Reduction in T	illed Soils (C6)	Geomorphic	Position (D2)
Iron Depos	sits (B5)		Thin Muck	Surface (C7)			FAC-Neutral	Test (D5)
	Visible on Aerial Imag		Gauge or V	Vell Data (D9)				
Sparsely \	egetated Concave Su	rface (B8)	Other (Expl	ain in Remarks)				
Field Observati	ons:							
Surface Water F		s No	Depth (in	ches):				
Water Table Pre			Depth (in					
Saturation Prese			Depth (in			Is Wet	land Hydrology Present?	Yes No X
(includes capilla			1			1		
Describe Record	ded Data (stream gaug	ge, monitoring	well, aerial photos, p	revious inspecti	ons), if avai	lable:		
Remarks:								

Thompson & Associates Wetland Services

				Midwest Region
miert/Site: Goutto Share Pack Beach Be-loca	tion City	County: (Nilway	ree/Milwaykee Sampling Date: 10/23 12017
pplicant/Owner: Robert Wright, Smith	Group			State: WI Sampling Point: 6
vestigator(s): TAWS - Alice Thompson Carissa An	ich Section	10	Township	0 N, Range 22 East West
Indform: Summit Shoulder Backslope Footslope Toeslope Urban Modified Ot	ther	Lo	ocal relief:	concave, convex, linear, other:
oil Map Unit Name: UN MOUDDRA				WWI classification:
re climatic/hydrologic conditions on the site typical for this time	e of year? Yes	<u>X</u> _	No	
re Vegetation, Soil, or Hydrologysig re Vegetation, Soil, or Hydrology pr	roblematic?			Are "Normal Circumstances" present? YesNo X
UMMARY OF FINDINGS - Attach site map showing sa	ampling point lo	cations	, transect	s, important features, etc.
Hydrophytic Vegetation Present? YesNo Hydric Soil Present? YesNo	-7-	aV	Vetland?	ed Area within Yes No X Marsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine
Wetland Hydrology Present? YesNo	<u> </u>			Farmed Wetland
rocky beach - segments	lake from	and the second sec	wet	land - acts like
· a porous bern - distub	el by	wave.	act	ian - ice etc problemance may
VEGETATION - Use scientific names of plants.	of nation	d	いいい	ian - ice etc Problemadic Arr
	Absolute % Domi		Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: equiv to 30' radius) 1.	Cover Spec		Status	Number of Dominant Species That Are OBL, FACW, or FAC:(A)
2				Total Number of Dominant Species Across All Strata: (B)
4				Percent of Dominant Species That Are
5	= Tota	Cover		OBL, FACW, or FAC: (A/B)
 Sapling/Shrub Stratum (Plot size: equiv to 15' radius)	= 10ta	II Covei		Prevalence Index worksheet:
Y Y				Total % Cover of: Multiply by:
1				OBL species x1 =
2				FACW species x 2 =
3				
4				
5				
6				UPL species x 5 =
7	= Tota	al Cover		Column Totals: (A)(B)
Herb Stratum (Plot size: equiv to 5' radius)				Hydrophytic Vegetation Indicators:
I. /		-		Rapid test for hydrophytic vegetation
2.				Dominance Test is >50%
3.				Prevalence Index is ≤3.01
4.				Morphological Adaptations ¹ (Provide supporting data in Remarks)
5.	1			Problematic Hydrophytic Vegetation ¹ (Explain)
6				¹ Indicators of hydric soil and welland hydrology must be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
10	= Tota	al Cover		Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 (1m) tall.
Woody Vine Stratum (Plot size: equiv to 30' radius) 1				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2				Woody vines - All woody vines greater than 3.28 ft in height.
	= Tota	al Cover		Is Hydrophytic Vegetation Present? Yes No
Remarks: bare rocky brach	- 10		e setu	think.

0.	12.1		
Sam	pling	Point:	

SOIL								Sampling Point: 6	
Profile Descrip	ption: (Describe to the	depth needed	to document the i	ndicator or con	firm the a	bsence of	indicators.)		
Depth	Depth Matrix (inches) Color (moist) %		Redox Featu	ires				6	
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks	
D-7	104R 713	100					rock & SAM	l	
7"	0								
	10mp noted								
Type: C=Con	centration, D=Depletion,	RM=Reduced	Matrix MS=Masker	t Sand Grains			Zi ocation: Pl	.=Pore Lining, M=Matrix.	
	dicators: (For LRR M)						Indicators for Problema		
Histosol (Sandy Gleye	ed Matrix (S4)			Coast Prairie Red		
Histic Epi	ipedon (A2)	-	Sandy Redo	x (S5)			Iron-Manganese N	asses (F12)	
Black His	stic (A3)		Stripped Mat	trix (S6)			Very Shallow Dark	Surface (F22)*	
Hydrogen	n Sulfide (A4)		Dark Surface	e (S7)			Other (Explain in F	(emarks)	
Stratified	Layers (A5)		Loamy Muck	y Mineral (F1)			. <u> </u>		
2 cm Muc	ck (A10)		Loamy Gleye	ed Matrix (F2)					
Depleted	Below Dark Surface (A1	1)	Depleted Ma	atrix (F3)					
Thick Dar	rk Surface (A12)		Redox Dark	Surface (F6)					
Sandy Mu	ucky Mineral (S1)		Depleted Da	rk Surface (F7)					
5 cm Muc	cky Peat or Peat (S3)	-	Redox Depre	essions (F8)					
3Indicators of h	hydrophytic vegetation ar	nd wetland hyd	rology must be pres	sent, unless distu	rbed or pr	oblematic.	* Test Indicator		
	yer (if observed):				-				
Type:									
Depth (inc	ches):						Is Hydric Soil Present	? Yes <u>No X</u>	
Remarks:	,			1	k	1	1 7 1	in diameter	
1	light 10/0000		& mixed	WIT	DIC	nch	stones 1-2	in diametter	
	J								
HYDROLOG	Υ								
Wetland Hydrol	logy Indicators:								
Lange A	ors (minimum of one is r	equired: check	all that apply)				Secondary Indicate	ors (minimum of two required)	
Contraction of the local data	Vater (A1)		and the second se	ned Leaves (B9)				Cracks (B6)	
	er Table (A2)		Aquatic Fa	• • •				atterns (B10)	
Saturation	n (A3)			ic Plants (B14)			+	Water Table (C2) (-July 15 or later)	
Water Ma	arks (B1)			Sulfide Odor (C1)			Crayfish Bu		
Sediment	t Deposits (B2)		Oxidized R	hizospheres on L	iving Roo	ts (C3)		/isible on Aerial Imagery (C9)	
Drift Depo	osits (B3)		Presence c	of Reduced Iron (C4)			Stressed Plants (D1)	
Aigal Mat	or Crust (B4)		Recent Iron	Reduction in Til	led Soils ((C6)	Geomorphi	Position (D2)	

- Geomorphic Position (D2)
- FAC-Neutral Test (D5)

Gauge or Well Data (D9) Other (Explain in Remarks)

____ Thin Muck Surface (C7)

Field Observati

Iron Deposits (B5)

Inundation Visible on Aerial Imagery (B7)

Sparsely Vegetated Concave Surface (B8)

rield Observ	ations:									
Surface Wate	or Present?	Yes	_No	Depth (inche:	s):					
Water Table I	Present?	Yes	No V	Depth (inches	s):					6-
Saturation Pre		Yes	No	Depth (inches	s):		Is Wetland Hydrolog	y Present?	Yes	No
(includes cap	illary fringe)									
Remarks:				elm"	Pushal)	waves -	hickor		
	rounded	rock.	1 .	enn	1	- /	ų	3		
	than	Inte	Point	# 7						

Thompson & Associates Wetland Services

WETLAN	D DETERM	INATION DAT		Midwest Region
mied/Site: South Shore Park Beach Re-1	ocation	City/County:	Milwau	Ree/Milwarker Sampling Date: 10 23 12017
Applicant/Owner: Robert Wright, Smith	Group		stand dated. No. Workstone	State: WI Sampling Point: 7
nvestigator(s): TAWS - Alice Thompson Carissa P	nich	Section 10	Township	
andform: Summit Shoulder Backslope Footslope Toeslope Urban Modified				
Soil Map Unit Name: Unmanged				WWI classification:
Are climatic/hydrologic conditions on the site typical for this tir	ne of year?	Yes X_	No	Reason: Previous 90 day Precipitation WET(NORMAL DRY
Are Vegetation Soil or Hydrology	significantly	disturbed?		Are "Normal Circumstances" present? Yes No X
Are Vegetation Soil or Hydrology	problematic?	natural	distur	bance in storms
SUMMARY OF FINDINGS - Attach site map showing				
Hydrophytic Vegetation Present? Yes XN)	Is	the Sample	ed Area within Wetland Ar
) (al	Netland?	Yes X No
		We	tiand Type(M hemeral Basin	larsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine Farmed Wetland
" Remarks: ponded behind bene	the bea			thus whiter level
0				
similar to lake level	1114 -	count	Shin PL	brand on big storms)
VEGETATION - Use scientific names of plants.				
	Absolute %	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: equiv to 30' radius)	Cover	Species?	Status	Number of Dominant Species That
1,				Are OBL, FACW, or FAC:
2				Total Number of Dominant Species 3
3				Across All Strata: (B)
4				Percent of Dominant Species That Are
5				OBL, FACW, or FAC: (A/B)
Carling/Charle Other (Distained activity to 45) and up)		= Total Cover		Prevalence Index worksheet:
Sapling/Shrub Stratum (Plot size: equiv to 15' radius) 1. Salix interior	-15		Frew	
1. Shirth (Menter		<u> </u>	1100	Total % Cover of: Multiply by:
2				OBL species x 1 =
3			÷	FACW species x 2 =
4.				FAC species x 3 =
5				FACU species x 4 =
6				UPL species x 5 =
7				Column Totals: (A) (B)
	15	= Total Cover	8/2	Prevalence Index = B/A =
Herb Stratum (Plot size: equiv to 5' radius)	50			Hydrophytic Vegetation Indicators:
1. Phragmites asstralis		-14-	Facw	Rapid test for hydrophytic vegetation
2. Typha SP.	40	M	061	X Dominance Test is >50%
3. algale - in water				Prevalence Index is ≤3.01
4.				Morphological Adaptations ¹ (Provide supporting data in Remarks)
5.				Problematic Hydrophytic Vegetation ¹ (Explain)
6				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7				Definitions of Vegetation Strata:
8				Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
10				height (DBH), regardless of height.
Woody Vino Stratum (Platistics: on the to 201 radius)	90_	= Total Cover	45/18	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 (1m) tall.
Woody Vine Stratum (Plot size: equiv to 30' radius)				Herb - All herbaceous (non-woody) plants, regardless of size, and
1				woody plants less than 3.28 ft tall.
3				Woody vines - All woody vines greater than 3,28 ft in height.
3		= Total Cover		Is Hydrophytic Vegetation Present? Yes X No
Remarks:				· · · · · · · · · · · · · · · · · · ·

