SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
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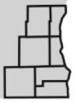


February 10, 2022

Mr. Adrian Stocks
Water Quality Bureau Director
Wisconsin Department of Natural Resources
101 South Webster Street
Madison, WI 53707-7921

Dear Mr. Stocks:

Pursuant to the provisions of the cooperative agreement entered into on May 13, 2021, between the Southeastern Wisconsin Regional Planning Commission and the Wisconsin Department of Natural Resources governing the conduct of continuing areawide water quality management planning in southeastern Wisconsin during 2021, we are providing to you this report of work completed under that agreement for the period from January 1, 2021, through December 31, 2021. The work completed is summarized in the two attached tables.

Table 1 indicates the work products specified to be provided under each work element of the cooperative agreement, as well as a summary listing of the work products completed during the year. Table 2 provides additional detail as to the specific work products completed and indicates the status of the delivery of those work products to you. The tabular data are also being submitted electronically to the Department SWIMS database, as is the agreed-upon procedure.

Should you have any questions concerning this matter, please do not hesitate to contact Laura K. Herrick of the Commission staff directly at (262) 953-3224, or lherrick@sewrpc.org.

Sincerely,

Kevin J. Muhs, PE, AICP
Executive Director

KJM/LKH/ac
WDNR 2021 2ND HALF WQ PLAN STATUS REPORT (00260927).DOCX

Enclosures

cc: Mr. Tim Asplund, Section Chief, WDNR-Madison
Ms. Lisa Helmuth, Water Resources Management Specialist, WDNR-Madison
Ms. Linnea Rock, Water Resources Management Specialist, WDNR-Madison

Table 1
2021 Continuing Water Quality Planning Program Project Output Summary: January 1, 2021 Through December 31, 2021

Work Project and Project Output Anticipated from January 1, Through December 31, 2021, per 2021 Agreement	Project Outputs Completed during January 1 Through December 31, 2021 (see Table 2 for details)
Project 300-1000: Water Quality Management Plan Coordination and Extension of Implementation Activities	
1. Two letter reports or memoranda	1. Three memoranda completed: Upper Oconomowoc River Nutrient and Sediment Study (Memorandum Report 258), A Lake Management Plan for Nagawicka Lake (Community Assistance Planning Report 262, 2nd Edition), A Lake Management Plan for Silver Lake, Washington County, Wisconsin (Memorandum Report 123, 3rd Edition).
2. Assistance and Data Provision to WDNR, County Land and Water Conservation Committees, and Other Designated Management Agencies for Watershed and other Water Quality-Related WDNR Advisory Committees, Including Statewide Activities	2. • Attendance and material review for six meetings of MMSD Technical Advisory Team (TAT) • Continue to serve on the following MMSD project committees: o Burnham Canal technical stakeholder committee o Milwaukee River rehabilitation project associated with removal of Estabrook Park dam and falls, along with channel improvements in the general reach o Reforestation & Wetland Restoration Program development meetings • Continued to participate in the Mukwonago River Initiative and Mukwonago River Fisheries Committee • Assisted Carroll University field station Interim Director in water and land resource management assessment and alternatives development. • Commission staff helped to facilitate meetings, analyses, and fieldwork for the WDNR State Wildlife Grant to implement a Comprehensive Watershed Approach to Identify Distribution and Status of Mussel Species of Greatest Conservation Need and Conservation Opportunities for Declining Mussel Populations in the Fox River Watershed of Illinois and Wisconsin. • Commission staff developed a revised draft Aquatic Assessment Ranking scheme for lakes and stream reaches as part of the Regional Natural Areas and Critical Species Habitat Protection Plan Update. • Continued to participate in the Chicago Wilderness Science and Natural Resource Management Team meetings. • Continued to assist in the 2022 WI Lakes and Rivers Convention Planning Meetings • Continued to serve on the Nature Conservancy's TNC-Resilience Tool work group development. • Continued assessment of public access carry-in boat launch site on North Lake for potential upgrades for vehicle access. Conducted shallow groundwater monitoring in support of the SEWRPC wetland delineation assessment. • Assisted WDNR staff in selecting and collecting samples for the neonicotinoid water quality sampling project throughout the entire Southeastern WI regional area.

Table 1 (Continued)

Work Project and Project Output Anticipated from January 1, Through December 31, 2021, per 2021 Agreement	Project Outputs Completed during January 1 Through December 31, 2021 (see Table 2 for details)
	• Continued to provide assistance in the development of the Fox River Water Trail and participate in the Fabulous Fox! Water Trail Core Development Team to achieving National Water Trail designation status among both states WI and IL.
	• Participated as a member of the Root-Pike Watershed Initiative Network (WIN).
	• Commission staff serves on the Board as a non-voting advisor for the Southeastern Wisconsin Fox River Commission.
	• Participated in the Southeastern Wisconsin Watersheds Trust, Inc. Commission staff serves on the Board of Directors as a non-voting advisor and on the Science and Policy Committees. • Provided letters of support to Ozaukee County for various grant initiatives • Assisted Ozaukee County to evaluate flooding and aquatic organism passage associated with Highway W reconstruction project. • Assisted Ozaukee County to examine stormwater runoff and management alternatives at Virmond County Park with an emphasis on hydrogeologic, vegetation and wetland issues. • Assisted Walworth County to evaluate aggregate mining site mitigation alternatives. • Assisted the Water Alliance for Preserving Geneva Lake regarding stream restoration and grant funding initiatives.
3. Assistance to 35 Established Waterbody Organizations and Participation with WDNR and Others in Statewide Lake Planning	3.
	• Provided assistance to 36 waterbody–related organizations (including land trusts, conservancy, and conservation themed groups). This includes 21 lake-related organizations and 3 river-related organizations. • Assisted 21 local units of government (municipalities and Lake Districts) to evaluate issues, address concerns, develop goals, and evaluate execution strategies. • Developed technical scopes of work, budgets, and schedules addressing multiple topics for 4 different lakes.
	• Provided major assistance to the Southeast Fox River Partnership in developing, coordinating, and hosting the 9th Annual Fox River Summit in 2021 as part of the Wisconsin Water Week Program in collaboration with UW-Extension, Southeastern Wisconsin Fox River Commission, and multiple partners from the state of Illinois.
4. 30 Public Informational Reports or Presentations	4. 19 presentations on water quality issues and/or environmental issues.
5. WDNR-SEWRPC Program Coordination	5. Coordination with WDNR, including contract and work program development, meetings, and submittal of work products. Assisted lake and stream groups to better understand funding opportunities. Assisted WDNR with alum dosing calculation questions.
6. Attendance at 150 Meetings Related to Water Quality	6. Attended 230 meetings related to water quality planning

Table 1 (Continued)

Work Project and Project Output Anticipated from January 1, Through December 31, 2021, per 2021 Agreement	Project Outputs Completed during January 1 Through December 31, 2021 (see Table 2 for details)
7. Special subwatershed or County Land and Water Management Plan assistance	7. Commission staff served on technical advisory committees for Walworth and Waukesha County's Land and Water Resource Management Plans. Many of the activities listed elsewhere in this summary report also relate to land and water resource management in the counties of the Region. See specifically 300-1000, Items 2, 3, and 8 and 300-4000, Item 2
8. Miscellaneous Plan Implementation Activities	8. Maintain permit and data files; provision of information on a walk-in or telephone basis (904 meetings/phone calls/e-mails) (see Project 300-2000, Item 3)
Project 300-2000: Sanitary Sewer Extension Reviews and Assistance	
1. 150 Public and Private Sewer Extension Reviews	1. 155 public and private sewer extension reviews and letter reports
2. 40 Letter Reports Documenting In-Field Delineations of Environmentally Sensitive Lands	2. 8 letter reports
3. 150 Meetings/Phone Calls/E-mails to Review Environmentally Sensitive Areas and Related Matters Concerning Sewer Extensions and Sewer Service Areas	3. About 904 meetings/phone calls/e-mails with landowners, developers, and local officials
Project 300-3000: Sewer Service Area Plan Refinements	
1. One Sewer Service Area Plan	1. No sewer service area plans were completed
2. Revisions to Four Previous Sewer Service Area Plans	2. No amendments to previous sewer service area plans were completed
3. 25 Special Letter Reports on Environmentally Sensitive Areas	3. 26 letter reports
4. Provision of Data for WDNR Environmental Assessments	4. Provision of data for environmental assessments is now routinely provided
5. Meetings and Miscellaneous Activities	5. As needed
6. Development of Procedures for Environmentally Sensitive Lands Recommendations	6. Continued refinement of procedures and provision of additional mapping within each sewer service area
Project 300-4000: Regional Water Quality Management Plan Update	
1. Continue to Support Subregional Plan Amendment Activities	1. No specific work on this task
2. Implementation of the regional water quality management plan update for the greater Milwaukee watersheds	• Completed the Oak Creek Watershed Restoration Plan
Project 300-5000: Regional Water Quality Management Plan Update—Groundwater Management Studies	
1. Miscellaneous activities	• Completed the Village of Somers Water Supply Service Area Plan. • Studied chloride concentration in groundwater throughout the region and developed a data presentation tool

Table 2
Summary of 2020 Work Program Project Outputs and Status of Documentation: January 1, 2021 Through December 31, 2021

Work Products	Status of Documentation[a]
Project 300-1000: Water Quality Management Plan Coordination and Extension and Implementation Activities	
1. Two Letter Reports or Memoranda	
• Reports included the Upper Oconomowoc River Nutrient and Sediment Study (Memorandum report 258), A Lake Management Plan for Nagawicka Lake (CAPR 262, 2nd edition) and a Lake Management Plan for Silver Lake Washington County (MR 123, 3rd edition)	1, 4
• Provided review letter for the Somers West of the Divide facility plan.	1
• Provided review letter for the Village of Saukville modification facility plan.	1
• Provided review letter for the Village of Caledonia Central Lift Station.	1
• Provided support for the Village of Slinger sanitary sewer service area amendment.	2
• Provided support for the City of Racine facility plan update.	2
• Provided support for a private wastewater plant in the Village of Yorkville.	2
• Provided information for a future Village of Raymond facility plan	2
• Began sanitary sewer service area plan amendments for the Village of Slinger and City of Oak Creek.	2
2. Assistance and Data Provision for WDNR and Major Water Quality Management Plan Designated Management Agency Programs	
• Participation as member of MMSD TAT, Including meetings and material reviews. During the reporting period, attended six meetings	2
• Served on three MMSD project committees related to stream rehabilitation, fish passage, and wetland restoration	2
• Participated in Mukwonago River Initiative and River Fisheries Committee	2
• Support the Comprehensive Mussel study for the Fox River	2
• Provided technical support to Caroll University, Chicago Wilderness, WI Lakes and Rivers Convention planning, and the Nature Conservancy	2
• Assisted WDNR staff in neonicotinoid sampling in the Region	2
• Continued to provide assistance for development of the Fox River Water Trail	2
• Participation in Root-Pike Watershed Initiative Network	2
• Participation as a technical advisor to the Southeastern Wisconsin Fox River Commission (SEWFRC)	2
• Participation as a nonvoting Director and technical advisor to the Southeastern Wisconsin Watersheds Trust, Inc.	2
• Provided letters of support to Ozaukee County for grant initiatives	2
• Assisted Ozaukee County with Hwy W flood reduction concepts during reconstruction	2
• Assisted Ozaukee County with stormwater management issues at Virmond Park including geologic, vegetative, hydrologic characterization and wetland extent.	2 2
• Assisted Ozaukee County with study evaluating proposed development's effect on groundwater resources and local surface-water features.	2
• Assisted Walworth County with aggregate mining site mitigation alternatives	2
3. Assistance to Lake and River Organizations	
• Provision of Assistance to a Total of 36 Lake or River Organizations and counties. See Item 3, 300-1000 table (attached)	3
4. Public Information—Education Reports or Presentations	
• 19 presentations on Water Quality Topics	3 (one example provided)
5. WDNR Project Coordination and Work Program Development	
• General Coordination with WDNR	2
• Preparation of Annual Work Plans	2
• Submittal of Work Products	2
6. Attendance at 230 Meetings Related to Water Quality Planning	2
7. County Land and Water Resource Management Plan Assistance	2
8. Miscellaneous Plan Activities	
• Maintenance and Review of Water Quality Related File Data, Including WPDES Permits for Public Sewage Treatment Plants	2