SOIL							
Profile Descrip	tion: (Describe to the	lepth neede	d to document the i	ndicator or confirm	the absence of	of indicators.)	
Depth	Matrix		Redox Featur				
(inches)	Color (moist)	%	Color (moist)	Ту	pe ¹ Loc ²	Texture	Remarks
0-3	1042211	100			b1 ~~ c	K Contrig	Dis Vork
SO CK	- can't get	Leph				Ø	
		<u>`</u> `				1	
				· · · · · · · · · · · · · · · · · · ·			
	entration, D=Depletion,	RM=Reduced	I Matrix, MS=Masked	I Sand Grains			cation: PL=Pore Lining, M=Matrix.
Histosol (/	icators: (For LRR M)		Sandy Glave	d Matrix (S4)			Problematic Hydric Soils ³ : airie Redox (A16)
	pedon (A2)		Sandy Redo	• •		the second se	ganese Masses (F12)
Black Hist			Stripped Mat				liow Dark Surface (F22)*
	Sulfide (A4)		Dark Surface			and the second s	plain in Remarks)
Stratified	Layers (A5)		Loamy Muck	y Mineral (F1)			
2 cm Muc	k (A10)		Loamy Gleye	ed Matrix (F2)			
	Below Dark Surface (A1	1)	Depleted Ma				
	k Surface (A12)		Redox Dark	. ,			
	icky Mineral (S1)			rk Surface (F7)			
	ky Peat or Peat (S3)		Redox Depre	essions (F6)			
³ Indicators of h	ydrophytic vegetation ar	id wetland hy	drology must be pres	sent, unless disturbed	l or problemati	c. * Test Indicator	
maloatoro or m	,,	a wonana ny					
Restrictive Lay	ver (if observed):	a noticita ny	a,				Prof. Julient
Restrictive Lay	ver (if observed):						Prof. Judent
Restrictive Lay Type: Depth (incl	ver (if observed):					ls Hydric Soil	
Restrictive Lay Type: Depth (incl Remarks:	hes):				" f/4+ .		
Restrictive Lay Type: Depth (inc Remarks:	ner (if observed): hes): ock similar	40	keach m	ock (1-2		reck) hou	Present? Yes X No
Restrictive Lay Type: Depth (inc Remarks:	ner (if observed): hes): ock similar	40	keach m	ock (1-2		reck) hou	Present? Yes X No
Restrictive Lay Type: Depth (incl Remarks:	rer (If observed): hes): ock similar with black	to coatin	brach n is on vo	ock = ox		reck) hou	Present? Yes X No
Restrictive Lay Type: Depth (inc Remarks:	rer (If observed): hes): ock similar with black hot pressi	to coatin	keach m	ock = ox		reck) hou	Present? Yes X No
Restrictive Lay Type: Depth (incl Remarks: V V HYDROLOG	rer (if observed): hes): ock similar with black hot prese	to coatin	brach n is on vo	ock = ox		reck) hou	Present? Yes X No
Restrictive Lay Type: Depth (incl Remarks:	rer (if observed): hes): ock similar with black hot prese	to coating	brach m s on vo drier ar	ock = ox		materal	Present? Yes X No
Restrictive Lay Type: Depth (inc) Remarks:	rer (If observed): hes): ock similar bit black hot presi- ogy Indicators: ors (minimum of one is r vater (A1)	to coating	k all that apply)	ock CI-2. ock - 0x r~s ned Leaves (B9)		materal Secondar	Present? Yes X No Vever Inil on wat -
Restrictive Lay Type: Depth (inc) Remarks:	rer (If observed): hes): ock similar black hot preserved y hot preserved ogy Indicators: pres (minimum of one is rev vater (A1) er Table (A2)	to coating	k all that apply) Aquatic Factor	ock (1-2 /~5 med Leaves (B9) una (B13)		secondar Secondar Dr	Present? Yes <u>No</u> Wevev I And on work - y Indicators (minimum of two required) Inface Soil Cracks (86) ainage Patterns (B10)
Restrictive Lay Type: Depth (inc) Remarks:	hes): OCK Similar OCK Similar but black hot preserved ogy Indicators: ors (minimum of one is revealed vater (A1) er Table (A2) n (A3)	to coating	k all that apply) Mater-Stair Aquatic Fau True Aquati	ned Leaves (B9) una (B13) ic Plants (B14)		Secondar Secondar Dr Dr	Present? Yes No Vevev Inil Inid Inid y Indicators (minimum of two required) Inface Soil Cracks (86) Inide Patterns (B10) y-Season Water Table (C2) (~July 15 or later)
Restrictive Lay Type: Depth (inc) Remarks:	hes): ock similar ock similar hot preserved whot preserved ogy Indicators: ors (minimum of one is reveal vater (A1) er Table (A2) n (A3) rks (B1)	to coating	k all that apply) Mater-Stair Aquatic Fau True Aquatic Hydrogen S	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1)	ganic.	Secondar Secondar Dr Cr	Present? Yes No Wevev I And On work - y Indicators (minimum of two required) urface Soil Cracks (B6) ainage Pattems (B10) y-Season Water Table (C2) (~July 15 or later) ayfish Burrows (C8)
Restrictive Lay Type: Depth (inc) Remarks:	hes): ock similar ock similar hot preserved whot preserved youth black whot preserved ogy Indicators: ors (minimum of one is reveal vater (A1) ar Table (A2) n (A3) rks (B1) Deposits (B2)	to coating	k all that apply) K all that apply) Aquatic Fau True Aquatic Fau Aquatic Fau Dividized Ri	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living	ganic.	Secondar Secondar Su Dr Cr Sa	Present? Yes No Vevev Inil Inil Inil y Indicators (minimum of two required) Inface Soil Cracks (86) ainage Patterns (B10) y-Season Water Table (C2) (~July 15 or later) ayfish Burrows (C8) Ituration Visible on Aerial Imagery (C9)
Restrictive Lay Type: Depth (inc) Remarks:	hes): ock similar hes): ock similar hot preserved): hot preserved y Indicators: ors (minimum of one is reveal vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sists (B3)	to coating	k all that apply) K all that apply All that apply K all that apply All that apply K all that apply All that apply All that apply K all that apply All that app	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living f Reduced Iron (C4)	Sanic Roots (C3)	Secondar Secondar Su Dr Cr Sa St St	Present? Yes No Vever Inid Inid Inid Inid Inid Inid Inid y Indicators (minimum of two required) Inface Soil Cracks (86) Inidage Patterns (B10) y-Season Water Table (C2) (-July 15 or later) Inidage Patterns (C3) Inidage Patterns (C3) ayfish Burrows (C8) Ituration Visible on Aerial Imagery (C9) Inidage or Stressed Plants (D1)
Restrictive Lay Type: Depth (inc) Remarks:	rer (If observed): hes): ock similar black hot preserved whot preserved ogy Indicators: ors (minimum of one is reveal vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sists (B3) or Crust (B4)	to coating	k all that apply) K all that apply All that apply K all that apply All that apply All that apply K all that apply Al	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living f Reduced Iron (C4) n Reduction in Tilled S	Sanic Roots (C3)	Secondar Secondar Su Dr Dr Cr Sa St St St St	Present? Yes No Vever Inil Inil Inil Inil Inil Inil Inil y Indicators (minimum of two required) Inface Soil Cracks (86) Inil ainage Patterns (B10) y-Season Water Table (C2) (~July 15 or later) ayfish Burrows (C8) Ituration Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) Formorphic Position (D2)
Restrictive Lay Type: Depth (inc) Remarks:	rer (If observed): hes): ock similar black hot prestr ogy Indicators: ors (minimum of one is r vater (A1) er Table (A2) h (A3) rks (B1) Deposits (B2) isits (B3) or Crust (B4) sits (B5)	to ating	k all that apply) K all that apply (K all that app	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7)	Sanic Roots (C3)	Secondar Secondar Su Dr Dr Cr Sa St St St St	Present? Yes No Vever Inid Inid Inid Inid Inid Inid Inid y Indicators (minimum of two required) Inface Soil Cracks (86) Inidage Patterns (B10) y-Season Water Table (C2) (-July 15 or later) Inidage Patterns (C3) Inidage Patterns (C3) ayfish Burrows (C8) Ituration Visible on Aerial Imagery (C9) Inidage or Stressed Plants (D1)
Restrictive Lay Type: Depth (inc) Remarks: HYDROLOG Wetland Hydrol Primary Indicato Surface W High Wate Saturation Water Ma Sediment Drift Depo Algal Mat Iron Depo Inundation	rer (If observed): hes): ock similar black hot preserved whot preserved ogy Indicators: ors (minimum of one is reveal vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sists (B3) or Crust (B4)	to ative equired: chec	k all that apply) K all that apply K all that apply) K all that apply K	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living f Reduced Iron (C4) n Reduction in Tilled S	Sanic Roots (C3)	Secondar Secondar Su Dr Dr Cr Sa St St St St	Present? Yes No Vever Inil Inil Inil Inil Inil Inil Inil y Indicators (minimum of two required) Inface Soil Cracks (86) Inil ainage Patterns (B10) y-Season Water Table (C2) (~July 15 or later) ayfish Burrows (C8) Ituration Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) Formorphic Position (D2)
Restrictive Lay Type: Depth (incl Remarks:	rer (if observed): hes): ock similar whot prese ogy Indicators: ors (minimum of one is r vater (A1) ar Table (A2) h (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) h Visible on Aerial Image Vegetated Concave Surf	to ative equired: chec	k all that apply) K all that apply K all that apply) K all that apply K	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9)	ganic Roots (C3)	Secondar Secondar Su Dr Dr Cr Sa St St St St	Present? Yes No Vever Inil Inil Inil Inil Inil Inil Inil y Indicators (minimum of two required) Inface Soil Cracks (86) Inil ainage Patterns (B10) y-Season Water Table (C2) (~July 15 or later) ayfish Burrows (C8) Ituration Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) Formorphic Position (D2)
Restrictive Lay Type: Depth (incl Remarks:	rer (If observed): hes): ock similar black hot Prese ogy Indicators: ors (minimum of one is r vater (A1) ar Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) n Visible on Aerial Image Vegetated Concave Surf ions:	to ative equired: check my (B7) ace (B8)	k all that apply) K all that apply K all that apply) K all that apply K	ock (1-2 ck - 0 ck -	ganic Roots (C3)	Secondar Secondar Su Dr Dr Cr Sa St St St St	Present? Yes No Vevev Inil Inil No Inil Inil Inil Inil y Indicators (minimum of two required) Inface Soil Cracks (86) Inil ainage Patterns (B10) y-Season Water Table (C2) (~July 15 or later) ayfish Burrows (C8) Inturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) Somorphic Position (D2)
Restrictive Lay Type: Depth (incl Remarks:	rer (if observed): hes): ock similar ock similar ock similar ock similar ock similar ogy Indicators: ors (minimum of one is r vater (A1) ar Table (A2) n (A3) or Crust (B4) sits (B3) or Crust (B4) sits (B5) n Visible on Aerial Image Vegetated Concave Surf ions: Present? Yes	to ative equired: chec	k all that apply) K all that apply K all that apply) K all that apply K	ock (1-2 ck - 0 ck -	g Roots (C3) Soils (C6)	Secondar Secondar Su Dr Dr Cr Sa St St St St	Present? Yes No Vevev Inil Inil No Inil Inil Inil Inil y Indicators (minimum of two required) Inface Soil Cracks (86) Inil ainage Patterns (B10) y-Season Water Table (C2) (~July 15 or later) ayfish Burrows (C8) Inturation Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) Somorphic Position (D2)
Restrictive Lay Type: Depth (inc) Remarks: HYDROLOG Wetland Hydrol Primary Indicator Surface V High Water Saturation Water Ma Sediment Drift Depco Algal Mat Iron Depo Inundation Sparsely V Field Observat Surface Water I	rer (if observed): hes): ock similar ock similar ock similar ock similar ock similar ogy Indicators: ors (minimum of one is r vater (A1) ar Table (A2) n (A3) or Crust (B4) sits (B3) or Crust (B4) sits (B5) n Visible on Aerial Image Vegetated Concave Surf ions: Present? Yes	to at in equired: chec my (B7) ace (B8)	k all that apply) K all that apply K all that apply) K all that apply K	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) h Reduction in Tilled S Surface (C7) Vell Data (D9) ain in Remarks) ches): <u>2</u> ! ches): <u>2</u> !	g Roots (C3) Soils (C6)	Secondar Secondar Su Dr Dr Cr Sa St St St St	Present? Yes No Wavew I And Present y Indicators (minimum of two required) Inface Soil Cracks (B6) ainage Pattems (B10) y-Season Water Table (C2) (-July 15 or later) ayfish Burrows (C8) thuration Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) soomorphic Position (D2) NC-Neutral Test (D5)
Restrictive Lay Type: Depth (inc) Remarks: HYDROLOG Wetland Hydrol Primary Indicato Surface W High Wate Saturation Water Ma Sediment Drift Depc Algal Mat Iron Depo Inundation Sparsely Field Observat Surface Water Table Pre Saturation Pres (includes capilla	rer (If observed): hes): ock similar both black hot preserved whot preserved ogy Indicators: ors (minimum of one is reveal vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) n Visible on Aerial Image Vegetated Concave Surf ions: Present? Yes any fringe)	to ative active active (B7) ace (B8) X No X No	k all that apply) k all that apply) Vater-Stair Aquatic Fau True Aquatic Hydrogen S Oxidized RI Presence o Recent Iron Thin Muck Gauge or V Other (Expla Depth (inc Depth (inc	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9) ain in Remarks) ches): <u>2</u> ches): <u>2</u>	g Roots (C3) Soils (C6)	Secondar Secondar Dr Dr Cr Sa St X FA	Present? Yes No Wavew I And Present y Indicators (minimum of two required) Inface Soil Cracks (B6) ainage Pattems (B10) y-Season Water Table (C2) (-July 15 or later) ayfish Burrows (C8) thuration Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) soomorphic Position (D2) AC-Neutral Test (D5)
Restrictive Lay Type: Depth (inc) Remarks: HYDROLOG Wetland Hydrol Primary Indicato Surface W High Wate Saturation Water Ma Sediment Drift Depc Algal Mat Iron Depo Inundation Sparsely Field Observat Surface Water Table Pre Saturation Pres (includes capilla	rer (If observed): hes): OCK Similar OCK Similar ock Similar ogy Indicators: ors (minimum of one is r vater (A1) er Table (A2) n (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) n Visible on Aerial Image vegetated Concave Surf ions: Present? Yes ent? Yes	to ative active active (B7) ace (B8) X No X No	k all that apply) k all that apply) Vater-Stair Aquatic Fau True Aquatic Hydrogen S Oxidized RI Presence o Recent Iron Thin Muck Gauge or V Other (Expla Depth (inc Depth (inc	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9) ain in Remarks) ches): <u>2</u> ches): <u>2</u>	g Roots (C3) Soils (C6)	Secondar Secondar Dr Dr Cr Sa St X FA	Present? Yes No Wavew I And Present y Indicators (minimum of two required) Inface Soil Cracks (B6) ainage Pattems (B10) y-Season Water Table (C2) (-July 15 or later) ayfish Burrows (C8) thuration Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) soomorphic Position (D2) AC-Neutral Test (D5)
Restrictive Lay Type: Depth (inc) Remarks: HYDROLOG Wetland Hydrol Primary Indicato Surface V High Water Saturation Water Ma Sediment Drift Depc Algal Mat Iron Depo Inundation Sparsely Field Observat Surface Water I Water Table Pre Saturation Press (includes capilla Describe Recor	rer (If observed): hes): ock similar black hot Prese res (minimum of one is r yater (A1) ar Table (A2) h (A3) rks (B1) Deposits (B2) usits (B3) or Crust (B4) sits (B5) n Visible on Aerial Image Vegetated Concave Surf lons: Present? Yes ent? Yes ent? Yes	$\frac{t}{X} = \frac{1}{No}$	k all that apply) K all that apply K	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9) ain in Remarks) ches): <u>2</u> ches): <u>2</u> revious inspections),	g Roots (C3) Soils (C6)	etland Hydrology	Present? Yes No www.www.www.www.www.www.www.www.www.ww
Restrictive Lay Type: Depth (inc) Remarks: HYDROLOG Wetland Hydrol Primary Indicato Surface V High Water Saturation Water Ma Sediment Drift Depc Algal Mat Iron Depo Inundation Sparsely Field Observat Surface Water I Water Table Pre Saturation Press (includes capilla Describe Recor	rer (If observed): hes): OCK Similar ock Similar ock Similar ock Similar ogy Indicators: ors (minimum of one is r vater (A1) ar Table (A2) n (A3) rks (B1) Deposits (B2) usits (B3) or Crust (B4) sits (B5) n Visible on Aerial Image Vegetated Concave Surf Ions: Present? Yes sent? Yes ent? Yes	$\frac{t}{X} = \frac{1}{No}$	k all that apply) K all that apply K	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9) ain in Remarks) ches): <u>2</u> ches): <u>2</u> revious inspections),	g Roots (C3) Soils (C6)	etland Hydrology	Present? Yes No Wavew I And Present y Indicators (minimum of two required) Inface Soil Cracks (B6) ainage Pattems (B10) y-Season Water Table (C2) (-July 15 or later) ayfish Burrows (C8) thuration Visible on Aerial Imagery (C9) unted or Stressed Plants (D1) soomorphic Position (D2) AC-Neutral Test (D5)
Restrictive Lay Type: Depth (inc) Remarks: HYDROLOG Wetland Hydrol Primary Indicato Surface V High Water Saturation Water Ma Sediment Drift Depc Algal Mat Iron Depo Inundation Sparsely Field Observat Surface Water I Water Table Pre Saturation Press (includes capilla Describe Recor	rer (If observed): hes): ock similar both black hot preserved whot preserved ogy Indicators: ors (minimum of one is reveal vater (A1) er Table (A2) h (A3) rks (B1) Deposits (B2) sits (B3) or Crust (B4) sits (B5) h Visible on Aerial Image Vegetated Concave Surf ions: Present? Yes any fringe)	$\frac{t}{X} = \frac{1}{No}$	k all that apply) K all that apply K	ned Leaves (B9) una (B13) ic Plants (B14) Sulfide Odor (C1) hizospheres on Living of Reduced Iron (C4) n Reduction in Tilled S Surface (C7) Vell Data (D9) ain in Remarks) ches): <u>2</u> ches): <u>2</u> revious inspections),	g Roots (C3) Soils (C6)	etland Hydrology	Present? Yes No www.www.www.www.www.www.www.www.www.ww

Thompson & Associates Wetland Services

Project/Site: South Share Part Beach Re-location Applicant/Owner: <u>Robert Wright</u> , <u>smith Grau</u> Investigator(s): <u>TAWS - Alice Thompson</u> <u>Carissis Poich</u> Landform: Summit Shoulder Backstope Footslope Urban Modified Other Soil Map Unit Name: <u>Unropped</u> Are climatic/hydrologic conditions on the site typical for this time of year? Are Vegetation, Soil, or Hydrology significantly of Are Vegetation, Soil, or Hydrology significantly of Are Vegetation, Soil, or Hydrology problematic? SUMMARY OF FINDINGS - Attach site map showing sampling problematic ? Hydrophytic Vegetation Present? Yes No Hydrology Present? Yes No Wetland Hydrology Present? Yes No	P Section 10 Yes X listurbed? www.hvml pint locations	_Township ocal relief: (No dist-16	State: WI Sampling Point: Sampling Point: Ip N, Range 2.2 East West concave, convex, linear, other: WWI classification: Sampling Point: WWI classification: WWI classification: Sampling Point: Reason: Previous 90 day Precipitation WEPNORMAL DRY Are "Normal Circumstances" present? Yes No Y Yes No Y
Investigator(s): TAWS - Alice Thompson Carlos G Price S Landform: Summit Shoulder Backstope Footstope Toestope Urban Modified Other	Yes L Yes L Isturbed? www.ww.l pint locations	No	Ip N, Range 2.7 East West concave convex, linear, other:
Investigator(s): TAWS - Alice Thompson Carlos G Price S Landform: Summit Shoulder Backstope Footstope Toestope Urban Modified Other	Yes L Yes L Isturbed? www.ww.l pint locations	No	www.convex, linear, other: www.classification: WWI classification: Reason: Previous 90 day Precipitation We PNORMAL DRY Are "Normal Circumstances" present? Yes No WMC-
Landform: Summit Shoulder Backslope Footslope Tooslope Urban Modified Other Soil Map Unit Name:	Yes X listurbed? mrtVml pint locations	No	www.convex, linear, other: www.classification: WWI classification: Reason: Previous 90 day Precipitation We PNORMAL DRY Are "Normal Circumstances" present? Yes No WMC-
Soil Map Unit Name:	Yes X listurbed? MHVMI pint locations	No	WWI classification:
Are Vegetation, Soil, or Hydrologysignificantly of Are Vegetation, Soil, or Hydrology problematic? SUMMARY OF FINDINGS - Attach site map showing sampling problematic? Hydrophytic Vegetation Present? YesNo Hydric Soil Present? YesNo	isturbed? wrAVMI pint locations	distub	Are "Normal Circumstances" present? YesNo X
Are Vegetation Soil, or Hydrology problematic? SUMMARY OF FINDINGS - Attach site map showing sampling p Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes No	pint locations		mue and
SUMMARY OF FINDINGS - Attach site map showing sampling provide the second strength of the second strength	bint locations		
Hydrophytic Vegetation Present? Yes No Hydric Soil Present? Yes Yes	ls	, transect	s, important reatures, etc.
Hydric Soil Present? Yes <u>X</u> No			4
	a :		ed Area within Wetland A
Wetland Hydrology Present? Yes / No		Wetland? etland Type: M	Yes No arsh Presh Wel Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine
			Farmed Wetland
Water trapped adjament rip rap -	the	el we	etland basins separatel by melk
VEGETATION - Use scientific names of plants.			
Absolute %	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: equiv to 30' radius) Cover	Species?	Status	Number of Dominant Species That
1. SALIX X tragilis 30	M	Fac	Are OBL, FACW, or FAC:
2			Total Number of Dominant Species
3			Across All Strata:
4			Percent of Dominant Species That Are 100 (A/B)
5 20	- Total Cover	105/	OBL, FACW, or FAC:
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)	= Total Cover	10/6	Prevalence Index worksheet:
1. SAW INTERIOR 10	M	FACW	Total % Cover of: Multiply by:
			OBL species x1 =
2	_/	·	
3			FACW species x 2 =
4			FAC species x 3 =
5			FACU species x 4 =
6	<u> </u>		UPL species x 5 =
7			Column Totals: (A) (B)
	= Total Cover	5/2	Prevalence Index = B/A =
Herb Stratum (Plot size: equiv to 5' radius)			Hydrophytic Vegetation Indicators:
1. Inis yersi color 20		061	Rapid test for hydrophytic vegetation
2. Lythrown salicaria 10		obl	Dominance Test is >50%
3. Phicagnites australis 30	- <u>M</u> '	FACW	Prevalence Index is ≤3.01
4. Typhe SP. 50	- <u>M</u>	obl	Morphological Adaptations ¹ (Provide supporting data in Remarks)
5. filimethous algue in surface			Problematic Hydrophytic Vegetation ¹ (Explain)
6			Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7			Definitions of Vegetation Strata:
8			Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast
9,			height (DBH), regardless of height.
10	= Total Cover	55/22	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 (1m) tall.
Woody Vine Stratum (Plot size: equiv to 30' radius)		1 Loan	Herb - All herbaceous (non-woody) plants, regardless of size, and
1			woody plants less than 3.28 ft tall.
2			Woody vines - All woody vines greater than 3.28 ft in height.
3	= Total Cover		Is Hydrophytic Vegetation Present? Yes X No
Remarks:			