Table 2 (Continued)

Work Products	Status of Documentation[a]
Project 300-2000: Sanitary Sewer Extension Reviews	
1. 92 Public and 63 Private Sewer Extension Reviews (see listings)	3
2. 8 Letter Reports on Field Delineation of Environmentally Sensitive Lands for Sewer Extension Projects	3 (one example provided)
3. About 904 Meetings/Phone Calls/E-mails Related to Environmentally Sensitive Lands Data and Related Matters Concerning Sewer Extensions, Service Areas, and Other Development or Preservation Projects (also relates to Projects 300-1000 and 300-3000)	2
Project 300-3000: Sewer Service Area Plan Refinements	
1. No Sewer Service Area Plans were completed	4
2. No Amendment Documents for Previous Sewer Service Area Plan (previous efforts can be found at *www.sewrpc.org/SEWRPC/LandUse/SanitarySewerandWaterSupplySer.htm)*	4
3. 26 Special Letter Reports	3 (one example provided)
4. Provision of Data for Environmental Assessments is Routinely Provided as Part of Submittal to WDNR	2
5. Meetings and Other Miscellaneous Activities	2
6. Procedures for Adding Detail to Sewer Service Area Plans Regarding Environmentally Sensitive Lands Changes Are Incorporated into New Reports and Routine Submittal of Supplementary Data with Report Submittal. Will Continue to Refine Procedure	2
Project 300-4000: Regional Water Quality Management Plan Updating and Extension	
1. Continue to Support Subregional Plan Amendment Activities	- -
2. Completed work on the Oak Creek Watershed Restoration Plan *(see www.sewrpc.org/oakcreekwrp)*	4
Project 300-5000: Regional Water Quality Management Plan Update—Groundwater Management Studies	
1. Miscellaneous Activities Related to Water Conservation and the Regional Water Supply Plan – completed the Village of Somers Water Supply Service Area Plan	1

[a] *Status of documentation Categories:*

1—Previously provided to Wisconsin Department of Natural Resources.

2—No specific documentation required.

3—Provided to Wisconsin Department of Natural Resources with this report.

4—See SEWRPC website.

2021 Lake and River Water Quality Management Activities (300-1000–ITEM 3): January 1, 2021 Through December 31, 2021

Lake or River	Activity
Nagawicka Lake	Plan completed and published. Plan was summarized at two public meetings
School Section Lake	Draft plan was completed and submitted for final review by the District and WDNR.
Silver Lake (Washington County)	Plan completed and published.
Oconomowoc River	Upper Oconomowoc River Plan was completed and published. Also assisted the Oconomowoc River Watershed Protection Program to discuss validity of phosphorus and discharge monitoring.
North Lake	Assisted the North Lake Management District, Terra Vigilis, and Carroll University on the fieldwork for the water quality and wave action approved WDNR grant on North Lake. Hosted meetings with aforementioned parties to review proposed sampling sites, methods, and recommend changes to better address study goals.
Fox (Illinois) River	SEWRPC staff continued to work on the report detailing streambank erosion assessment and nonpoint source pollutant loading prioritization in the Fox River watershed for the SEWFRC. This work is based on field inspection of the lower 26 miles (from state line to the Waterford Impoundment). In addition to this data, report includes factors influencing pollutant load and delivery to the river (e.g., watershed size and characteristics).
Southeastern Wisconsin Lakes and Rivers	Presented preliminary findings and significance of chloride study at one regional event: 9th Annual Fox River Summit, held as part of the Wisconsin Water Week as an all virtual event. Served on steering committee for the Ozaukee Treasures Network.
Twin Lakes	Continued to work on draft plan.
Comus Lake/Turtle Creek	Continued to collect and interpret data. Provided Lake Comus Protection and Rehabilitation District advice regarding data collection. Completed preliminary draft version of management plan for District review.
Lake Lorraine	Discussed phosphorus and sediment volume reduction using pellet study results.
Army and Wandawega Lakes	Coordinated AIS sampling meander surveys on each lake for summer 2021 for Walworth County.
Walworth County Lakes	Served on technical advisory committee for Walworth County Land and Water Resource Management Plan.
Milwaukee Estuary Area of Concern	SEWRPC staff continued to serve on the Milwaukee Estuary Area of Concern (AOC) Fish and Wildlife Technical Advisory Committee.
Ulao Creek	Evaluated future management options with various groups. In coordination with Ozaukee County, developed a detailed water quality evaluation of the portion of the creek directly east of the Village of Grafton.
Lake Michigan Direct Tributaries	Served as an adviser on Schlitz Audubon Nature Center's Conservation Committee.
Ashippun Lake	Assisted in evaluating water quality data.
Delavan Lake	Presented update on Delavan Lake comprehensive management plan and aquatic plant management plan progress at Town of Delavan Lake Committee meeting. Continued to work on the draft comprehensive lake plan and draft aquatic plant management plan.
Geneva Lake	Continued to work on the Lake's tributary streams and recommend strategies to improve stream conditions. Completed aquatic plant inventory. Assisted in development of comprehensive plan scope and surface-water grant request. Evaluated a demonstration area for watershed restoration activities.
Southwick Creek	Participated in meetings discussing stream relocation/habitat restoration
Eagle Spring Lake	Continued to work on the aquatic plant management inventory and management plan update.
Fowler Lake	Developed aquatic management plan update scope of work and assisted with surface-water grant application.
Eagle Spring Lake	Completed aquatic plant inventory, data compilation, and draft aquatic plant management plan.
Whitewater-Rice Lake	Continued to work on the aquatic plant management inventory and management plan update.
Hunters Lake	Provided guidance to the Town of Ottawa, Hunters Lake Association, and others related to the methods of the recreational safety assessment and slow-no-wake recommendations at the junction (i.e., narrows) between the upper and lower portions of this Lake pursuant to the plan published in 1997. The Town of Ottawa is considering voting to establish slow-no-wake buoys at this narrows section to protect both boaters and swimmers, which is consistent with the plan recommendations.

2021 Lake and River Water Quality Management Activities (300-1000–ITEM 3): January 1, 2021 Through December 31, 2021 (Continued)

Lake or River	Activity
Pewaukee River	Assisted the Pewaukee River Partnership to develop signage for their trail system and maps for their outreach events.
Lac La Belle	Helped the District in partnership with WDNR to discuss and develop a sampling scheme for summer 2021.
Friess Lake	Developed a scope of work for an aquatic plant management update and discussed potential future pollutant load prioritization project.

Lake or River	Activity
Camp and Center Lakes	Developed a scope of work for an aquatic plant management update.
Other	SEWRPC assisted UW-Extension Lakes to plan and host the virtual Wisconsin Water Week Convention.
	Worked with the Southeastern Wisconsin Fox River Commission, Southeast Fox River Partnership, and the Fox River Ecosystem Partnership to organize, coordinate, and host the virtual 9th Annual Fox River Summit in March 2021 as part of the Wisconsin Water Week Program in collaboration with UW-Extension and the Wisconsin Association of Lakes.

300-1000
ITEM 4

Southeastern Wisconsin

Regional Planning Commission

Lake and Stream Habitat Classification

Lakes & Rivers Partnership Meeting
November 2nd, 2021

1

Natural Resources Planning at SEWRPC

SEWRPC
Serving the counties of Kenosha, Milwaukee, Ozaukee, Racine, Walworth, Washington, and Waukesha

- Serve seven Counties in southeastern Wisconsin
  - Designated water quality planning agency
- Delineate environmental corridors and wetlands
  - Identify and evaluate the flora and fauna present
- Lake and river management planning
  - Fieldwork, data gathering, and modeling
  - Engage, educate, and coordinate with partners
- Develop regional studies and plans
  - Regional water quality plan, chloride study, and natural areas plan

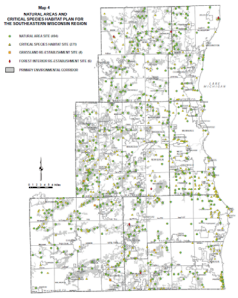
2

Regional Natural Areas Background

- 1989 prospectus report identified three major problems:
  - Loss of significant natural areas
  - Loss of rare, threatened, and endangered species
  - Need to identify and delineate natural areas and critical habitats for rare, threatened, and endangered species
- Purpose is to guide the identification, protection, and management of high-quality natural areas and critical species habitats in Southeastern Wisconsin *"….thus contributing to the maintenance and restoration of the natural beauty of the Region and to the quality of life and the maintenance of biotic diversity within the Region."*
- Original plan published in 1997, designated land and aquatic Natural Areas
  - 2010 amendment only updated land Natural Areas

3

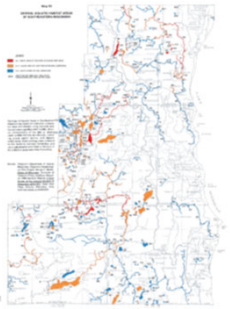
Land Natural Areas: 2010



- 494 natural areas covering 101 square miles
  - Intact native plant and animal communities
  - Representative of pre-European settlement
- Land natural area rankings
  - NA-1: Statewide or greater significance
  - NA-2: Countywide or regional significance
  - NA-3: Local significance
- Factors in ranking
  - Natural communities present and their rarity
  - Structural and ecological integrity
  - Extent of human disturbance
  - Biodiversity

4

Aquatic Natural Areas: 1997

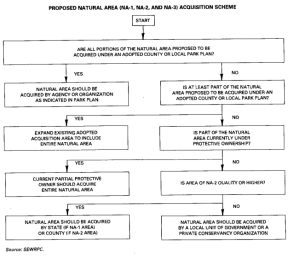


- Stream ranking elements
  - Water quality, morphology, connectivity, fisheries, critical species, riparian buffer
- Lake ranking elements
  - Trophic state, surface area, connectivity, fisheries, critical species, riparian buffer
- 118 Critical Stream Reaches
  - Bark, Fox, Milwaukee, Mukwonago, and Oconomowoc
- 148 Critical Lakes
  - Beulah, Big Cedar, Nagawicka, and Phantom lakes

5

Protecting Designated Natural Areas: 1997 Plan

- Land Natural Areas
  - Identified Natural Areas already protected
  - Proposed acquisition scheme using Natural Area ranking as priority
  - Proposed acquisition agency for each designated Natural Area
    - State, Counties, municipalities, non-profits
- Aquatic Natural Areas
  - Under directory authority of WDNR
  - Designation used in management plans and grant applications



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Updating the Aquatic Natural Areas

- 2010 amendment did not include update to aquatic Natural Areas
- Since 1997 publication, several surveys, models, and metrics more widely used:
  - Lake and stream natural community model
  - Floristic quality assessment, Nichols 1999
  - Aquatic plant point-intercept protocol, Hauxwell et al. 2010
  - Macrophyte bioassessment, Mikulyuk et al. 2017
  - Biotic index for macroinvertebrates, Hilsenhoff et al. 1987
  - Macroinvertebrate index of biotic integrity, Weigel et al. 2003
  - Fisheries indices of biotic integrity, Lyons et al. 1992 – 2012
  - Fishery classification of Wisconsin lakes, Rypel et al. 2019