Depth Matrix (inches) Color (moist) %	needed to document the indicator or confirm the Redox Features	e absence of indicators.)	
(inches) Color (moist) % 0-5" 1012 2 11 10	Redox Features		
(inches) Color (moist) % 0-5" 1018 2(1) 10			
	Color (moist) % Type	1 Loc ² Texture	Remarks
	o (continues)	Vock i annel	contral w/ b/m
compacted vock 5+		The sheet	201(1100 1 01
5.			
<u> </u>			
pe: C=Concentration, D=Depletion, RM=R	educed Matrix, MS=Masked Sand Grains		Pore Lining, M=Matrix.
dric Soll Indicators: (For LRR M)	Sandy Cloved Matrix (S4)	Indicators for Problematic	
Histosol (A1)	Sandy Gleyed Matrix (S4)	Coast Prairie Redox	
Histic Epipedon (A2)	Sandy Redox (S5)		
Black Histic (A3)	Stripped Matrix (S6)	Very Shallow Dark S	· · /
Hydrogen Sulfide (A4)	Dark Surface (S7)	Other (Explain in Rei	narks)
Stratified Layers (A5)	Loamy Mucky Mineral (F1)	/	3.3
2 cm Muck (A10)	Loamy Gleyed Matrix (F2)	Organic From	LOATING
Depleted Below Dark Surface (A11)	Depleted Matrix (F3)	~·	0
Thick Dark Surface (A12)	Redox Dark Surface (F6)	See. 1	marking
Sandy Mucky Mineral (S1)	Depleted Dark Surface (F7)	10000	0
5 cm Mucky Peat or Peat (S3)	Redox Depressions (F8)		
dicators of hydrophytic vegetation and wet	land hydrology must be present, unless disturbed o	r problematic, * Test Indicator	
strictive Layer (if observed):			
Type:			
		la Undria Call Deseardo	Yes Y No
Depth (inches):		Is Hydric Soil Present?	Yes X No
	y in powel averas -	not on rocks	on high ground
YDROLOGY			
etland Hydrology Indicators: imary Indicators (minimum of one is require	d: check all that apply)	Secondary Indicators	(minimum of two required)
	Water-Stained Leaves (B9)	Surface Soil (
W-mile here and here			
Surface Water (A1)	Aduatic Fauna (B13)		
Surface Water (A1) High Water Table (A2)	Aquatic Fauna (B13)		ems (B10)
Surface Water (A1) High Water Table (A2) Saturation (A3)	True Aquatic Plants (B14)	Dry-Season V	erns (B10) Vater Table (C2) (~July 15 or later)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1)	Dry-Season V Crayfish Burro	erns (B10) √ater Table (C2) (~July 15 or later) ows (C8)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	 True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R 	Crayfish Burn Crayfish Burn Roots (C3) Saturation Vis	erns (B10) Vater Table (C2) <i>(-July 15 or later)</i> jwws (C8) ible on Aerial Imagery (C9)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1)	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1)	Crayfish Burn Crayfish Burn Roots (C3) Saturation Vis	erns (B10) Vater Table (C2) (-July 15 or later) ows (C8)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2)	 True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R 	Crayfish Burra Crayfish Burra Roots (C3) Saturation Vis Stunted or Stu	erns (B10) Vater Table (C2) <i>(-July 15 or later</i>) ows (C8) ible on Aerial Imagery (C9) essed Plants (D1)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3)	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4)	Crayfish Burra Crayfish Burra Roots (C3) Saturation Vis Stunted or Stu	erns (B10) Vater Table (C2) <i>(-July 15 or later</i>) ows (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2)
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)	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7)	Roots (C3) Crayfish Burra Saturation Vis Stunted or Str ils (C6) Geomorphic I	erns (B10) Vater Table (C2) <i>(-July 15 or later</i> ows (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2)
Surface Water (A1) High Water Table (A2) Saturation (A3) Water Marks (B1) Sediment Deposits (B2) Drift Deposits (B3) Algal Mat or Crust (B4)	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9)	Roots (C3) Crayfish Burra Saturation Vis Stunted or Str ils (C6) Geomorphic I	erns (B10) Vater Table (C2) <i>(-July 15 or later</i> ows (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2)
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 (E State Observations:	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living F Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks)	Roots (C3) Crayfish Burra Saturation Vis Stunted or Str ils (C6) Geomorphic I	erns (B10) Vater Table (C2) <i>(-July 15 or later</i> ows (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2)
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 (E eld Observations:	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9)	Roots (C3) Crayfish Burra Saturation Vis Stunted or Str ils (C6) Geomorphic I	erns (B10) Vater Table (C2) <i>(-July 15 or later,</i> ows (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2)
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 (E eld Observations: Inface Water Present? Yes	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living F Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks)	Roots (C3) Crayfish Burra Saturation Vis Stunted or Str ils (C6) Geomorphic I	erns (B10) Vater Table (C2) <i>(-July 15 or later</i>) ows (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2)
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 (E eld Observations: Inface Water Present? Yes	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living F Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks)	Roots (C3) Crayfish Burra Saturation Vis Stunted or Str ils (C6) Geomorphic I	erns (B10) Vater Table (C2) <i>(-July 15 or later</i>) ows (C8) ible on Aerial Imagery (C9) essed Plants (D1) Position (D2)
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 (E eld Observations: urface Water Present? Yes ater Table Present? Yes aturation Present? Yes Auturation Present? Yes Au	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches): No Depth (inches):	Roots (C3) Roots (C3) Dry-Season V Crayfish Burn Saturation Vis Stunted or Stu Geomorphic I FAC-Neutral	ems (B10) Vater Table (C2) (-July 15 or later ows (C8) lible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)
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 (E eld Observations: urface Water Present? Yes ater Table Present? Yes aturation Present? Yes Auturation Present? Yes Au	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living F Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks)	Roots (C3) Roots (C3) Dry-Season V Crayfish Burn Saturation Vis Stunted or Stu Geomorphic I FAC-Neutral	ems (B10) Vater Table (C2) (-July 15 or later ows (C8) lible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)
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 (E eld Observations: urface Water Present? Yes aturation Present? Yes aturation Present? Yes aturation Present? Yes actuation Present? Yes Saturation Present? Yes actuation Present? Yes Saturation Present? Yes Satura	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches): No Depth (inches):	Roots (C3) Roots (C3) Dry-Season V Crayfish Burn Saturation Vis Stunted or Stu Geomorphic I FAC-Neutral	ems (B10) Vater Table (C2) (-July 15 or later ows (C8) lible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)
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 (B eld Observations: Inface Water Present? Yes ater Table Present? Yes turation Present? Yes Stater Table Present? Yes Algal Mater State St	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches): No Depth (inches):	Roots (C3) Roots (C3) Dry-Season V Crayfish Burn Saturation Vis Stunted or Stu Geomorphic I FAC-Neutral	ems (B10) Vater Table (C2) (-July 15 or later ows (C8) lible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)
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 (E Sold Observations: rface Water Present? Yes ater Table Present? Yes turation Present? Yes cludes capillary fringe) scribe Recorded Data (stream gauge, mon	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches): No Depth (inches):	Roots (C3) Roots (C3) Dry-Season V Crayfish Burn Saturation Vis Stunted or Stu Geomorphic I FAC-Neutral	ems (B10) Vater Table (C2) (-July 15 or later ows (C8) lible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)
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 (E Id Observations: face Water Present? Yes ter Table Present? Yes turation Present? Yes Suddes capillary fringe) scribe Recorded Data (stream gauge, mon	True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Living R Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Soi Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks) No Depth (inches): No Depth (inches): No Depth (inches): No Depth (inches):	Roots (C3) Roots (C3) Dry-Season V Crayfish Burn Saturation Vis Stunted or Stu Geomorphic I FAC-Neutral	ems (B10) Vater Table (C2) (-July 15 or later ows (C8) lible on Aerial Imagery (C9) essed Plants (D1) Position (D2) Fest (D5)

WETLAND DETERMINATION DATA FORM - Midwest Region

cotion	City/County:	Milwaul	200/Milwaulee Sampling Date: 10/23 12017
			State: WI Sampling Point: 1
			/pN, Range22 (East West
Other	L	ocal relief: o	concave, convex, linear, other:
			WWI classification:
time of year?	Yes X	No	Reason: Previous 90 day Precipitation WET(NORMAL)DRY
significantly of problematic?	disturbed		Are "Normal Circumstances" present? Yes X No
	-1	s, transect	s, important features, etc.
No X	ls	the Sample	ed Area within
No X			YesNo
NO T			arsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine Farmed Wetland
			F
Absolute %	Dominant	Indicator	Dominance Test worksheet:
	Species?	Status	Number of Dominant Species That
0	<u> </u>	Up!	Are OBL, FACW, or FAC:(A)
	,		Total Number of Dominant Species 5 (B)
		*******	Percent of Dominant Species That Are 20 (A/B)
- 10	= Total Cover	51	OBL, FACW, OF FAC. (AVB)
		1/2	Prevalence Index worksheet:
			Total % Cover of: Multiply by:
			OBL species x 1 =
			FACW species x 2 =
			FAC species x 3 =
			FACU species x 4 =
			UPL species x 5 =
			Column Totals: (A) (B)
	= Total Cover		Prevalence Index = B/A =
-		F 11	Hydrophytic Vegetation Indicators:
30	M		Rapid test for hydrophytic vegetation
30	M	FACU	Dominance Test is >50%
20	M	Facu	Prevalence Index is ≤3.01
20	M	Fac	Morphological Adaptations ¹ (Provide supporting data in Remarks)
10			Problematic Hydrophytic Vegetation ¹ (Explain)
			¹ Indicators of hydric soil and wetland hydrology must be present, unless
		1460	disturbed or problematic.
			Definitions of Vegetation Strata:
			Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
- 120	= Total Cover	1001	Sapling/shrub - Woody plants less than 3 in. DBH and greater than
	1000100961	124	3.28 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and
			woody plants less than 3.28 ft tall.
			Woody vines - All woody vines greater than 3.28 ft in height.
	Absolute % Cover 10 10 10 10 10 10 10 10 10 10 10 10 10	An Group Section LO Other Image: Section LO Significantly disturbed Significantly disturbed Significantly disturbed problematic? Image: Section Significantly disturbed No X Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Image: Section Im	An Group And Section Io Township other Local relief. Local relief. significantly disturbed historic problematic? Fill - Luch g sampling point locations, transect No X Is the Sample IO M Is the Sample IO M Is the Sample IO M Is the Sample IO Total Cover 5/2. IO Total Cover FacU IS O M FacU IS O M FacU IO

Thompson & Associates Wetland Services

Sampling Point: 9

Profile Descrip	tion: (Describe to the	e depth needed	to document the i	ndicator or con	firm the a	bsence of	indicators.)			-k
Depth	Matrix		Redox Featu	es						
(inches)	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture		Remarks	
0- 7"	51042 413	50					CONVSC	Sandy le	am	
	Lista cla	sa					C / ac			
	(101253	3-			_					
7"	compreta	rek-								
'Type: C=Cond	entration, D=Depletion	, RM=Reduced M	Matrix, MS=Masked	Sand Grains			2Loca	ation: PL=Pore L	ining, M=Matrix	
Hydric Soil Ind	licators: (For LRR M)						Indicators for P	roblematic Hydri	c Soils³:	
Histosol (-		d Matrix (S4)				rie Redox (A16)		
	pedon (A2)	1	Sandy Redox					anese Masses (i	,	
Black His		-	Stripped Mat					ow Dark Surface	. ,	
	Sulfide (A4) Layers (A5)	-	Dark Surface				Other (Exp	ain in Remarks)	
2 cm Muc		<u> </u>		y Mineral (F1) d Matrix (F2)						
	Below Dark Surface (A	(11)	Depleted Ma							
	k Surface (A12)	-	Redox Dark							
Sandy Mu	icky Mineral (S1)		Depleted Da	rk Surface (F7)						
5 cm Muc	ky Peat or Peat (S3)	-	Redox Depre	essions (F8)						
3Indicators of h	ydrophytic vegetation	and wetland hydr	ology must be pres	ent, unless dist	urbed or p	oblematic.	* Test Indicator			
Restrictive Lay	ver (If observed):									
Туре:										
Depth (inc	hes):						Is Hydric Soil	Present?	Yes	No X
Remarks:										
	rock gr	well at	7 30							
	C11 C		1	5		_	1	1		
k	Fill From	MMSD	2418 +	unnel p	rich	P1/	heed on	laketon	1	
HYDROLOG										
Wetland Hydrol	and the second se						C			
-	ors (minimum of one is	required: check	all that apply)				Secondary	Indicators (mini	mum of two rea	uired)
	Vater (A1)			ned Leaves (B9))		and the state of t	face Soil Cracks		
High Wate	er Table (A2)		Aquatic Fa					inage Patterns (• •	
Saturation	1 (A3)		True Aquat	ic Plants (B14)			Dry	-Season Water	Table (C2) (~July	15 or later)
Water Ma	. ,			ulfide Odor (C1	,		Cra	yfish Burrows (C	(8)	
	Deposits (B2)			nizospheres on	-	ts (C3)		uration Visible o		y (C9)
Drift Depo	. ,			f Reduced Iron		200		nted or Stressed		
Iron Depo	or Crust (B4)			Reduction in T Surface (C7)	ilied Solis ((06)		omorphic Positio C-Neutral Test (E		
	n Visible on Aerial Ima	aery (B7)		Vell Data (D9)				S-Neduzi Test (L	55)	0
	Vegetated Concave Su			ain in Remarks)						
Field Observat			Death (in	· ·						
Surface Water I Water Table Pr			Depth (ind Depth (ind			-				
Saturation Pres			Depth (in			Is Wet	and Hydrology	Present?	Yes	NoX
(includes capilla			/ Coput (in				and nyarology .			
Describe Recor	ded Data (stream gaug	ge, monitoring we	ell, aerial photos, p	evious inspecti	ons), if ava	ilable:				
Remarks:										

Thompson & Associates Wetland Services

WETLA	ND DETERM	INATION DAT	TA FORM -	Midwest Region
Project/Site: South Space Park Reach Re-1	ration	City/County	Milwaul	Lee/Milwauleee Sampling Date: 10/23 12017
Applicant/Owner: Robert Wright, Smith				State: WI Sampling Point: 0
nvestigator(s): TAWS - Alice Thompson, Cas' 1550. A	nich	Section 10	Township	Le N. Range 2.2 (East) West
andform: Summit Shoulder Backslope Footslope Toeslope Urban Modified				
Soil Map Unit Name: unmapped				WWI classification:
Are climatic/hydrologic conditions on the site typical for this t	ime of year?	Yes X	No	Reason: Previous 90 day Precipitation WET NORMAL DRY
Are Vegetation Soil <u>χ</u> or Hydrology	significantly	disturbed?)	Are "Normal Circumstances" present? Yes X No
Are Vegetation, Soil, or Hydrology Are Vegetation, Soil, or Hydrology SUMMARY OF FINDINGS - Attach site map showing				ts, important features, etc.
Hydrophytic Vegetation Present? Yes				
Hydric Soil Present? Yes			the Sample Wetland?	ed Area within Yes No X
Wetland Hydrology Present? YesN		w	etland Type: N	arsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine
				Farmed Wetland
" Remarks: Normiend of park structu	ive as ea	(+110	1003 <u></u> C	(2.)
slight low spot on	slope			
VEGETATION - Use scientific names of plants.				
	Absolute %	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: equiv to 30' radius)	Cover	Species?	Status	Number of Dominant Species That
1. Juglens nigra	30	M	Frev	Are OBL, FACW, or FAC:
2	-			Total Number of Dominant Species
3				Across All Strata:
4		· · · · · · · · · · · · · · · · · · ·		Percent of Dominant Species That Are
5.				OBL, FACW, or FAC:
	30	= Total Cover	15/	
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)			10	Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x 1 =
3				FACW species x 2 =
4.				FAC species x 3 =
5.				FACU species x 4 =
6.				UPL species x 5 =
7.				Column Totals: (A) (B)
	-	= Total Cover		Prevalence Index = B/A =
Herb Stratum (Plot size: equiv to 5' radius)				Hydrophytic Vegetation Indicators:
1. Solidago canadensis	30	~	Frev	Rapid test for hydrophytic vegetation
2. Calium perrene	50	h	FreV	Dominance Test is >50%
3. Restoca arundinacae	50	M	Frev	Prevalence Index is ≤3.01
4. Glecoma hederaca	30	M	FacU	Morphological Adaptations ¹ (Provide supporting data in Remarks)
5. Arctium minus	20		FACU	Problematic Hydrophytic Vegetation ¹ (Explain)
6. Xanthonium strinarium	20		Fac	Indicators of hydric soil and wetland hydrology must be present, unless
7				disturbed or problematic.
8				Definitions of Vegetation Strata:
9				Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
10,	200	= Total Cover	100/40	Sapling/shrub - Woody plants less than 3 in. DBH and greater than
Woody Vine Stratum (Plot size: equiv to 30' radius)			1.0	3.28 (1m) tall, Herb - All herbaceous (non-woody) plants, regardless of size, and
1				woody plants less than 3.28 ft tall.
3				Woody vines - All woody vines greater than 3.28 ft in height.
3		= Totał Cover		Is Hydrophytic Vegetation Present? Yes No X
Remarks:				

Sampling Point: _/0

Profile Description: (Describe t	to the depth needed	to document the i	ndicator or cor	nfirm the al	osence of	indicators.)	
Depth Ma	trix	Redox Featu	res				
(inches) Color (moist) %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8 10YZ3	2 100					SANDY long	
PT II			-				
8 rock							
					-		
	DM D dood	Mattin Montheater				2 enetion DL-D	ave I foto - Bill-Billabets
¹ Type: C=Concentration, D=Dep Hydric Soil Indicators: (For LR		Matrix, MS=Masked	Sand Grains			Indicators for Problematic	ore Lining, M=Matrix.
Histosol (A1)	r(wi)	Sandy Gleve	ed Matrix (S4)			Coast Prairie Redox (
Histic Epipedon (A2)		Sandy Redo				Iron-Manganese Mass	
Black Histic (A3)		Stripped Mat					
Hydrogen Sulfide (A4)		Dark Surface				Other (Explain in Rem	arks)
Stratified Layers (A5)			y Mineral (F1)				
2 cm Muck (A10)		Loamy Gleye	ed Matrix (F2)				
Depleted Below Dark Surfa	ice (A11)	Depleted Ma					
Thick Dark Surface (A12)			Surface (F6)				
Sandy Mucky Mineral (S1)			rk Surface (F7)				
5 cm Mucky Peat or Peat (S3)	Redox Depre	essions (F8)				
³ Indicators of hydrophytic vegeta	ation and wetland hy	drology must be pres	sent, unless dis	turbed or pr	oblematic	* Test Indicator	
Restrictive Layer (if observed):	:						
Туре:							V
Depth (inches):						Is Hydric Soil Present?	Yes No X
Remarks: historic	fill in	> PAVK	from	du	, tvr	wel Project i	
					1	1	
13212	is them	historic	11.2				
	As K. als.	pr w j cr i ac					
HYDROLOGY							
Wetland Hydrology Indicators: Primary Indicators (minimum of c	and in manirad: char	k all that apply				Secondary Indicators	(minimum of two required)
Surface Water (A1)	ne is required, oneo		ned Leaves (B9))		Surface Soil C	
High Water Table (A2)		Aquatic Fa		/		Drainage Patte	
Saturation (A3)			tic Plants (B14)				ater Table (C2) (~July 15 or later)
Water Marks (B1)			Sulfide Odor (C	1)		Crayfish Burro	ws (CB)
Sediment Deposits (B2)			hizospheres on		ts (C3)	Saturation Visi	ble on Aerial Imagery (C9)
Drift Deposits (B3)		Presence of	of Reduced Iron	(C4)			essed Plants (D1)
Algal Mat or Crust (B4)		Recent Iron	n Reduction in 1	filled Soils (C6)	Geomorphic P	
Iron Deposits (B5)			Surface (C7)			FAC-Neutral T	est (D5)
Inundation Visible on Aeria	,		Veli Data (D9)				
Sparsely Vegetated Conca	ve Surface (B8)	Other (Expl	ain in Remarks)				
Field Observations:					1		
Surface Water Present?	Yes No	Depth (in	ches):				
Water Table Present?	Yes No	Depth (in	ches):				X
Saturation Present?	Yes No	Depth (in	ches):		Is We	tland Hydrology Present?	Yes No
(includes capillary fringe)	aguag monitorine -	voll garial shotas -	revioue inconcet	ions) if our	ilable:		
Describe Recorded Data (stream	r gauge, monitoring (ven, aenai priotos, p	evious inspect	ions), ii ava			
Remarks:							
Thompson & Associates Wetland	d Services					Based on USACE Midua	est Supplement Datasheet, v2.0

WETLAND DETERMINATION DATA FORM - Midwest Region

oject/Site: South Shore Park Beach Re-		City/County:	Milwauk	State: WI Sampling Date: 10/23 /2017
pplicant/Owner: Robert Wright, Sn	nith Groop	10	Taurahla	
vestigator(s): TAWS - Alice Thompson Caciss				
dform: Summit Shoulder Backslope Footslope Toeslope Urban Modifie	Other		ocal relier.	
il Map Unit Name:	time of year?	Vac V	No	WWI classification:
e Vegetation X, Soil, or Hydrology		sturbed?		Are "Normal Circumstances" present? Yes X No
e Vegetation, Soil, or Hydrology			4	- Income dan da Randon en esta
JMMARY OF FINDINGS - Attach site map showin	ng sampling por	int locations	s, transect	s, important teatures, etc.
ydrophytic Vegetation Present? Yes	No X	ls	the Sample	ed Area within
ydric Soil Present? Yes			Wetland?	Yes No
Vetland Hydrology Present? Yes	No 4			arsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine Farmed Wetland
Remarks: mowel Inwo				
EGETATION - Use scientific names of plants.				Dominance Test worksheet:
ree Stratum (Plot size: equiv to 30' radius)	Absolute % Cover	Dominant Species?	Indicator Status	
		- provide t		Are OBL, FACW, or FAC:
				Total Number of Dominant Species(B)
		Total Cover		Percent of Dominant Species That Are OBL, FACW, or FAC:
apling/Shrub Stratum (Plot size: equiv to 15' radius)	2			Prevalence Index worksheet:
				Total % Cover of: Multiply by:
<u>2 h - </u>				
				OBL species x1 =
				FACW species x 2 =
				FAC species x 3 =
				FACU species x 4 =
				UPL species x 5 =
				Column Totals: (A) (B)
		= Total Cover		Prevalence Index = B/A =
erb Stratum (Plot size: equiv to 5' radius)	4		-	Hydrophytic Vegetation Indicators:
Pour pratense	60	M	the.	Rapid test for hydrophytic vegetation
Trifolium hypridum	30	M	FACY	Dominance Test is >50%
Polygonum aviculare -	20		FAL	Prevalence Index is ≤3.01
Townxacum officinale		m	FACU	Morphological Adaptations ¹ (Provide supporting data in Remarks)
				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. (7.6cm) or more in diameter at breast
				height (DBH), regardless of height.
D				Capling(shalp) Mandy plants loss than 3 in DDU and areater the
loody Vine Stratum (Plot size: equiv to 30' radius)	19'5	= Total Cover	7.0/28	Sapling/shrub - Woody plants less than 3 in. DBH and greater the 3.28 (1m) tall.
				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
				Woody vines - All woody vines greater than 3.28 ft in height,
· · · · · · · · · · · · · · · · · · ·		= Total Cover		Is Hydrophytic Vegetation Present? Yes No X