7

Draft Updated Lake Ranking Scheme

Score (≤100) = Morphology and Classification (≤10) + Water Quality (≤10) + Macrophytes (≤20) + Shoreline Buffer (≤10) + Connectivity (≤10) + Fisheries (≤25) + Natural Heritage Inventory Listings (≤15)

Scheme Elements	Data or Indices	Associated Data Sources
Morphology and Classification	Size Maximum Depth Lake Classification[a]	Wisconsin Department of Natural Resource (WDNR) Register of Waterbodies (ROW); WDNR Surface Water Data Viewer (SWDV)[b]
Water Quality	303(d) Impairment Listing Outstanding and Exceptional Resource Waters	SWDV
Fish	Lake fishery classification Species richness Presence of common carp	Data from Rypel et al., 2019[c] WDNR Fisheries Database
Aquatic Plants	Mean Coefficient of Conservatism[d] Species richness Percent invaded Macrophyte bioassessment[e]	WDNR Aquatic Plant Point-Intercept Database
Shoreline Buffer	Percent of shoreline buffered	SEWRPC Land Use Geodatabase
Connectivity	Number of connected natural areas Acreage of connected natural areas	Self-referential
Natural Heritage Inventory (NHI) Listings	Observations of Special Concern (SC), Threatened (THR), or Endangered (END) species	NHI Database[f]

8

Draft Updated Stream Ranking Scheme

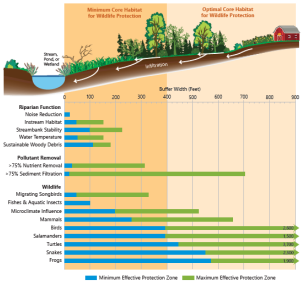
Score (≤100) = Morphology, Modification, and Classification (≤10) + Water Quality (≤10) + Macroinvertebrates (≤20) + Riparian Buffer (≤10) + Connectivity (≤10) + Fisheries (≤25) + Natural Heritage Inventory Listings (≤15)

Scheme Elements	Data or Indices	Associated Data Sources
Morphology, Modification, and Classification	Passage barriers (dams, culverts, roads) Sinuosity Stream Natural Community Model[g]	SEWRPC Land Use; SEWRPC Hydrology Geodatabase; SWDV
Water Quality	303(d) Impairment Listing Outstanding and Exceptional Resource Waters	SWDV
Macroinvertebrates	Hilsenhoff's Biotic Index[h] Species richness	SWDV; WDNR Surface Water Integrated Monitoring System (SWIMS)[i]
Riparian Buffers	Percent of reach buffered	SEWRPC Land Use Geodatabase
Connectivity	Number of connected natural areas Acreage of connected natural areas	Self-referential
Fish	Fish Indices of Biotic Integrity[j] Species richness Trout streams	SWDV; WDNR Fisheries Database
Natural Heritage Inventory (NHI) Listings	Observations of Special Concern (SC), Threatened (THR), or Endangered (END) species	NHI Database

9

Protecting Aquatic Natural Areas: Goals

- Meet WDNR-designated water quality standards
- Minimize spread of invasive species
- 75 percent of lake shoreline with buffer/shoreline habitat
- Minimum 75-foot riparian buffer along entire streamline for water quality
- 400 to 1,000-foot buffers for core habitat and wildlife protection



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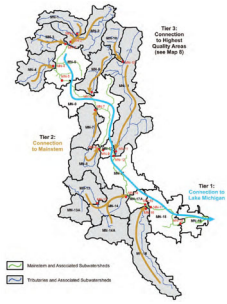
Protecting Aquatic Natural Areas: Strategies



- Incorporate protection for aquatic Natural Areas in County and municipal development plans
  - Comprehensive, land and water, park and open space
- Implement three-tier stream prioritization strategy to enhance aquatic organism passage
- Develop protection profiles for high-ranking aquatic Natural Areas
- Emphasize connection with environmental corridors and land Natural Areas

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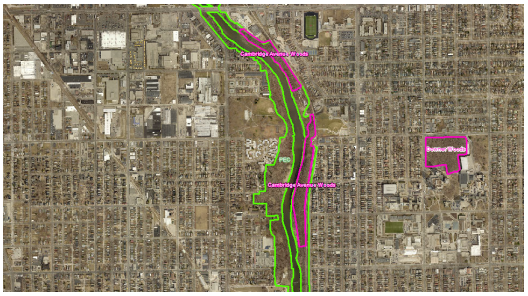
Example Protection Profile: Nagawicka Lake

- Natural Area Profile:
  - 981-acre lake in central Waukesha County
  - Designated two-story fishery but not functioning as one
  - Healthy aquatic plant community
  - Highly developed shoreland area
  - Northern kettle surrounded by NA-2 Bog and Oak Woods
  - Hosts several rare species
- Protection Priorities:
  - Ensure complete protection of adjoining NA-2
  - Achieve 75 percent of shoreline with buffer
  - Consider restoring two-story functionality via cisco (*Coregonus artedi*) reintroduction

12

Environmental Corridor Connection



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Environmental Corridor Connection

- Land Natural Areas often seated within Environmental Corridors
  - Connect Natural Areas to local parks, neighborhoods, and recreational pathways
  - Provide the matrix through which plants and animals can disperse to new habitat
- Improvement and expansion of the corridor can benefit land and aquatic Natural Areas as well as critical species habitat
- May also improve recreational value and access for local communities

14

Thank You

Justin Poinsatte | Senior Specialist – Biologist

jpoinsatte@sewrpc.org | 262.953.3230

SEWRPC.org /SEWRPC @SEW_RPC

15

300-2000
ITEM 1

Letter Requests

-Search options

Number of records found: 63.

Number	Civil Division	County	Date Received	Date Answered	Location
PSC Requests					
PSC-2021-001	Village of Sturtevant	Racine	12/2/2020	1/19/2021	Project M, (1) Guardhouse 03, 22, 21-2 Northwest of Venice Avenue and Enterprise Road
PSC-2021-002	Village of Somers	Kenosha	12/28/2020	1/29/2021	Somers Market Retail Building II 02, 22, 27-1 Southeast of Market Lane and 400 feet northwest of Green Bay Road/STH 31 and 38th Street
PSC-2021-003	City of Mequon	Ozaukee	1/5/2021	2/22/2021	Ascension Mequon Clinic 09, 22, 07-4 Northwest of Highland and N. Port Washington Roads
PSC-2021-004	Village of Bristol	Kenosha	12/31/2020	2/12/2021	Bristol Business Park, (6) Warehouse Buildings 01, 21, 23-4 Northwest of CTH Q and CTH U
PSC-2021-005	City of Waukesha	Waukesha	2/5/2021	2/18/2021	Waukesha Water Utility, (1) Booster Pumping Station and (1) Future Park Building 06, 19, 01-4 2010 E. Broadway
PSC-2021-006	Village of Mt. Pleasant	Racine	2/16/2021	2/23/2021	Quarry Lake Park (Racine County), (1) Beach House and Lift Station 03, 23, 06-4 3533 Northwestern Avenue
PSC-2021-007	City of Waukesha	Waukesha	1/12/2021	4/1/2021	The Village at Fox River, a Multi-family Residential Development 06, 19, 17-4 Southwest of Les Paul Parkway (STH 59) and River Valley Road
PSC-2021-008	City of Pewaukee	Waukesha	1/15/2021	3/30/2021	The Waters of Pewaukee, (1) 130-Unit Senior Living Facility and (15) Duplex Cottages 07, 19, 14-3 W239 N2492 Pewaukee Road
PSC-2021-009	City of Oak Creek	Milwaukee	2/10/2021	3/23/2021	I-94 Industrial Building 05, 22, 19-4 9141 S.13th Street
PSC-2021-010	City of Waukesha	Waukesha	2/23/2021	4/20/2021	Standing Stone, (9) 4-Unit Condominiums 06, 19, 14-2 600 feet northeast of E. Rivera Drive and Big Bend Road 06, 19, 14-3
PSC-2021-011	City of Waukesha	Waukesha	2/23/2021	4/15/2021	Aspen Overlook, (9) 4-Unit Condominiums (Buildings 1-9) 06, 19, 14-2 West of Tenny Avenue and east of E. Garfield Avenue and Big Bend Road
PSC-2021-012	City of Kenosha	Kenosha	2/23/2021	4/29/2021	Northpoint 750 Spec Building 02, 22, 28-3 Southeast of 88th Avenue (CTH H) and 38th Street (CTH S)
PSC-2021-013	Village of Mt. Pleasant	Racine	2/24/2021	4/30/2021	Enterprise Business Park (Buildings V and VI) 03, 22, 20-3 Northeast of Durand Avenue (STH 11) and International Drive
PSC-2021-014	Village of Hartland	Waukesha	2/22/2021	4/29/2021	Sandhill, (33) Two-family and (11) Four-family Residential Buildings 08, 18, 25-4 North of Windrush Boulevard and Lisbon Road (CTH K)
PSC-2021-015	Village of Caledonia	Racine	2/26/2021	5/14/2021	DeBack Farms - Pad F, (1) Building 04, 22, 30-1 North of Adams Road and 2,500 feet east of E. Frontage Road
PSC-2021-016	Village of Pleasant Prairie	Kenosha	3/12/2021	4/23/2021	Seasons at River View 01, 22, 07-1 West of 104th Avenue and 77th Street
PSC-2021-017	Village of Mt. Pleasant	Racine	3/4/2021	4/27/2021	Seasons at Mount Pleasant, (1) Garage, (1) Clubhouse, and (14) Apartment Buildings 03, 22, 35-1 Southwest of Braun Road and S. Green Bay Road (STH 31)