Thompson & Associates Wetland Services

Based on USACE Midwest Supplement Datasheet, v2.0

1

Sampling	Point:	- 11	

Profile Descrip	otion: (Describe to th	e depth needed	to document the i	indicator or con	nfirm the al	osence of	indicators.)	
Depth	Matrix		Redox Featu					
(inches)	Color (moist)		Color (moist)	%	Type ¹	Loc ^z	Texture	Remarks
0-10	101232	00					SANDY Joan	
10-13	1070.312	501					Sandy charl	1= 9409
1- 10	1-15-15	<u> </u>					- shirt (ing	1- (1-1
13_"	_ compact	ed soil						
							· · · · · · · · · · · · · · · · · · ·	
	centration, D=Depletio	RM=Reduced	Matrix MS=Maske	d Sand Grains			21 ocation: PI	Pore Lining, M=Matrix.
	licators: (For LRR M,		MILLIN, MO-MILLING				Indicators for Problemat	
Histosol (, ,		Sandy Gleve	ed Matrix (S4)			Coast Prairie Redo	
	pedon (A2)	-	Sandy Redo				Iron-Manganese Ma	
Black His			Stripped Ma				Very Shallow Dark	
	Sulfide (A4)	-	Dark Surface				Other (Explain in Re	. ,
	Layers (A5)			ky Mineral (F1)				
2 cm Muc		-		ed Matrix (F2)				
Depleted	Below Dark Surface (A11) -	Depleted Ma					
Thick Dar	k Surface (A12)	100	Redox Dark	Surface (F6)				
Sandy Mu	ucky Mineral (S1)		Depleted Da	ark Surface (F7)				
5 cm Muc	ky Peat or Peat (S3)		Redox Depr	essions (F8)				
³ Indicators of h	ydrophytic vegetation	and wetland hvd	roloav must be ore	sent, unless disi	turbed or pr	oblematic	* Test Indicator	
	ver (If observed):							
Type:	fer (ir observou).							
Depth (inc	hes):						Is Hydric Soil Present?	Yes No X
Remarks:								
								10
HYDROLOG	Y							
Wetland Hydrol	logy Indicators:						and the second second	
Primary Indicate	ors (minimum of one i	s required; check	all that apply)				Secondary Indicato	rs (minimum of two required)
Surface V	Vater (A1)		Water-Stai	ned Leaves (B9))		Surface Soil	Cracks (B6)
	er Table (A2)		Aquatic Fa				Drainage Pa	
Saturation				tic Plants (B14)				Water Table (C2) (~July 15 or later)
Water Ma				Sulfide Odor (C1			Crayfish Bur	rows (C6)
	: Deposits (B2)			hizospheres on	-	ts (C3)		isible on Aerial Imagery (C9)
Drift Depo				of Reduced Iron				tressed Plants (D1)
	or Crust (B4)			n Reduction in T	filled Soils (C6)	· · · · · · · · · · · · · · · · · · ·	Position (D2)
Iron Depo				Surface (C7)			FAC-Neutral	Test (D5)
	n Visible on Aerial Ima			Nell Data (D9)				
Sparsely	Vegetated Concave S	ипасе (вв)	Other (Expl	ain in Remarks)				
Field Observat	lions:							
Surface Water	Present? Y	es No	Depth (in	iches):				
Water Table Pr	esent? Y	es No	Depth (in	iches):				
Saturation Pres		es No	Depth (in	iches):		Is Wet	land Hydrology Present?	Yes No 🗡
(includes capilla			all and the first		(mmm) 16	lable		
Describe Recor	ded Data (stream gau	ge, monitoring w	eii, aenai photos, p	revious inspect	ions), ir avai	ladie:		
Pomorke:								
Remarks:								
Thomason P A.	sociates Motional De-	vices					Based on HOLOF H	west Supplement D-t
mompson & As	ssociates Wetland Sei	VICES					Based on USACE MIC	west Supplement Datasheet, v2

WETLAND DETERM			
Project/Site: South Shore Park Black Re-locat	City/County:	Milwa	JKC Milwauce Sampling Date: 10103 /2017
Applicant/Owner: Robert Wright - Smith Grou	2		State: WI Sampling Point: 12-
Investigator(s): TAWS - Alice Thompson, Can'ssa Anich	Section 10	_Township_	6 N, Range 22 East West
Landform: Summit Shoulder Backslope Footslope Toeslope Orban Modified Other			
Soil Map Unit Name: Unmapped			WWI classification:
Are climatic/hydrologic conditions on the site typical for this time of year?	Yes X	No	Reason: Previous 90 day Precipitation WET NORMAL DRY
Are Vegetation, Soil, or Hydrologysignificantly of Are Vegetation, Soil, or Hydrology problematic?	human (a	-C revi	Are "Normal Circumstances" present? Yes X No hew warman
SUMMARY OF FINDINGS - Attach site map showing sampling p	oint locations	, transects	s, important features, etc.
Hydrophytic Vegetation Present? Yes <u>x</u> No Hydric Soil Present? Yes No <u>x</u>	aV	Vetland?	d Area within Yes No X arsh Fresh Wet Meadow Sadge Meadow Shrub Carr Swamp Forest Riverine
Wetland Hydrology Present? Yes No K Remarks: Recently constructed storm	Eph	emeral Basin F	Formed Wetland
Discussed with Tom Nedland (10)2:	3/17) - 1	he agree	is - only meets 1/3 (and wetland
7			
VEGETATION - Use scientific names of plants. アリットする いって		1	Dominance Test worksheet: Character Star
Absolute % Tree Stratum (Plot size: equiv to 30' radius) Cover	Dominant Species?	Indicator Status	Dominance rest worksheet.
1			Number of Dominant Species That Are OBL, FACW, or FAC:
2			Total Number of Dominant Species
4			Percent of Dominant Species That Are
5	= Total Cover		
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)	10(010000)		Prevalence Index worksheet:
			Total % Cover of: Multiply by:
· · · · · · · · · · · · · · · · · · ·			
2			OBL species x 1 =
3			FACW species x 2 =
4			FAC species x 3 =
5			FACU species x 4 =
6,			UPL species x 5 =
7			Column Totals: (A) (B)
	= Total Cover		Prevalence Index = B/A =
Herb Stratum (Plot size: equiv to 5' radius)	24.1	_	Hydrophytic Vegetation Indicators:
1. Populus tremulailes seeking 40	A	FAL	Rapid test for hydrophytic vegetation
2. Phonesmittes austanlis 0 5		FACW	∑ Dominance Test is >50%
3. Schoenoplectus tabermemontin 10		0.61	Prevalence Index is ≤3.01
4. Xantholium strumavium 10		FAC	Morphological Adaptations ¹ (Provide supporting data in Remarks)
5. his versicelar 5		061	Problematic Hydrophytic Vegetation ¹ (Explain)
6			Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7			Definitions of Vegetation Strata:
9			Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
10	= Total Cover	35/11	Sapling/shrub - Woody plants less than 3 in. DBH and greater than
Woody Vine Stratum (Plot size: equiv to 30' radius) 1		- 111	3.28 (1m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2			Woody vines - All woody vines greater than 3.28 ft in height.
3			
	= Total Cover		Is Hydrophytic Vegetation Present? Yes <u>No</u> No
planted stormwater swale of wetland plants installe	f Pa	-king	, lot
wetland plants installe	4	_	

Profile Description: (Describe to the depth ne	eded to document the in	dicator or confirm the	absence of i	indicators.)	Samping Fort.
Depth Matrix	Redox Feature	98			
(inches) Color (moist) %	Color (moist)	% Type ¹	Loc ²	Texture	Remarks
0-4" 10YP 312 50	0			SANC	
104p 4/2 5	0				
4 rock	•				
		·	-		
¹ Type: C=Concentration, D=Depletion, RM=Red	uced Matrix MS=Masked	Sand Grains		² l ocation: Pl	.=Pore Lining, M=Matrix.
Hydric Soil Indicators: (For LRR M)	ubed Marix, Mo-Masked	ound orains		Indicators for Problema	
Histosol (A1)	Sandy Gleyed	Matrix (S4)		Coast Prairie Redo	
Histic Epipedon (A2)	Sandy Redox			Iron-Manganese M	
Black Histic (A3)	Stripped Matr			Very Shallow Dark	
Hydrogen Sulfide (A4)	Dark Surface			Other (Explain in R	, ,
Stratified Layers (A5)	Loamy Mucky				·····,
2 cm Muck (A10)	Loamy Gleye				
Depleted Below Dark Surface (A11)	Depleted Mat				
Thick Dark Surface (A12)	Redox Dark S	. ,			
Sandy Mucky Mineral (S1)		(Surface (F7)			
5 cm Mucky Peat or Peat (S3)	Redox Depres				
Indicators of hydrophytic vegetation and wetlan	d hydrology must be prese	ent, unless disturbed or	problematic.	* Test Indicator	
Restrictive Layer (if observed):					
Туре:					
Depth (inches):				Is Hydric Soil Present	? Yes No X
Remarks: Sand in vecent No change in co HYDROLOGY if it will Wetland Hydrology Indicators: Primary Indicators:	thy const low from	sand on	high	point -	Not clear
HYDROLOGY if it will	develop or	ler time	if d	rhiniy well,	
Wetland Hydrology Indicators:					
rinnary indicators (minimum of one is required, i	sileon all ular apply/			Secondary indicate	ors (minimum or two required)
Surface Water (A1)		ed Leaves (B9)			Cracks (B6)
High Water Table (A2)	Aquatic Fau	• •			atterns (B10)
Saturation (A3)		Plants (B14)			Water Table (C2) (~July 15 or later)
Water Marks (B1)		ulfide Odor (C1)	t- (00)	Crayfish Bu	
Sediment Deposits (B2)		izospheres on Living Ri	00ts (C3)		/isible on Aerial Imagery (C9)
Drift Deposits (B3)		Reduced Iron (C4)	- (00)		Stressed Plants (D1)
Algal Mat or Crust (B4)		Reduction in Tilled Soil	s (C6)		c Position (D2)
Iron Deposits (B5)	Thin Muck S			FAC-Neutra	
Inundation Visible on Aerial Imagery (B7) Sparsely Vegetated Concave Surface (B8)		ell Data (D9) n in Remarks)	3	506 dominant	it fire w/obl
Field Observations:					
Surface Water Present? Yes	No \ , Depth (inc	hes):			
Water Table Present? Yes	No Depth (inc				
Saturation Present? Yes	No Depth (inc		Is Wetla	and Hydrology Present	Yes No X
(includes capillary fringe)	71				
Describe Recorded Data (stream gauge, monitor	ing well, aerial photos, pre	evious inspections), if a	vailable:		
Remarks: gromou-phil. posi	tion your	yn ton	by i	n sand F	ur Tom Nedland
					WDNR

WETLAN	D DETERMINATIO	N DATA I	FORM -	Midwest	Region
--------	----------------	----------	--------	---------	--------

				- Midwest Region
Project/Site: South Shore Park Beach Re-loc			Milwan	ee Milwarkee Sampling Date: 10/23 /2017
Applicant/Owner: <u>Robert Wright</u> , Smith			0	State: WI Sampling Point: 13
Investigator(s): TAWS - Alice Thompson Conserve P	the state is a state of the sta	and the second sec	and the second second	N, RangeEast West
andform: Summit Shoulder Backslope Footslope Toeslope Urban Modified	Other	I	ocal relief:	concave, convex, linear, other:
Soil Map Unit Name: <u>unmapped</u>	1			WWI classification:
Are climatic/hydrologic conditions on the site typical for this tim				
Are Vegetation, Soil, or Hydrology	significantly	disturbed?		Are "Normal Circumstances" present? Yes X_No
Are Vegetation, Soil, or Hydrology				
SUMMARY OF FINDINGS - Attach site map showing	sampling p	oint locations	s, transect	s, important features, etc.
Hydrophytic Vegetation Present? YesNo	×	Is	the Sample	ed Area within
Hydric Soil Present? Yes No	+	a	Wetland?	YesNo
Wetland Hydrology Present? YesNo	+			larsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine Farmed Wetland
Remarks:	0 1			
beach dune - planted	ben	ch grass	r1.570	ration with
:				
7				
VEGETATION - Use scientific names of plants.				
	Absolute %	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: equiv to 30' radius)	Cover	Species?	Status	Number of Dominant Species That
1				Are OBL, FACW, or FAC:
2				Total Number of Dominant Species
3				Across All Strata: (B)
4.				Percent of Deminant Species That Are
5.				Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B)
hi a		= Total Cover		
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)				Prevalence Index worksheet:
1				Total % Cover of: Multiply by:
2				OBL species x 1 =
3.				FACW species x 2 =
4				FAC species x 3 =
5.				FACU species x 4 =
6.				UPL species x 5 =
7				Column Totals: (A)(B)
		= Total Cover		Prevalence index = B/A =
Herb Stratum (Plot size: equiv to 5' radius)				Hydrophytic Vegetation Indicators:
1. Aimmophila breviligulata	30	M	Vol	Rapid test for hydrophytic vegetation
2.				Dominance Test is >50%
3.				Prevalence Index is ≤3.01
4				Morphological Adaptations ¹ (Provide supporting data in Remarks)
5				Problematic Hydrophytic Vegetation ¹ (Explain)
6				¹ Indicators of hydric soll and wetland hydrology must be present, unless disturbed or problematic.
7				
8				Definitions of Vegetation Strata:
9				Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.
10.				noight (2017), regulation of height.
Woody Vine Stratum (Plot size: equiv to 30' radius)	30	= Total Cover	15/6	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 (1m) tall.
1				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2				Woody vines - All woody vines greater than 3.28 ft in height.
		= Total Cover		Is Hydrophytic Vegetation Present? Yes No X
Remarks: planted bench 3m	55 02	adjaco	م ا	ind dunc

	ption: (Describe to the dept	n needed to document the	indicator or con		osence or	indicators.)	
Depth	Matrix	Redox Feat					
(inches)	Color (moist) %	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-15	5 1042513 5	0				Loasse &	county loam - loam
- W	1042412 5						say and y
< 11		/	-				· · · · · · · · · · · · · · · · · · ·
15"	compacted san	7				· · · · · · · · · · · · · · · · · · ·	
			- · · · · · · · · · · · · · · · · · · ·				
				_			
	ALL BURNELLES		10.10.1				
	centration, D=Depletion, RM=	Reduced Matrix, MS=Maske	d Sand Grains				n: PL=Pore Lining, M=Matrix. lematic Hydric Soils ³ :
-	dicators: (For LRR M)					Indicators for Propi	ematic Hyunc Solis".
Histopol	(A4)	Sandy Clev	od Matrix (SA)			Coast Prairie	Redox (A16)
Histosol	• •	the second se	ed Matrix (S4)			Coast Prairie I	
Histic Ep	pipedon (A2)	Sandy Red	ox (S5)			Iron-Mangane:	se Masses (F12)
Histic Ep Black His	nipedon (A2) stic (A3)	Sandy Redo	ox (S5) atrix (S6)			Iron-Manganes Very Shallow I	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydrogei	pipedon (A2)	Sandy Red Stripped Ma Dark Surfac	ox (S5) atrix (S6)			Iron-Mangane:	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydrogei	bipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)	Sandy Red Stripped Ma Dark Surfac Loamy Muc	ox (S5) atrix (S6) æ (S7)			Iron-Manganes Very Shallow I	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydrogei Stratified 2 cm Mu	bipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5)	Sandy Red Stripped Ma Dark Surfac Loamy Muc	ox (S5) atrix (S6) æ (S7) ky Mineral (F1) ved Matrix (F2)			Iron-Manganes Very Shallow I	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydrogei Stratified 2 cm Mu Depleted	bipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5) ck (A10)	Sandy Redo Stripped Ma Dark Surfac Loamy Muc Loamy Gley Depleted M	ox (S5) atrix (S6) æ (S7) ky Mineral (F1) ved Matrix (F2)			Iron-Manganes Very Shallow I	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydroger Stratified 2 cm Mu Depleted Thick Da	ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5) ick (A10) I Below Dark Surface (A11)	Sandy Red Stripped Ma Dark Surfac Loamy Muc Loamy Gley Depleted M Redox Dark	ox (S5) atrix (S6) æ (S7) ky Mineral (F1) red Matrix (F2) atrix (F3)			Iron-Manganes Very Shallow I	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydroger Stratified 2 cm Mu Depleted Thick Da Sandy M	ipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5) ick (A10) I Below Dark Surface (A11) ark Surface (A12)	Sandy Redd Stripped Ma Dark Surfac Loamy Muc Loamy Gley Depleted M Redox Dark	ox (S5) atrix (S6) æ (S7) ky Mineral (F1) red Matrix (F2) atrix (F3) s Surface (F6)			Iron-Manganes Very Shallow I	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydrogel Stratified 2 cm Mu Depleted Thick Da Sandy M 5 cm Mu	pipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5) ck (A10) I Below Dark Surface (A11) ark Surface (A12) lucky Mineral (S1) icky Peat or Peat (S3)	Sandy Redd Stripped Ma Dark Surfac Loamy Muc Loamy Gley Depleted M Redox Dark Depleted D Redox Depl	xx (S5) atrix (S6) ee (S7) ky Mineral (F1) red Matrix (F2) atrix (F3) s Surface (F6) ark Surface (F7) ressions (F8)	urbed or p	roblematic	Iron-Mangane: Very Shallow I Other (Explain	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydrogei Stratified 2 cm Mu Depleted Thick Da Sandy M 5 cm Mu ² Indicators of	pipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5) ck (A10) I Below Dark Surface (A11) ark Surface (A12) lucky Mineral (S1) icky Peat or Peat (S3) hydrophytic vegetation and w	Sandy Redd Stripped Ma Dark Surfac Loamy Muc Loamy Gley Depleted M Redox Dark Depleted D Redox Depl	xx (S5) atrix (S6) ee (S7) ky Mineral (F1) red Matrix (F2) atrix (F3) s Surface (F6) ark Surface (F7) ressions (F8)	urbed or p	roblematic.	Iron-Mangane: Very Shallow I Other (Explain	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydrogen Stratified 2 cm Mu Depleted Thick Da Sandy M 5 cm Mu 'Indicators of	pipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5) ck (A10) I Below Dark Surface (A11) ark Surface (A12) lucky Mineral (S1) icky Peat or Peat (S3)	Sandy Redd Stripped Ma Dark Surfac Loamy Muc Loamy Gley Depleted M Redox Dark Depleted D Redox Depl	xx (S5) atrix (S6) ee (S7) ky Mineral (F1) red Matrix (F2) atrix (F3) s Surface (F6) ark Surface (F7) ressions (F8)	urbed or p	roblematic.	Iron-Mangane: Very Shallow I Other (Explain	se Masses (F12) Dark Surface (F22)*
Histic Ep Black His Hydrogei Stratified 2 cm Mu Depleted Thick Da Sandy M 5 cm Mu ² Indicators of	pipedon (A2) stic (A3) n Sulfide (A4) I Layers (A5) I Below Dark Surface (A11) ark Surface (A12) lucky Mineral (S1) lucky Peat or Peat (S3) hydrophytic vegetation and w ayer (if observed):	Sandy Redd Stripped Ma Dark Surfac Loamy Muc Loamy Gley Depleted M Redox Dark Depleted D Redox Depl	xx (S5) atrix (S6) ee (S7) ky Mineral (F1) red Matrix (F2) atrix (F3) s Surface (F6) ark Surface (F7) ressions (F8)	urbed or p	roblematic.	Iron-Mangane: Very Shallow I Other (Explain	se Masses (F12) Dark Surface (F22)* n in Remarks)

HYDROLOGY

Wetland Hydrology Indicators:					
Primary Indicators (minimum of	one is requir	ed: check all	that apply)	Secondary Indicators (minimum of two require	ed)
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 Aeri Sparsely Vegetated Conce	al Imagery (B	7)	Water-Stained Leaves (B9) Aquatic Fauna (B13) True Aquatic Plants (B14) Hydrogen Sulfide Odor (C1) Oxidized Rhizospheres on Livin Presence of Reduced Iron (C4) Recent Iron Reduction in Tilled Thin Muck Surface (C7) Gauge or Well Data (D9) Other (Explain in Remarks)	Surface Soil Cracks (B6) Drainage Patterns (B10) Dry-Season Water Table (C2) (-July 15 c Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C Stunted or Stressed Plants (D1)	or later)
Field Observations: Surface Water Present? Water Table Present? Saturation Present?	Yes Yes Yes	No No No	Depth (inches): Depth (inches): Depth (inches):	Is Wetland Hydrology Present? Yes No	X
(includes capillary fringe)					
Remarks:			aerial photos, previous inspections),	, if available:	

Thompson & Associates Wetland Services

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: South Share Park Beach Re-1			Milway	Wee/Milwaukee Sampling Date: 10/23 12017			
pplicant/Owner: Robert Wright, Smi				State: WI Sampling Point: 14			
vestigator(s): TAWS - Alice Thompson, Carissa Pr				DN, RangeEast/West			
Indform: Summit Shoulder Backslope Footslope Toeslope Urban Modified	Other		_ocal relief:	concave, convex linear, other:			
oil Map Unit Name: unmapped				WWI classification:			
re climatic/hydrologic conditions on the site typical for this		Yes X	No	Reason: Previous 90 day Precipitation WET(NORMAL)DRY			
re Vegetation, Soil, or Hydrology re Vegetation, Soil, or Hydrology UMMARY OF FINDINGS - Attach site map showing	problematic			Are "Normal Circumstances" present? Yes X No			
	SI		s, transce	a, mportant returnes, etc.			
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Netland Hydrology Present? Yes	No 7	Is the Sampled Area within a Wetland? Yes No X Wetland Type: Marsh Fresh Wet Meadow Sedge Meadow Shrub Carr Swamp Forest Riverine Ephomeral Basin Farmed Wetland					
Remarks: from here stopes ~	-t 9	week	hister	ground			
/EGETATION - Use scientific names of plants.							
	Absolute %	Dominant	Indicator	Dominance Test worksheet:			
Free Stratum (Plot size: equiv to 30' radius)	Cover	Species?	Status	Number of Dominant Species That Image: Are OBL, FACW, or FAC: Image: Are OBL, FACW, or FAC: (A)			
				Total Number of Dominant Species 2 (B)			
				Percent of Dominant Species That Are 50 (A/B)			
		= Total Cover					
Sapling/Shrub Stratum (Plot size: equiv to 15' radius)				Prevalence Index worksheet:			
				Total % Cover of: Multiply by:			
2				OBL species x 1 =			
3				FACW species x 2 =			
k				FAC species <u>120</u> x 3 = <u>360</u>			
				FACU species 70 x4 = 28°			
L				UPL species x 5 =			
				Column Totals: 190 (A) 640 (B)			
·		= Total Cover	0	Prevalence Index = B/A = 3.34			
lerb Stratum (Plot size: equiv to 5' radius)				Hydrophytic Vegetation Indicators:			
Poor professe	60	~	FUL	Rapid test for hydrophytic vegetation			
Planter majer	30		FAL	Dominance Test is >50%			
Table hybriden	70	M	FREV	Prevalence Index is ≤3.01			
Polyaonum aviculare	20	-+	Fac	Morphological Adaptations ¹ (Provide supporting data in Remarks)			
			100	Problematic Hydrophytic Vegetation ¹ (Explain)			
k				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
				Definitions of Vegetation Strata:			
			211	Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast			
9				 height (DBH), regardless of height. 			
0	190	= Total Cover	5 38	Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 (1m) tall.			
l			1-0	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
2			- 25	Woody vines - All woody vines greater than 3.28 ft in height.			
3.		= Total Cover		Is Hydrophytic Vegetation Present? Yes No X			
Remarks:							