Number	Civil Division	County	Date Received	Date Answered	Location
PSC-2021-018	City of New Berlin	Waukesha	3/29/2021	4/29/2021	Lincoln Avenue Industrial, (2) Buildings 06, 20, 04-4 1,200 feet west of W. Lincoln Avenue and S. 179th Street
PSC-2021-019	City of Elkhorn	Walworth	3/30/2021	4/27/2021	Harvest Pointe Condominiums, (3) Two-family Buildings 03, 17, 30-3 East of N. Wisconsin Street (STH 67) between Market Street and Harvest Way
PSC-2021-020	City of Port Washington	Ozaukee	3/30/2021	4/30/2021	Hidden Hills - Phase 2, (1) 3-Story, 35-Unit Apartment and (2) 2-Unit Condominium Buildings 11, 22, 30-4 Northeast of W. Grand Avenue (STH 33) and Sweetwater Boulevard
PSC-2021-021	City of West Bend	Washington	4/27/2021	5/18/2021	West Bend Mixed-use, (2) Buildings 11, 19, 11-4 415 and 445-447 N. Main Street
PSC-2021-022	City of Mequon	Ozaukee	4/6/2021	4/30/2021	Wilson Elementary School, (1) Building Addition 09, 21, 27-1 South of Balsam Tree Court and Steffen Drive
PSC-2021-023	City of Oconomowoc	Waukesha	4/23/2021	5/7/2021	Prairie Creek Ridge Addition #5, (1) Clubhouse, (16) 2-Unit, and (8) 4-Unit 08, 17, 27-1 Southwest of Whalen Drive and Fay Lane
PSC-2021-024	Village of Menomonee Falls	Waukesha	3/22/2021	5/18/2021	The Creekwood Residences, (1) Clubhouse and (20) 6-Unit Buildings 08, 20, 33-1 Southeast of Silver Spring Drive (CTH VV) and Mary Road
PSC-2021-025	City of Delavan	Walworth	5/14/2021	6/8/2021	PPS Prop Shaft Supply Incorporated, Building Alterations with (1) Addition 02, 16, 09-4 2153 Hobbs Drive
PSC-2021-026	Village of Lannon	Waukesha	8/9/2021	10/1/2021	Rock Pointe Village 08, 20, 17-1 Southeast of Custer Lane and Main Street (CTH F)
PSC-2021-027	City of Oconomowoc	Waukesha	5/14/2021	6/10/2021	Olympia Fields, (1) Auxiliary Building and (6) Multi-family Buildings 07, 17, 10-2 1,500 feet northwest of Summit Avenue and Pabst Road
PSC-2021-028	City of Racine	Racine	5/18/2021	6/8/2021	Porters 03, 23, 09-4 301 6th Street
PSC-2021-029	City of Wauwatosa	Milwaukee	5/18/2021	6/8/2021	Le Bon Vivant 07, 21, 15-2 Northwest of N. 74th Street and W. Wright Street
PSC-2021-030	City of Hartford	Washington	5/25/2021	6/10/2021	Festival Foods/Multi-tenant Retail Building 10, 18, 22-3 Northwest of Schauer Drive and Novak Street
PSC-2021-031	City of Kenosha	Kenosha	5/26/2021	6/8/2021	Commerce 94, (1) Industrial Warehouse Facility 02, 22, 30-4 South of 38th Street and 4,000 feet east of I-94
PSC-2021-032	City of Brookfield	Waukesha	5/25/2021	6/10/2021	Sikh Religious Society of Wisconsin, (1) Existing Temple 07, 20, 09-1 3675 N. Calhoun Road
PSC-2021-033	City of Brookfield	Waukesha	5/27/2021	6/10/2021	The Ruby, (2) Buildings - Brookfield Square 07, 20, 34-1 355 S. Moorland Road
PSC-2021-034	Village of Paddock Lake	Kenosha	6/4/2021	6/18/2021	Paddock Lake - Commercial Development, (3) Lots 01, 20, 10-1 Northwest of Antioch Road (STH 83) and 77th Street
PSC-2021-035	City of Oconomowoc	Waukesha	6/4/2021	6/29/2021	Jiffy Lube 07, 17, 10-4 550 feet southeast of Summit Avenue (STH 67) and Oconomowoc Parkway
PSC-2021-036	Village of Caledonia	Racine	6/21/2021	7/12/2021	Waters Edge Place 04, 23, 21-1 5919 Erie Street
PSC-2021-037	Village of Somers	Kenosha	3/29/2021	7/22/2021	Kwik Trip Convenience Store and Car Wash with Future Development 02, 22, 19-3 Northwest of 113th Avenue and proposed 28th Street
PSC-2021-038	Village of Bristol	Kenosha	5/18/2021	7/30/2021	Bristol Commons 01, 21, 12-2 South of 130th Avenue and 75th Street (STH 50) 01, 21, 12-3
PSC-2021-039	Village of Germantown	Washington	8/3/2021	8/19/2021	Capstone 41, (1) Industrial Building 09, 20, 18-1 South of Holy Hill Road and 1,000 feet east of 48th Street 09, 20, 18-2

Number	Civil Division	County	Date Received	Date Answered	Location
PSC-2021-040	Village of Menomonee Falls	Waukesha	7/23/2021	8/19/2021	Amato-Hyundai, (1) Commercial Building 08, 20, 12-4 North of Leon Road and 750 feet west of N. 124th Street (STH 145)
PSC-2021-041	Village of Darien	Walworth	7/28/2021	8/4/2021	Kwik Trip Convenience Store 02, 15, 28-1 500 N. Walworth Street (Southwest of Badger Parkway and Walworth Street)
PSC-2021-042	Village of Menomonee Falls	Waukesha	7/21/2021	8/19/2021	Tailored Label Products, (1) Industrial Building 08, 20, 24-1 N72 W12565 Good Hope Road
PSC-2021-043	Village of Greendale	Milwaukee	8/9/2021	8/19/2021	Starbucks 06, 21, 28-4 5201 S. 76th Street (Northeast corner)
PSC-2021-044	Village of Pleasant Prairie	Kenosha	8/20/2021	9/2/2021	Kwik Trip Convenience Store 01, 22, 05-4 Northwest of 75th Street (STH 50) and 88th Avenue (CTH H)
PSC-2021-045	Village of Caledonia	Racine	8/24/2021	9/10/2021	DeBack Farms - Phase II, (1) Building 04, 22, 30-1 1,000 feet northeast of Adams Road and Carol Road 04, 22, 30-2
PSC-2021-046	City of Waukesha	Waukesha	8/26/2021	9/10/2021	Silvernail Townhomes 07, 19, 29-1 South of Silvernail Road and 250 feet north of Welsh Court and 500 feet northwest of N. University Drive
PSC-2021-047	Village of Salem	Kenosha	8/27/2021	9/10/2021	Vonco Products, LLC, (1) Building Addition 01, 20, 27-1 10826 250th Avenue (Location is in Village of Salem Lakes)
PSC-2021-048	Village of Mt. Pleasant	Racine	9/1/2021	9/20/2021	Scooter's (Coffee), (1) Building 03, 22, 14-2 North of Washington Avenue (STH 20) and 275 feet east of Prairie Drive
PSC-2021-049	Village of Paddock Lake	Kenosha	9/1/2021	9/20/2021	Scooter's (Coffee), (1) Building 01, 20, 11-2 Southeast of 75th Street (STH 50) and 242nd Avenue
PSC-2021-050	Village of Somers	Kenosha	7/23/2021	10/5/2021	Savannah at Pike Creek 02, 22, 15-4 Northwest of Green Bay Road and 18th Street
PSC-2021-051	Village of Somers	Kenosha	9/8/2021	9/22/2021	Becknell Somers Building #1 At I-94 02, 22, 19-2 East of 120th Avenue and 3,500 feet north of Burlington Road (STH 142)
PSC-2021-052	Village of Menomonee Falls	Waukesha	9/20/2021	10/11/2021	Warren Street Industrial, LLC, (1) Existing Building with proposed Addition 08, 20, 01-3 Northeast of Lilly Road and Warren Street
PSC-2021-053	City of Muskego	Waukesha	9/22/2021	10/5/2021	Stair Crest Muskego Senior Housing, (1) CBRF 05, 20, 02-4 Southeast of CTH L and Woodland Place
PSC-2021-054	Village of Mukwonago	Waukesha	9/22/2021	10/12/2021	Goodwill Store & Donation Center 05, 18, 36-3 Southwest of Arrowhead Drive and S. Rochester Street (STH 83)
PSC-2021-055	City of Lake Geneva	Walworth	9/22/2021	10/14/2021	(1) Kwik Trip Convenience Store and (1) Car Wash 01, 17, 01-1 Southwest of E. Townline Road and S. Wells Street
PSC-2021-056	City of Waukesha	Waukesha	9/22/2021	10/25/2021	Kwik Trip Convenience Store with attached Car Wash 06, 19, 17-4 Southwest of Elkhart Drive and Les Paul Parkway (STH 59)
PSC-2021-057	City of Oak Creek	Milwaukee	7/27/2021	11/8/2021	Lakeshore Commons, Single-family and Multi-family Buildings 05, 22, 24-3 4001 Lake Vista Parkway (Letter dated 10/11/21 was revised 11/8/21 per WDNR)
PSC-2021-058	Village of West Milwaukee	Milwaukee	12/9/2021	12/22/2021	Scooter's (Coffee), (1) Building 06, 21, 01-3 2712 S. Miller Parkway
PSC-2021-059	City of Kenosha	Kenosha	10/21/2021	10/28/2021	Kenosha Uptown Lofts, (2) Buildings 01, 22, 01-1 6204 22nd Avenue and 6117 23rd Avenue
PSC-2021-060	City of Greenfield	Milwaukee	10/11/2021	11/11/2021	Church and Chapel, (1) Building 06, 21, 24-3 4200 W. Layton Avenue
PSC-2021-061	Village of Waterford	Racine	10/18/2021	11/11/2021	Waterford Lofts Phase 1, (1) Multi-family Building 04, 19, 35-4 408 E. Main Street

Number	Civil Division	County	Date Received	Date Answered	Location
PSC-2021-062	City of Greenfield	Milwaukee	10/22/2021	12/20/2021	Greatlife - Greenfield 06, 21, 30-2 11940 W. Edgerton Avenue
PSC-2021-063	Village of West Milwaukee	Milwaukee	12/9/2021	12/22/2021	Taco Johns, (1) Restaurant Building 06, 21, 01-3 2712 S. Miller Parkway

Letter Requests

-Search options

Number of records found: 92.

Number	Civil Division	County	Date Received	Date Answered	Location
SSE Requests					
SSE-001-21	City of Waukesha	Waukesha	12/22/2020	1/12/2021	Existing Pebble Valley Pump Station (Upgrade) 07, 19, 28-2 07, 19, 29-1
SSE-002-21	City of Muskego	Waukesha	12/8/2020	1/12/2021	Crowbar Development, (1) Existing and (4) Proposed Single-family Residential Homes 05, 20, 31-3
SSE-003-21	Village of Mt. Pleasant	Racine	12/10/2020	1/21/2021	Business Park West - TID 4, Phase 3A 03, 22, 18-3 03, 22, 19-1
SSE-004-21	Town of Delavan	Walworth	12/23/2020	1/19/2021	Pinno Development - Office/Mini Storage 02, 16, 22-4 02, 16, 23-3
SSE-005-21	City of Milwaukee	Milwaukee	12/18/2020	1/19/2021	10232 W. River Ridge Drive Development - 80' of Gravity Sewer 08, 21, 08-2
SSE-006-21	Village of Lannon	Waukesha	12/24/2020	1/29/2021	OverStone Condominiums - P3 Development 08, 20, 17-2
SSE-007-21	Village of Bristol	Kenosha	12/31/2020	2/12/2021	Bristol Business Park (6) Warehouse Buildings 01, 21, 23-4 01, 21, 24-3
SSE-008-21	City of Waukesha	Waukesha	2/5/2021	2/18/2021	Waukesha Water Utility Booster Pumping Station (Lake Michigan Water Supply) 06, 19, 01-4
SSE-009-21	City of Lake Geneva	Walworth	1/4/2021	2/23/2021	Vistas of Lake Geneva, (58) Lots served by proposed/existing sewer 02, 17, 26-4
SSE-010-21	City of Waukesha	Waukesha	1/12/2021	4/1/2021	The Village at Fox River - Multi-family Residential 06, 19, 17-4
SSE-011-21	Village of Somers	Kenosha	1/8/2021	3/9/2021	First Park 94 - 3570.6' of Gravity Sewer in 84th Street 02, 22, 21-3
SSE-012-21	Village of Somers	Kenosha	1/8/2021	7/2/2021	Public Force Main and Sewers West of the Subcontinental Divide (Facility Expansion Project) 02, 22, 18-1 02, 22, 21-2
SSE-013-21	Village of Somers	Kenosha	1/8/2021	7/2/2021	Lift Station 1A, Public Force Main, and Gravity Sewer (Facility Expansion Project) 02, 22, 19-2
SSE-014-21	City of Pewaukee	Waukesha	1/15/2021	3/30/2021	The Waters of Pewaukee, (1) 130 Unit Senior Living Facility and (15) Duplex Cottages 07, 19, 14-3
SSE-015-21	City of Port Washington	Ozaukee	2/12/2021	3/23/2021	Hidden Hills North, (31) Single-family Lots and (7) Two-family Buildings on 1 Lot 11, 22, 30-1 (This SSE replaces SSE 035-18)
SSE-016-21	City of Brookfield	Waukesha	2/4/2021	3/23/2021	Red Road Estates, (23) Single-family Lots 07, 20, 18-2
SSE-017-21	Village of East Troy	Walworth	2/18/2021	3/26/2021	Existing Force Main Abandonment and 803' of proposed Gravity Sewer 04, 18, 20-1 04, 18, 21-2
SSE-018-21	Village of Menomonee Falls	Waukesha	3/23/2021	3/30/2021	Sommersfield Subdivision, (29) Single-family Lots 08, 20, 28-2 08, 20, 28-3
SSE-019-21	City of Muskego	Waukesha	2/24/2021	4/6/2021	The Glen at Muskego Lakes, (14) 2-Unit, (13) 4-Unit, and (1) Clubhouse 05, 20, 26-1 05, 20, 25-3
SSE-020-21	City of Franklin	Milwaukee	2/11/2021	4/9/2021	Pleasant View Reserve, (53) Single-family Lots 05, 21, 11-1 05, 21, 11-4

Number	Civil Division	County	Date Received	Date Answered	Location
SSE-021-21	City of Delavan	Walworth	2/22/2021	4/9/2021	Public Force Main Extension 02, 15, 13-1 02, 15, 13-4
SSE-022-21	City of Racine	Racine	2/17/2021	4/12/2021	North Beach Lift Station 03, 23, 09-1
SSE-023-21	City of Waukesha	Waukesha	2/12/2021	4/13/2021	Skyline, a Single-family Subdivision 07, 19, 31-1 07, 19, 31-4
SSE-024-21	Village of Menomonee Falls	Waukesha	2/22/2021	4/15/2021	The Sanctuary at Prairie Walk 08, 20, 28-4
SSE-025-21	City of Pewaukee	Waukesha	2/12/2021	4/15/2021	Greenland, a Single-family Subdivision 07, 19, 16-4
SSE-026-21	City of Kenosha	Kenosha	2/23/2021	4/29/2021	Northpoint 750 Spec Building 02, 22, 28-3
SSE-027-21	Village of East Troy	Walworth	3/30/2021	4/16/2021	East Troy Business Park, 1,520' of Gravity Sewer in Executive Drive 04, 18, 32-2
SSE-028-21	City of Pewaukee	Waukesha	2/19/2021	4/9/2021	Joseph Road Reconstruction 07, 19, 13-3
SSE-029-21	City of Waukesha	Waukesha	2/23/2021	4/20/2021	Standing Stone, a Residential Development 06, 19, 14-2 06, 19, 14-3
SSE-030-21	Village of Mt. Pleasant	Racine	2/24/2021	4/30/2021	Enterprise Way, 1,020' Public Gravity Sewer 03, 22, 20-3
SSE-031-21	Village of Pewaukee	Waukesha	2/22/2021	4/20/2021	321 Riverside, (36) Single-family Lots 07, 19, 15-2 07, 19, 16-1
SSE-032-21	Village of Sussex	Waukesha	3/4/2021	4/23/2021	Vista Run - Phase 1, (42) Single-family Lots, (29) Duplex Condominiums, (9) 2-Unit Townhomes, (1) Private Clubhouse 08, 19, 21-3 08, 19, 21-4
SSE-033-21	Village of Pleasant Prairie	Kenosha	3/12/2021	4/23/2021	Seasons at River View, (1) Clubhouse and (16) Apartment Buildings 01, 22, 07-1
SSE-034-21	Village of Mt. Pleasant	Racine	3/4/2021	4/27/2021	Seasons at Mount Pleasant, (1) Garage, (1) Clubhouse, and (14) Apartment Buildings 03, 22, 35-1
SSE-035-21	City of New Berlin	Waukesha	3/29/2021	4/29/2021	Lincoln Avenue Industrial, (2) Buildings 06, 20, 04-4
SSE-036-21	City of Elkhorn	Walworth	3/30/2021	4/27/2021	Harvest Pointe Condominiums, (14) Two-family Buildings 03, 17, 30-3
SSE-037-21	City of Oconomowoc	Waukesha	4/2/2021	4/27/2021	Olympia Fields, a Multi-use Redevelopment - Commercial with Multi-family Residences 07, 17, 10-2
SSE-038-21	City of Cedarburg	Ozaukee	4/2/2021	5/7/2021	Fairway Village, 113 Residential Lots, (83) Single-family and (15) Two-family Buildings 10, 21, 22-2
SSE-039-21	City of Waukesha	Waukesha	4/9/2021	6/4/2021	Prairie Song Courtyards, (3) 4-Unit and (2) 6-Unit Condominiums 07, 19, 31-4 (From prior PSC-19-075)
SSE-040-21	Village of Menomonee Falls	Waukesha	4/13/2021	5/4/2021	The Glen at Wanaki, (52) Single-family Lots 08, 20, 31-3
SSE-041-21	City of Oconomowoc	Waukesha	4/13/2021	5/4/2021	Morgan Station, (47) Single-family Lots 07, 17, 07-3
SSE-042-21	City of Oconomowoc	Waukesha	4/23/2021	5/7/2021	Prairie Creek Ridge Addition #5, (1) Clubhouse, (16) 2-Unit, and (8) 4-Unit Residential Buildings 08, 17, 27-1
SSE-043-21	City of South Milwaukee	Milwaukee	3/24/2021	5/19/2021	Ravine Lift Station, Force Main, and Gravity Sewer Replacement 05, 22, 12-2 05, 22, 12-3
SSE-044-21	Village of Waterford	Racine	3/25/2021	5/11/2021	Park Villas Phase 2 Condominiums 04, 19, 27-4
SSE-045-21	Village of Menomonee Falls	Waukesha	3/22/2021	5/18/2021	The Creekwood Residences 08, 20, 33-1
SSE-046-21	City of Muskego	Waukesha	3/22/2021	5/21/2021	Mallard Pointe, (45) Single-family Lots 05, 20, 13-3 05, 20, 13-4
SSE-047-21	Village of Sussex	Waukesha	5/5/2021	6/8/2021	Highlands Business Park A (Site I and Site II) 08, 19, 33-1

Number	Civil Division	County	Date Received	Date Answered	Location
SSE-048-21	Village of Caledonia	Racine	4/28/2021	5/14/2021	DeBack Industrial Park Phase 3 Utility Improvements 04, 22, 19-4 04, 22, 30-2
SSE-049-21	Village of Saukville	Ozaukee	5/6/2021	5/18/2021	Existing Single-family Home, 67' of Gravity Sewer 11, 21, 26-3
SSE-050-21	Village of Caledonia	Racine	5/3/2021	5/27/2021	Existing Dominican Lift Station Upgrade and new Force Main and Gravity Sewer 04, 23, 21-1
SSE-051-21	City of Delavan	Walworth	5/15/2021	5/25/2021	Harbor Club at Lake Lawn 02, 16, 15-3 02, 16, 16-4
SSE-052-21	City of Delafield	Waukesha	5/14/2021	8/4/2021	Hawthorn Farm Property 07, 18, 06-2 07, 18, 06-3
SSE-053-21	Village of Union Grove	Racine	5/13/2021	6/10/2021	Single-family Development 03, 21, 32-4
SSE-054-21	Village of Germantown	Washington	5/14/2021	8/5/2021	Wrenwood North, Phase 1 and 2, a Single-family Development 09, 20, 23-1 09, 20, 23-2
SSE-055-21	City of Brookfield	Waukesha	5/25/2021	6/10/2021	Sikh Religious Society of Wisconsin (Existing Temple) 07, 20, 09-1
SSE-056-21	Village of Mt. Pleasant	Racine	5/18/2021	6/10/2021	Christina Estates Addition #1 03, 22, 12-3
SSE-057-21	Village of Paddock Lake	Kenosha	6/4/2021	6/18/2021	Paddock Lake - Commercial Development, (3) Lots 01, 20, 10-1
SSE-058-21	City of Oconomowoc	Waukesha	6/4/2021	6/29/2021	Jiffy Lube 07, 17, 10-4
SSE-059-21	Village of Caledonia	Racine	6/21/2021	7/12/2021	Waters Edge Place 04, 23, 21-1
SSE-060-21	Village of Fredonia	Ozaukee	6/24/2021	6/29/2021	Village Green - Phase 3 12, 21, 26-1 12, 21, 26-2
SSE-061-21	City of Cedarburg	Ozaukee	6/11/2021	6/29/2021	Hidden Grove Development 10, 21, 22-4
SSE-062-21	Village of Wind Lake	Racine	6/24/2021	7/12/2021	4403 N. Main Street, (4) Single-family Lots 04, 23, 28-4
SSE-063-21	Village of Somers	Kenosha	3/29/2021	7/22/2021	(1) Kwik Trip Convenience Store and adjacent Future Development 02, 22, 19-3
SSE-064-21	Village of Jackson	Washington	6/24/2021	7/16/2021	Caymus Court, Northwest Business Park - Phase 7 10, 20, 18-2 10, 20, 18-3
SSE-065-21	Village of Germantown	Washington	6/29/2021	7/16/2021	Holy Hill Road, 2,200' Gravity Sewer Extension 09, 20, 07-4
SSE-066-21	Village of Mt. Pleasant	Racine	7/2/2021	7/20/2021	Carriage Hill Drive (former Lots 8 and 9 of The Orchard Estates Subdivision) 02, 22, 19-3
SSE-067-21	Village of Bristol	Kenosha	5/18/2021	7/30/2021	Bristol Commons 01, 21, 12-2 01, 21, 12-3
SSE-068-21	Village of Bloomfield	Walworth	7/14/2021	7/27/2021	Palm Pointe Subdivision, (1) Single-family Lot 01, 18, 22-3
SSE-069-21	Village of Sussex	Waukesha	7/7/2021	7/20/2021	Highlands B, (Sites II, X, and XI) 08, 19, 33-1
SSE-070-21	Village of Pleasant Prairie	Kenosha	7/14/2021	7/16/2021	Midwest Highlands, (2) Sewer Relays 01, 22, 11-2
SSE-071-21	Village of Fredonia	Ozaukee	8/3/2021	8/19/2021	Fredonia Business Park Phase 1 12, 21, 35-4
SSE-072-21	Village of Pewaukee	Waukesha	7/12/2021	8/19/2021	The Glen at Pewaukee Lake, (1) Clubhouse and (46) Condominium Buildings 07, 19, 08-1 (SSE 072-21 replaces SSE 026-19 letter.)
SSE-073-21	Village of Somers	Kenosha	11/10/2020	9/20/2021	Pritzker Military Archives Center 02, 22, 17-2 02, 22, 18-1 (This letter was not finished until public sewer extensions to serve the site were requested and approved.)
SSE-074-21	Village of Somers	Kenosha	7/23/2021	10/5/2021	Savannah at Pike Creek 02, 22, 15-4