Thompson & Associates Wetland Services

14-16 10xp 1/3 14" york 15 Sandy Gleyed Matrix (S4) 16 Coast Prairie Redox (A16) 11 Sandy Gleyed Matrix (S4) 11 Sandy Redox (S5) 11 Indicators for Problematic Hydric Solis*: 11 Sandy Redox (S5) 11 Black Histic (A3) 12 Sandy Redox (S5) 13 Dark Surface (S7) 14 Loamy Mucky Mineral (F1) 2 or Muck (A10) Loamy Mucky Mineral (F1) 2 or Muck (A10) Loamy Oleyed Matrix (F2) 14 Depleted Below Dark Surface (A12) Redox Dark Surface (F7) 3 and Mucky Mineral (S1) Depleted Dark Surface (F7) 3 and Mucky Mineral (S1) D		Sampling Point: 14
(inches) Color (moist) % Type* Loc* Texture Remarks 0 - 14 19 % 3 z Smmty Para Smty Para <td< th=""><th>be to the depth needed to document the indi</th><th>ndicators.)</th></td<>	be to the depth needed to document the indi	ndicators.)
	Matrix Redox Features	
IM= /ls Image: Imag	ioist) % Color (moist)	Texture Remarks
IV "	23/2	small loan + rock Crobble >
IV "	413	San Or loam
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains Indicators for Problematic Hydric Soils*: Hydric Soll Indicators (<i>For LRR M</i>) Indicators for Problematic Hydric Soils*: Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Gleyed Matrix (S4) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Stratified Layers (A5) Loarny Mucky Mineral (F1) Other (Explain in Remarks) Depleted Below Dark Surface (A12) Redox Dark Surface (F7) Other (Explain in Remarks) Stratified Layers (A5) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) S andy Mucky Mineral (S1) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F6) 3Indicators of hydrophytic vegetation end wetland hydrology must be present, unless disturbed or problematic. * Test Indicator * Remarks: I/W I/W I/W Michaece (F7) Network Is Hydric Soll Present? Yes M Porter Indicators of hydrophytic vegetation end wetland hydrology must be present, unless disturbed or problematic. * Test Indicator *		
Hydric Soll Indicators: (For LRR M) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) 2 cm Muck (A10) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Other (Explain in Remarks) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Peat or Peat (S3) Redox Depressions (F6) * Test Indicator *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator * Test Indicator Restrictive Layer (If observed): Yes M Type: Is Hydric Soil Present? Yes M HytDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required; check all that apply)		
Hydric Soll Indicators: (For LRR M) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) 2 cm Muck (A10) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Other (Explain in Remarks) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Peat or Peat (S3) Redox Depressions (F6) * Test Indicator *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator * Test Indicator Restrictive Layer (If observed): Yes M Type: Is Hydric Soil Present? Yes M HytDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required; check all that apply)		
Hydric Soll Indicators: (For LRR M) Indicators for Problematic Hydric Soils*: Coast Prairie Redox (A16) Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histosol (A1) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Other (Explain in Remarks) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) Sandy Mucky Peat or Peat (S3) Redox Depressions (F6) * Test Indicator *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (If observed): Yes M Type: Is Hydric Soil Present? Yes M HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required; check all that apply)		
Hydric Soll Indicators: (For LRR M) Indicators for Problematic Hydric Soils*: Coast Prairie Redox (A16) Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histosol (A1) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Other (Explain in Remarks) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F6) Sandy Mucky Peat or Peat (S3) Redox Depressions (F6) * Test Indicator *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (If observed): Yes M Type: Is Hydric Soil Present? Yes M HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required; check all that apply)		
Hydric Soll Indicators: (For LRR M) Indicators for Problematic Hydric Soils*: Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) 2 cm Muck (A10) Loamy Mucky Mineral (F1) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Other (Explain in Remarks) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Mucky Peat or Peat (S3) Redox Depressions (F6) * Test Indicator *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator * Test Indicator Restrictive Layer (If observed): Yes M Type: Is Hydric Soil Present? Yes M HytDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required; check all that apply)		
Histosol (A1) Sandy Gleyed Matrix (S4) Coast Prairie Redox (A16) Histic Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) Stratified Layers (A5) Loarny Mucky Mineral (F1) Coast Prairie Redox (A16) 2 cm Muck (A10) Loarny Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F7) S andy Mucky Mineral (S1) Depleted Dark Surface (F7) S of Mucky Mineral (S1) Depleted Dark Surface (F7) Redox Depressions (F6) * Test Indicator and Ciators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator * Test Indicator Restrictive Layer (If observed): Type:	Depletion, RM=Reduced Matrix, MS=Masked Sa	² Location: PL=Pore Lining, M=Matrix.
Histic Epipedon (A2) Sandy Redox (S5) Iron-Manganese Masses (F12) Black Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydrogen Suffide (A4) Dark Surface (S7) Other (Explain in Remarks) Stratified Layers (A5) Loamy Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F7) S cm Mucky Mineral (S1) Depleted Dark Surface (F7) S cm Mucky Peat or Peat (S3) Redox Depressions (F6) S ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (If observed): Type:	LRR M)	
Black, Histic (A3) Stripped Matrix (S6) Very Shallow Dark Surface (F22)* Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) Stratified Layers (A5) Loamy Mucky Mineral (F1) Other (Explain in Remarks) 2 cm Muck (A10) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) S cm Mucky Peat or Peat (S3) Redox Depressions (F6) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator * Test Indicator Restrictive Layer (If observed): Type: Is Hydric Soll Present? Yes N Remarks: If Mathematic Ff1 Attace Secondary Indicators (minimum of two required: check all that apply) Secondary Indicators (minimum of two required: check all that apply)	Sandy Gleyed M	
Hydrogen Sulfide (A4) Dark Surface (S7) Other (Explain in Remarks) Stratified Layers (A5) Loamy Mucky Mineral (F1) Depleted Below Dark Surface (A11) Depleted Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) S cm Mucky Peat or Peat (S3) Redox Depressions (F8) alndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (If observed): Type:	Sandy Redox (S	
Stratified Layers (A5) Loamy Mucky Mineral (F1) 2 cm Muck (A10) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) 5 cm Mucky Peat or Peat (S3) Redox Depressions (F8) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (If observed): Type: Type:	Stripped Matrix	Very Shallow Dark Surface (F22)*
2 cm Muck (A10) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) 5 cm Mucky Peat or Peat (S3) Redox Depressions (F6) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (If observed): Type:	Dark Surface (S	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Depleted Matrix (F3) Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Peat or Peat (S3) Depleted Dark Surface (F7) * Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (If observed): Type: Depth (inches): Is Hydric Soil Present? Yes Remarks: If W.Y. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: check all that apply)	Loamy Mucky M	
Thick Dark Surface (A12) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) 5 cm Mucky Peat or Peat (S3) Redox Depressions (F8) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (If observed): Type: Is Hydric Soil Present? Depth (inches): Is Hydric Soil Present? Remarks: Iiku H Iiku H Iiku H Wetland Hydrology Indicators: Secondary Indicators (minimum of one is required: check all that apply)	Loamy Gleyed N	
Sandy Mucky Mineral (S1) Depleted Dark Surface (F7) 5 cm Mucky Peat or Peat (S3) Redox Depressions (F8) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (If observed): Type:	urface (A11) Depleted Matrix	
5 cm Mucky Peat or Peat (S3) Redox Depressions (F8) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. * Test Indicator Restrictive Layer (if observed): Type: Depth (inches): Remarks: IWM IWM HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: check all that apply)	2) Redox Dark Sur	
Primary Indicators (minimum of one is required: check all that apply)	S1) Depleted Dark S	
Restrictive Layer (if observed): Type: Is Hydric Soil Present? Yes N Depth (inches): Is Hydric Soil Present? Yes N Remarks: IiWy Nistance Fill avec HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required: check all that apply) Secondary Indicators (minimum of two required: check all that apply)	at (S3) Redox Depressi	
Type:	getation and wetland hydrology must be present	Test Indicator
Depth (inches): is Hydric Soil Present? Yes N Remarks: Iikuy historic Fill avec HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two required)	ed):	
Remarks: Iiky historic fill avec HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two requ		
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two requ		is Hydric Soil Present? Yes No
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two requ	Will hickory fill	3
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two requ	likely monone who avec	
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two requ		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two requ		
Wetland Hydrology Indicators: Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two requ		
Primary Indicators (minimum of one is required: check all that apply) Secondary Indicators (minimum of two requ	وغويبا البرائي والكرار والكريد المتراجع	
		Secondary Indicators (minimum of two required)
High Water Table (A2) Aquatic Fauna (B13) Drainage Patterns (B10)		
		Dry-Season Water Table (C2) (~July 15 or late
Water Marks (B1) Hydrogen Sulfide Odor (C1) Crayfish Burrows (C8)		
Drift Deposits (B3) Presence of Reduced Iron (C4) Stunted or Stressed Plants (D1)		Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Recent Iron Reduction in Tilled Soils (C6) Geomorphic Position (D2)		
Iron Deposits (B5) Thin Muck Surface (C7) FAC-Neutral Test (D5)		

Primary Indicators (minimum of one is required: check all that apply)						Secondary Indicators (minimum of two required)		
Surface Water (A1) Water-Stained Leaves (B9)						Surface Soil Cracks (B6)		
High Water Table (A2) Aquatic Fauna (B13)						Drainage Patterns (B10)		
Saturation (A3) True Aquatic Plants (B14)						Dry-Season Water Table (C2) (~July 15 or later)		
Water Marks (B1)	Hydrogen Sulfide Odor (C1)					Crayfish Burrows (C8)		
Sediment Deposits (B2)		Oxidized Rhizospheres on Living Roots			ng Roots (C3)	Saturation Visible on Aerial Imagery (C9)		
Drift Deposits (B3)				Presence of Reduced Iron (C4)	Stunted or Stressed Plants (D1)		
Aigal Mat or Crust (B4)			0.00	Recent Iron Reduction in Tilled	l Soils (C6)	Geomorphic Position (D2)		
Iron Deposits (B5)				Thin Muck Surface (C7)		FAC-Neutral Test (D5)		
inundation Visible on Aerial Imagery (B7) Gauge or Well Data (D9)								
Sparsely Vegetated Concar	/e Surface (E	38)	_	Other (Explain in Remarks)				
Field Observations:								
Surface Water Present?	Yes	No_	,	Depth (inches):				
Water Table Present?	Yes	No	\bigvee	Depth (inches):		N		
Saturation Present?	on Present? Yes No A Depth (inches):		Is Weti	Is Wetland Hydrology Present? Yes No X				
(includes capillary fringe)								
Describe Recorded Data (stream	gauge, mon	itoring we	ell, aer	al photos, previous inspections), if available:			
Remarks:								