Number	Civil Division	County	Date Received	Date Answered	Location
SSE-075-21	City of Oconomowoc	Waukesha	9/16/2021	11/1/2021	Arrowood Subdivision 07, 17, 05-3 07, 17, 08-2
SSE-076-21	Village of Caledonia	Racine	9/13/2021	9/20/2021	Prairie Pathways - Button Bush 04, 22, 33-2
SSE-077-21	Village of Mukwonago	Waukesha	9/13/2021	10/21/2021	Chapman Farms, a Single-family Subdivision 05, 18, 22-1
SSE-078-21	Village of Lannon	Waukesha	8/26/2021	10/1/2021	Rock Pointe Village, Phase 2 08, 20, 17-1
SSE-079-21	Village of Menomonee Falls	Waukesha	9/20/2021	10/11/2021	Warren Street Industrial, LLC, (1) Existing Building and proposed Building Addition 08, 20, 01-3
SSE-080-21	City of Waukesha	Waukesha	9/30/2021	11/1/2021	Shagbark and Coldwater Creek Drives (Future Commercial/Residential Development) 07, 19, 31-1 07, 19, 31-4
SSE-081-21	City of Oak Creek	Milwaukee	7/27/2021	11/8/2021	Lakeshore Commons - Phase 1, Single-family and Multi-family Buildings 05, 22, 24-3 (10/11/21 Letter was revised on 11/8/21 Per WDNR)
SSE-082-21	Town of Brookfield	Waukesha	9/20/2021	10/25/2021	Brookhill Condominium, (4) Duplexes 07, 20, 28-2
SSE-083-21	Village of Pleasant Prairie	Kenosha	12/3/2021	12/29/2021	The Summit at Bain Station, (9) Duplexes, Lots 1-18 01, 22, 09-3
SSE-084-21	City of Milwaukee	Milwaukee	9/29/2021	11/1/2021	S. 6th Street to S. 8th Street Sewer Extension 06, 22, 08-2
SSE-085-21	Village of Shorewood	Milwaukee	9/29/2021	11/5/2021	E. Edgewood Avenue - Proposed Near Surface Collector 07, 22, 09-1 07, 22, 10-2 (Also serves City of Milwaukee)
SSE-086-21	City of Waukesha	Waukesha	10/6/2021	11/16/2021	Howell Oaks - Phase 6, (33) Single-family Lots (Lots 143-175) 06, 19, 06-2
SSE-087-21	City of Brookfield Village of Menomonee Falls	Waukesha Waukesha	10/8/2021	12/3/2021	Northern Oaks, Single-family 07, 20, 05-2
SSE-089-21	Village of Grafton Town of Cedarburg	Ozaukee Ozaukee	10/15/2021	12/3/2021	Stonewall Farms 10, 21, 14-1 10, 21, 14-4
SSE-090-21	Village of Lannon	Waukesha	8/18/2021	11/23/2021	Stonewood Trail 08, 20, 19-2
SSE-091-21	City of Pewaukee	Waukesha	11/5/2021	12/9/2021	Woodleaf Reserve Phase 5 07, 19, 01-1
SSE-092-21	Village of Mt. Pleasant	Racine	11/11/2021	12/15/2021	The Villas at Coach Hills Condominium, (1) 1-Unit and (9) 2-Unit Condominium Buildings 03, 22, 01-4
SSE-093-21	Village of Mt. Pleasant	Racine	11/11/2021	12/15/2021	Coach Hills Addition No. 2, (11) Single-family Lots, (Lots 49-59) 03, 22, 01-4

300-2000
ITEM 2

COPY

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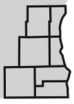

December 15, 2021

Mr. Timothy G. Barbeau, PE, PLS
Zoning Administrator
Village of Raymond
2255 76th Street
Franksville, WI 53126-9539

Re: SEWRPC No. CA-311-59

Dear Mr. Barbeau:

This will respond to your letter of August 28, 2020, requesting that the Commission staff conduct a field inspection of the Mary Kimmel Revocable Trust property comprised of Tax Parcel Numbers 168042112002000 and 168042112005000. The property is located at 3109 West 7 Mile Road in the Northeast one-quarter of U.S. Public Land Survey Section 12, Township 4 North, Range 21 East, Village of Raymond, Racine County, Wisconsin. The purpose of the field inspection was to identify and stake the boundaries of any wetlands contained on the subject property.

Pursuant to your request, Commission staff identified and staked the wetland boundaries contained on the subject property on May 17 and 20, 2021. A copy of the wetland delineation report is attached for your reference.

Please note that the subject property contains a Natural Area of Local Significance (NA-3) known as Kimmel Woods, which is comprised of a unique combination of good-quality Southern dry-mesic forest and hardwood swamp natural communities. The subject Natural Area is included in the December 2010 SEWRPC Amendment to the Natural Areas and Critical Species Habitat Protection and Management Plan for the Southeastern Wisconsin Region. The 2010 plan amendment recommends that consideration is given to protective ownership of the Natural Area lands through acquisition and management by a private conservancy organization, if the property owner and a conservancy organization are so inclined. Should you have any questions regarding this information, please do not hesitate to contact Mr. Christopher J. Jors, Principal Specialist-Biologist (cjors@sewrpc.org or 262-953-3246).

Sincerely,

Kevin J. Muhs, PE, AICP
Executive Director

KJM/TMS/CJJ/ac
#260227 – CA311-59 Mary Kimmel Revocable Trust Property Letter

Enclosure (#260444)

cc: Mr. Alan Jasperson, Jasperson Realty (w/enclosure by email)
Mr. David Rogers, Seno Kenosha/Racine Land Trust (w/enclosure by email)
Mr. Marty Dillenburg, Wisconsin Department of Natural Resources (w/enclosure by email)
Ms. Kara Brooks, Wisconsin Department of Natural Resources (w/enclosure by email)
Mr. Anthony Kitchen, U.S. Army Corps of Engineers (w/enclosure by email)

WETLAND DELINEATION REPORT

MARY E. KIMMEL REVOCABLE TRUST PROPERTIES
3109 WEST 7 MILE ROAD/27th STREET

NE Quarter, Section 12, T4N, R21E
VILLAGE OF RAYMOND
RACINE COUNTY
WISCONSIN

Lead Investigator:

Christopher J. Jors
Principal Specialist-Biologist
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187-1607
(262)547-6721
cjors@sewrpc.org

Report completed: November 24, 2021

WETLAND DELINEATION REPORT OVERVIEW

(Based upon WDNR WETLAND Delineation Confirmation Request Check List)

INTRODUCTION

- Who requested the delineation – **Timothy G. Barbeau, P.E., P.L.S., Zoning Administrator, Village of Raymond**
- Why the delineation was undertaken – **Potential Development**
- Field inspection date(s) – **May 17 and 20, 2021**
- Who conducted field work –**Christopher Jors, Jennifer Dietl, Zachary Kron, and Shane Heyel**
- Statement of Qualifications
- GIS Support – **Bradley Subotnik**

METHODS

- Description of Methods
- Sources Reviewed
  - Racine County Topographic Mapping – **Exhibit 1**
  - Wisconsin Department of Natural Resources (WDNR) Surface Water Data Viewer - Wisconsin Wetland Inventory (WWI) Mapping – **Exhibit 2**
  - Natural Resources Conservation Service (NRCS) Soil Survey and Federal Emergency Management Agency (FEMA) Floodplain Mapping – **Exhibit 3**
  - SEWRPC Historical Aerial Photos – **Exhibits 4A to 4F (2020, 2015, 2010, 2005, 2000, and 1995)**
  - SEWRPC Sanitary Sewer Service Area Mapping – **Exhibit 5**
  - Advance Identification (ADID) Wetland Mapping – **Exhibit 6**
  - NRCS Draft Wetland Inventory Mapping – **Exhibit 7**
  - National Agriculture Imagery Program (NAIP)/Farm Service Agency (FSA) Images – **Not Applicable**
- Description of any site specific agency guidance (site meetings, etc.) – **None**

RESULTS AND DISCUSSION

- Antecedent hydrologic condition analysis – **Drier than normal. Moderate drought (D1) per U.S. Drought Monitor**
- Previous wetland delineation mapping – **None**
- Existing environmental mapping (WWI mapping, Soil survey, etc.)
- Amount and types of wetlands and upland located within the project area
- Wetland/upland boundary explanation
- Disturbed and problematic areas encountered
- Other considerations

LITERATURE CITED

Wetland Delineation Map – **Exhibit 8**

Vegetation Survey, Wetland Delineation Data Forms, and Site Photos

- Preliminary Vegetation Survey – **Exhibit 9**
- Wetland Determination Data Forms – Midwest Region – **Exhibit 10**
- Site Photos – **Exhibit 11**

INTRODUCTION

This wetland delineation report responds to an August 28, 2020, request letter from Timothy G. Barbeau, P.E., P.L.S., Zoning Administrator, Village of Raymond, to identify the boundaries of any wetlands on the Mary E. Kimmel Revocable Trust property. The subject property consists of two adjoining parcels (Tax Key numbers 168042112002000 and 168042112005000) that cover over 30 acres in total. The project area is on the south side of 7 Mile Road and the west side of 27th Street (the IH-94 frontage Road) in the Northeast one-quarter of U.S. Public Land Survey Section 12, Township 4 North, Range 21 East, Village of Raymond, Racine County, Wisconsin.

Statement of Qualifications

Lead Investigator: Christopher Jors, Principal Specialist-Biologist, has worked at SEWRPC since 1993, and has been part of the wetland delineation team since 1994. He received a Bachelor's degree in Biological Aspects of Conservation from the University of Wisconsin – Milwaukee in 1992. Prior to working at SEWRPC, Chris worked at the UWM Field Station at the Cedarburg Bog in Saukville, WI, where he learned methods of sampling wetland plant communities within the Bog. Chris has attended various wetland training workshops including the UW-La Crosse Critical Methods Workshop on March 3, 2021; the UW-La Crosse Basic and Advanced Wetland Delineation Workshops on August 10-15, 2015; a Wisconsin Department of Natural Resources Wetland Delineation & Wetland Rapid Assessment Methodology Workshop on April 23, 2014; and a U.S. Army Corps of Engineers Workshop on the Midwest Supplement to the 1987 Wetland Delineation Manual on February 3, 2009.

Jennifer Dietl, Principal Specialist-Biologist, earned Bachelor's degrees in Biology and Environmental Science from Carroll University in 1992. Jennifer has worked at the Commission from 1992 to 1997 and from 2006 to the present conducting wetland delineations, primary environmental corridor delineations, and vegetation surveys. In between years of service at the Commission, she worked for the Wisconsin Department of Transportation – Green Bay as an LTE Environmental Analysis and Review Specialist – and the Wisconsin Department of Natural Resources – Green Bay as an LTE Hydrologist. Jennifer attended the UW-La Crosse Critical Methods Workshop on March 4, 2020, UW-La Crosse Hydric Soils Workshop on July 19-21, 2017, the UW-La Crosse Basic and Advanced Wetland Delineation Workshops on August 10-15, 2015; and a Wisconsin Dept. of Natural Resources Wetland Delineation & Wetland Rapid Assessment Methodology Workshop on April 23, 2014.

Zachary Kron, Senior Specialist-Biologist, Zach earned a Bachelor's degree in Natural Resource and Environmental Sciences from the University of Illinois Urbana-Champaign in 2008. In 2011, he received a Master's degree in Plant Biology from the University of Illinois Urbana – Champaign. Zach worked for the Illinois Natural History Survey (INHS) as a botanist coauthoring plant ecology articles in peer-reviewed journals and completing vegetation surveys in wetland restorations and natural areas throughout the state. Following his work with the INHS, Zach worked as an ecologist and project manager for restoration contractors in Illinois, Wisconsin, and Ohio. Prior to joining the Commission, Zach served as a Restoration Ecologist / Project Manager for The Nature Conservancy and then with the Wisconsin Department of Natural Resources In-Lieu Fee Wetland Mitigation Program. He has completed the basic and advanced wetland delineation training, hydric soils training, and Wisconsin Natural Heritage Inventory Training.

Shane Heyel, Senior Specialist-Biologist, joined the wetland delineation team at SEWRPC in June 2016. He holds a Bachelor's degree in Land Use Planning from the University of Wisconsin-Stevens Point and a Master's degree in Hydrology & Water Quality from Lancaster University (United Kingdom). Shane worked for the Wisconsin Department of Natural Resources for seven years, including four years regulating waterways and wetlands. With Atkins Limited, U.K. from 2005-2009, he delivered pollution and flood risk assessments to the English Highways Agency and modeled sewer networks to report flood alleviation options for major British water companies. As an independent consultant in Wisconsin, Shane helped develop a site restoration plan for a proposed wetland mitigation bank. His recent wetland training

includes UW-La Crosse Workshops in Basic Wetland Delineation (August 2015), Advanced Wetland Delineation (August (2016), Basic Plant ID (July 2017), Hydric Soils (July 2018), and Critical Methods (March 2020).

METHODS

Description of Methods

The wetland boundary determinations were based upon the criteria and methodologies set forth in the 1987 *Corps of Engineers Wetlands Delineation Manual*; the August 2010 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region* (Version 2.0); the March 4, 2015, *Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources*; and the State of Wisconsin 2018 Wetland Plant List.

Sources Reviewed

Prior to conducting field work, Commission staff reviewed the following data sources that were available and applicable to the project area:

- Racine County's topographic mapping (Exhibit 1)
- WDNR Surface Water Data Viewer - WWI mapping (Exhibit 2)
- NRCS soil survey and FEMA floodplain mapping (Exhibit 3)
- SEWRPC historical aerial photography (Exhibits 4A – 4F)
- SEWRPC sanitary sewer service area mapping (Exhibit 5)
- ADID wetland mapping (Exhibit 6)
- NRCS Draft Wetland Inventory mapping (Exhibit 7)
- Precipitation data from the NRCS "WETS" tables

RESULTS AND DISCUSSION

Christopher Jors, as lead field investigator and report author, supervised and approved all aspects of the wetland delineation in the field, data compilation and analysis, and preparation of this report. Wetland boundaries in the project area were marked with orange wire flags and ribbon on May 17 and 20, 2021. Commission staff used a sub-meter-accuracy global positioning system (GPS) device to record the locations of thirty representative sample sites that were utilized to inform the staked wetland boundaries. Edgewood Surveying, Inc. surveyed the wetland boundary markers and provided a corresponding wetland survey data file.

The results of the wetland delineation field inspection for this project area are shown on Exhibit 8, which includes the field-staked and surveyed wetland boundaries, the GPS-located sample site locations, and the numbered plant community areas.

Please be advised that the western and central portions of the property contain a SEWRPC-designated Natural Area of local significance (NA-3) known as Kimmel Woods. The SEWRPC December 2010 *Amendment to the Natural Areas and Critical Species Habitat Protection and Management Plan for the Southeastern Wisconsin Region* recommends protection of Kimmel Woods through acquisition by a private conservancy organization.

In addition, several State-designated Special Concern and SEWRPC-listed uncommon plant species were observed within Kimmel Woods and the primary environmental corridor (PEC) identified on Exhibit 8. The Special Concern and uncommon plant species are listed in Exhibit 9. Specifically, stands of Slender sedge (*Carex gracilescens*), a State-designated Special Concern species, were observed in the southern end of the project area, immediately adjacent to Kimmel Woods, within the PEC. This area is shown on Exhibit 8 as a proposed Critical Species Habitat.

Antecedent Hydrologic Conditions

Climatological data were taken from the nearest WETS station(s) with complete data for the 1991-2020 climate period and monthly precipitation summaries for the antecedent 90-day observed data. In this case, the Union Grove WWTP station provided long term data while the closer South Milwaukee WWTP station provided the antecedent 90-day data. These data are summarized in the following table as applicable for the site investigation dates:

May 17 and 20, 2021	Month	3 years in 10 Less Than	Normal	3 years in 10 More Than	Observed Precip.	Condition (dry, wet, normal)	Condition Value	Month Weight Value	Product of Previous Two Columns
1st prior month	May	2.51	4.13	4.99	2.34	Dry	1	3	3
2nd prior month	April	2.73	3.51	4.10	1.52	Dry	1	2	2
3rd prior month	March	1.07	2.10	2.45	0.91	Dry	1	1	1
									Sum = 6

If Sum is	
6 - 9	drier than normal
10 - 14	normal
15 - 18	wetter than normal

Conclusion: **Drier than normal**

In addition to the findings summarized above, U.S. Drought Monitor identified the project area as being in a moderate drought (D1) at the time of the site inspections.

Existing Environmental Mapping

The Racine County topographic mapping (Exhibit 1) depicts a project area with rolling topography containing gentle to steep slopes and level to gently undulating riparian lowlands associated with a tributary to the Root River (known as the Kilbournville Tributary) in the western and north-central portions. A small surface water body (excavated pond) is shown in the northcentral portion, south of the existing home site. Elevations in the project area range from a high of 740 feet above the National Geodetic Vertical Datum of 1929 (NGVD 29) atop a ridge in the south-central end to a low "spot elevation" of 687.4 feet above NGVD 29 where the tributary enters a culvert at the northern end.

The WDNR Surface Water Data Viewer - WWI mapping (Exhibit 2) indicates broad-leaved deciduous lowland forest (T3K) wetland along both sides of the Kilbournville tributary. This large wetland is shown to incorporate the excavated pond (W0Hx) identified on Exhibit 1. A separate emergent-wet meadow (E2K) wetland is shown as abutting or extending slightly into the northeastern end of the project area at several points. However, 27th Street appears on the map as a re-aligned IH 94 frontage road that has impacted both wetlands along the northeastern edge of the project area.

Wetland indicators, shown as NRCS-mapped Drummer silt loam (Dt), Matherton loam (MlA), and Navan silt loam (Na) soils, appear strongly correlated with the mapped T3K wetland while the Blount silt loam (BlA) indicator appears in the eastern portion of the project area south of the mapped E2K wetland.

WDNR classifies the Kilbournville Tributary as a 2nd order stream with a coldwater macroinvertebrate community. The waterway was last monitored in 2018, at which time its condition was described as "suspected poor" due to total phosphorus pollutants. The stream is currently not on the State's Section 303(d) list of "impaired waters".

The NRCS Soil Survey map (Exhibit 3) shows the following soils in the project area:

Map Unit Name and Symbol	Slope (%)	Hydric Category	Hydric Percent of Map Unit	Hydric Minor Component, Percent, and landform	Project Area (%)
Blount silt loam (BlA)	1-3	Predominantly Non-hydric	5	Ashkum, 5%, depressions	7.0
Drummer silt loam (Dt)	0-2	Hydric	100	Not Applicable (N/A)	7.2
Fox loam (FrB), clayey substratum	2-6	Non-hydric	0	N/A	12.0
Matherton loam (MlA), clayey substratrum	1-3	Predominantly Non-hydric	5	Aztalan, 5%, depressions	1.8
Navan silt loam (Na)	0-3	Hydric	100	N/A	26.4
Ozaukee silt loam (OzaB)	2-6	Predominantly Non-hydric	6	Ashkum-drained, 0-7%, ground and end moraines; Pewamo-drained, 0-7%, depressions and drainage ways on ground moraines	5.6
Ozaukee silt loam (OzaB2)	2-6, eroded	Predominantly Non-hydric	6	Ashkum-drained, 0-7%, ground and end moraines; Pewamo-drained, 0-7%, depressions and drainage ways on ground moraines	25.5
Ozaukee silt loam (OzaC2)	6-12, eroded	Non-hydric	0	N/A	14.5

Exhibit 3 also indicates FEMA-mapped 1-percent-annual-probability (100-year recurrence interval) floodplain associated with the portion of the Kilbournville tributary in the northern (downstream) portion of the project area only.

Historical aerial photos of the property were reviewed back to 1995 (see following table). Orthophotography for years 2020, 2015, 2010, 2005, 2000, and 1995 are attached (see Exhibits 4A to 4F).

Year	Changes in Land Use Observed on Aerial Photography from 1995 to 2020
1995	Land use in the area consists of agriculture, low density rural residential, and commercial/industrial along the adjacent IH-94 corridor, including the 7-Mile Fair grounds to the north. 7-Mile Road is present as a smaller CTH and 27th Street runs north-south as a frontage road parallel to IH 94 to the east, with an on ramp near the southeast end of the project area. The project area includes a single-family home, woodland, and fallow agricultural fields. Rows of planted conifers are apparent in a small previously cropped field at the south-central end. A tributary to the Root River, known as the Kilbournville Tributary, meanders northward through the wooded western portion of the project area. A small, excavated pond is visible in the northern portion of the project area, south of the home.
2000	Clearing and stream shoreline work is apparent along the Kilbournville Tributary channel at the north end of the project area and to the north of West 7 Mile Road, perhaps related to improvements at the tributary crossing.
2005	A residence and detached garage have been razed on the lot immediately east of the project area residence. Lands immediately to the south of the project area appear to be used for planting rows of nursery stock.
2010	Soils/compost are stockpiled in long berms immediately south of the project area.
2015	7-Mile Road has been reconstructed as a 4-lane divided highway to the north, including installation of a new long-box culvert at the Kilbournville Tributary crossing. 27th Street has been reconstructed as a frontage road in its current-day alignment with the former 27th Street roadway serving as a freeway on-ramp only. Wet roadside ditches are apparent along portions of both roads immediately adjacent to the project area. The soil/composting processing operation south of the project area has been expanded further into lands where nursery stock had been planted.
2020	A small drainage way that flows northerly into the project area is apparent on the composting site to the south.

SEWPRC's sanitary sewer service area mapping (Exhibit 5) indicates the project area lies outside the planned sewer service area for the City of Racine and Environs. The map further depicts the wooded portion of the project area as primary environmental corridor (PEC) incorporating the Kilbournville tributary stream, riparian lands (wetlands/floodplain) and adjacent wooded uplands.

The ADID wetland mapping (Exhibit 6) also indicates the wooded portion of the project area is part of the established Kilbournville tributary PEC. In addition, the map depicts T3K wetland and a small, excavated pond (W0Hx) in the northern portion of the PEC. Accordingly, these wetlands are classified as ADID wetlands. The U.S. Environmental Protection Agency (EPA) deems ADID wetlands unsuitable for the discharge of fill material under Section 404 of the Clean Water Act. In this case, the WWI-mapping (Exhibit 2) is more current than the ADID wetland mapping (which is based on the 2005 wetland inventory) and shows the T3K wetland extending further south along the tributary waterway, beyond the project area limits. Finally, SEWRPC's 2021 field delineation determined further changes to the mapped wetland and PEC boundaries in the project area were necessary, as illustrated on Exhibit 8. If the ADID wetland mapping is updated in the future these changes will be reflected.

The NRCS draft wetland inventory mapping (Exhibit 7) indicates wooded wetland (W) in approximately the same area as depicted in the WWI-mapping presented in Exhibit 2. The map also shows wetland on or just outside the northeastern project area boundary. The home site, formerly cropped fields, and part of the woodland are shown as upland while the far northwest corner of the project area was not inventoried (NI). Exhibit 7 illustrates that the available mapping does not cover the far southern edge of the project area.

Amount and Types of Wetlands and Upland in the Project Area

Three wetland plant community areas (PCAs) and one upland PCA were identified and inventoried in the project area (See Exhibit 8). A list of vascular plant species observed during the field inspection was prepared for the plant community area as well as plant community type(s), dominant plant species, disturbances, and any critical plant and animal species (Exhibit 9). The table below summarizes characteristics of each PCA.

PCA Number	Acreage	PCA Type(s)	Dominant Species	Critical Species
1	11.5	Fresh (wet) meadow, shrub-carr, hardwood swamp, floodplain forest, and open water, associated with the Kilbournville Tributary (tributary to the Root River) floodplain-wetland complex	*Enemion biternatum*--False meadow anemone *Floerkea proserpinacoides*--False mermaid (SEWRPC uncommon species) *Fraxinus pennsylvanica*--Green ash *Phalaris arundinacea*--Reed canary grass *Ranunculus hispidus*--Bristly buttercup	a
2	0.95	Constructed roadside ditches with degraded fresh (wet) meadow.	*Phragmites australis* subsp. *australis*--Tall reed grass *Typha X glauca*--Hybrid cat-tail	b
3	2.1	Fresh (wet) meadow (partly degraded) and shrub-carr.	*Agrostis gigantea*--Redtop grass *Phalaris arundinacea*--Reed canary grass *Rhamnus cathartica*--Common buckthorn	c
4 (Upland)	14.6	Mesic hardwoods (Maple-Basswood) within the PEC associated with the Kilbournville Tributary.	*Acer saccharum*--Sugar maple *Enemion biternatum*--False meadow anemone *Erythronium albidum*--White trout-lily *Erythronium americanum*--Yellow trout-lily *Floerkea proserpinacoides*--False mermaid (SEWRPC uncommon species) *Fraxinus pennsylvanica*--Green ash *Ranunculus hispidus*--Bristly buttercup *Tilia americana*--Basswood *Trillium grandiflorum*--Large-flowered (White) trillium	d

[a] *Wax-leaf meadow rue (Thalictrum revolutum) and Black haw (Viburnum prunifolium), both State-designated Special Concern species were observed during the field inspections. SEWPRC's Amendment to the Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin, identifies most of this PCA as part of Kimmel Woods, a Natural Area of local significance, NA-3.*

[b] *While no Federal- or State-designated Endangered, Threatened, or Special Concern species were observed during the field inspections, SEWPRC's Amendment to the Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin, identifies a portion of this PCA as part of the northern edge of Kimmel Woods, a Natural Area of local significance, NA-3.*

[c] *No Federal- or State-designated Special Concern, Threatened, or Endangered species were observed during the field inspections.*

[d] *pBlack haw (Viburnum prunifolium) and Slender sedge (Carex gracilescens), both State-designated Special Concern species were observed during the field inspections. SEWPRC's Amendment to the Natural Areas and Critical Species Habitat Protection and Management Plan for Southeastern Wisconsin, identifies most of this PCA as part of Kimmel Woods, a Natural Area of local significance, NA-3. In addition, stands of Slender sedge were observed in a wooded area adjacent to the Kimmel Woods. This area appears on Exhibit 8 as a proposed Critical Species Habitat (CSH) and was added to the established PEC.*

In addition, the US Fish & Wildlife Service identifies the entire project area as part of a mapped "low potential zone" for Rusty patched bumble bee (*Bombus affinis*), a Federally designated Endangered species.

Wetland/Upland Boundary Explanation

Thirty representative sample sites were identified within the project area. The Wetland Determination Data Forms describing the findings at each sample site are attached as Exhibit 10. The locations of the sample sites are shown on Exhibit 8. The wetland boundaries were determined using breaks in topography, changes in vegetation composition, visual identification of wetland hydrology, and presence of hydric soils.

Disturbed and Problematic Areas Encountered

Sample Site numbers 1 and 11 were located on a low stream terrace and on an old stream oxbow, respectively. Both sample sites exhibited multiple wetland hydrology indicators and had a hydric soil. Vegetation was determined to be naturally problematic due to recent die-off of green ash (*Fraxinus pennsylvanica*), a FACW species. Green ash had occupied a significant portion of the tree canopy and its demise allowed for a higher proportion of non-hydrophytic plant species than would otherwise be present. Therefore, both sample sites were determined to be wetland with naturally problematic hydrophytic vegetation.

Recent clearing of woody vegetation and soil disturbance (filling/grading) were observed on the eastern portion of the property, in the vicinity of Sample Site numbers 25 through 29 (see Exhibit 11, Photo 23). However, the disturbed area exhibited wetland hydrology and a had hydric soil and was therefore delineated as part of wetland PCA 3 (Exhibit 8).

Other Considerations

As noted under the Results and Discussion section, the western and central portions of the property contain a SEWRPC-designated Natural Area of local significance (NA-3) known as Kimmel Woods. The SEWRPC December 2010 *Amendment to the Natural Areas and Critical Species Habitat Protection and Management Plan for the Southeastern Wisconsin Region* recommends protection of Kimmel Woods through acquisition by a private conservancy organization if such an organization and the property owner are so inclined.

In addition, several State-designated Special Concern and SEWRPC-listed uncommon plant species were observed within Kimmel Woods and the primary environmental corridor (PEC) identified on Exhibit 8. The Special Concern and uncommon plant species are identified in Exhibit 9. Specifically, stands of Slender sedge (*Carex gracilescens*), a State-designated Special Concern species, were observed in the southern end of the project area, immediately adjacent to Kimmel Woods, within the PEC. This area is shown on Exhibit 8 as a proposed Critical Species Habitat.

The nonagricultural performance standards set forth in Section NR 151.125 of the *Wisconsin Statutes*, require establishment of a 75-foot impervious surface protective area to protect "highly susceptible" wetlands (fens, sedge meadows, ephemeral ponds, etc.). "Moderately susceptible" wetland types (USGS-mapped waterways and waterbodies, shrub-carr, forested wetlands with early successional species, shallow marsh, and fresh (wet) meadow) should have a 50-foot impervious surface protective area. Degraded portions of wetlands with 90 percent or greater cover by non-native species (Reed canary grass, Narrow-leaved cattail, etc.) are considered "less susceptible" requiring establishment of a 10- to 30- foot setback depending on average width of the wetland. Stormwater management facilities which are designed, constructed, and maintained for conveyance or treatment purposes are not subject to protective area performance standards as indicated in the WDNR Guidance for the Establishment of Protective Areas for Wetlands in Runoff Management Rules, *Wisconsin Administrative Code* NR 151.

Wetland PCA 1 consists mostly of mature hardwood swamp within the Kimmel Woods Natural Area. The wetlands contained within the Natural Area are best described as highly susceptible, which typically receive a 75-foot protective area setback. Other PCA 1 wetlands outside the Natural Area, including fresh (wet) meadow, shrub-carr, floodplain forest, and surface water (pond), are moderately susceptible which are typically assigned a 50-foot setback.

Wetland PCA 2 is comprised of constructed roadside ditches with fresh (wet) meadow degraded by the dominance of invasive Tall reed grass (*Phragmites australis* subsp. *australis*) and Hybrid cat-tail (*Typha* X *glauca*). As these ditches were designed and are maintained for the purpose of stormwater conveyance, PCA 2 is exempt from the above protective area standards.

Wetland PCA 3 consists of fresh (wet) meadow (partly degraded) and shrub-carr. Moderately susceptible non-degraded fresh (wet) meadow and shrub-carr typically receive a 50-foot protective area setback. Degraded fresh (wet) meadow is typically assigned a 10-30 foot setback.

The designated protective area boundaries are measured horizontally from the delineated wetland boundary to the closest impervious surface. The protective area requirements should be taken into consideration for any planned improvements within the project area. It is recommended that the property owner or their representative contact WDNR regarding approaches to meet the requirements. Finally, please be advised that no Federal or State regulatory jurisdiction determinations relative to any wetland permits or certifications are made under this report.

LITERATURE CITED

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CJJ/JLD/ZPK/STH/TMS/ac
CA311-59 Mary E Kimmel Revocable Trust Properties WD Report (00259925).DOCX
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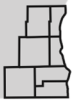

September 23, 2021

Mr. Andrew T. Struck
Director
Ozaukee County Planning & Parks Department
P.O. Box 994
Port Washington, WI 53074

Re: SEWRPC No. CA-209-151

Dear Mr. Struck:

This will respond to your email message of January 26, 2021, requesting that the Commission staff conduct a field inspection of the northeastern portion of Virmond County Park where surface water and stormwater drainage improvements are proposed. The project area is located in parts of the Southwest one-quarter of U.S. Public Land Survey Section 28, Township 9 North, Range 22 East, City of Mequon, Ozaukee County, Wisconsin. The purpose of the field inspection was to identify and stake the boundaries of any wetlands contained within the project area.

Pursuant to your request, Commission staff identified and staked the wetland boundaries on the western portion of the project area on June 29 and July 1, 2021. At that time, it was determined that wetland delineation on the entire bluff face on the eastern portion of the project area would be unsafe for Commission staff to conduct due to very steep and unstable clay soils. Upon sharing this information with County staff, it was agreed that wetland delineation on the bluff face could be postponed until more detailed plans become available for improvement projects on the bluff face. This would allow for a scaled back wetland delineation by Commission staff to be limited to only select portions of the bluff face where soil disturbance is planned. Please notify the Commission staff when detailed plans are available so wetland delineation can be scheduled for the bluff face.

On July 16, 2021, Mr. Matt Aho, Program Manager, Ozaukee County Planning & Parks Department, requested additional wetland delineation by Commission staff within an expanded project area in the northcentral portion of Virmond County Park. Accordingly, Commission staff identified and staked wetlands within the expanded portion of the project area on July 29, 2021.

In addition, while conducting a vegetation survey along the bluff face on July 29, 2021, Commission staff recorded locations of potential wetlands on the bluff face where groundwater seepages were observed. Please note that these wetland locations are approximate and that it's very likely that other seepage wetlands are present. A copy of the wetland delineation report is attached for your reference. Should you have any questions regarding this information, please do not hesitate to contact Mr. Christopher J. Jors, Principal Specialist-Biologist (cjors@sewrpc.org or 262-953-3246).

Sincerely,

Kevin J. Muhs, PE, AICP
Executive Director

KJM/TMS/CJJ/md
#259026 - CA209-151 Virmond County Park Drainage Improvements Letter

Enclosure (#259229)

cc: Mr. Matt Aho, Ozaukee County Planning & Parks Department (w/enclosure by email)
Mr. Ryan Pappas, Wisconsin Department of Natural Resources (w/enclosure by email)
Ms. Kara Brooks, Wisconsin Department of Natural Resources (w/enclosure by email)
Ms. April Marcangeli, U.S. Army Corps of Engineers (w/enclosure)

WETLAND DELINEATION REPORT

VIRMOND COUNTY PARK - PROPOSED SURFACE AND STORMWATER DRAINAGE IMPROVEMENTS

SW Quarter, Section 28, T9N, R22E
CITY OF MEQUON
OZAUKEE COUNTY
WISCONSIN

Lead Investigator:

Christopher J. Jors
Principal Specialist-Biologist
Southeastern Wisconsin Regional Planning Commission
W239 N1812 Rockwood Drive
P.O. Box 1607
Waukesha, WI 53187-1607
(262)547-6721
cjors@sewrpc.org

Report completed: September 7, 2021

WETLAND DELINEATION REPORT OVERVIEW

(Based upon WDNR WETLAND Delineation Confirmation Request Check List)

INTRODUCTION

- Who requested the delineation – **Andrew Struck, Director, Ozaukee County Planning and Parks Department**
- Why the delineation was undertaken – **Proposed Drainage Improvements**
- Field inspection date(s) – **June 29, July 1 and 29, 2021**
- Who conducted field work – **Christopher Jors, Jennifer Dietl, Zachary Kron, and Shane Heyel**
- Statement of Qualifications
- GIS Support – **Bradley Subotnik**

METHODS

- Description of Methods
- Sources Reviewed
  - Ozaukee County Topographic Mapping – **Exhibit 1**
  - Wisconsin Department of Natural Resources (WDNR) Surface Water Data Viewer - Wisconsin Wetland Inventory (WWI) Mapping – **Exhibit 2**
  - Natural Resources Conservation Service (NRCS) Soil Survey and Federal Emergency Management Agency (FEMA) Floodplain Mapping – **Exhibit 3**
  - SEWRPC Historical Aerial Photos – **Exhibits 4A to 4M (2020, 2015, 2010, 2007, 2005, 2000, 1995, 1990, 1980, 1970, 1963, 1950, and 1941)**
  - SEWRPC Sanitary Sewer Service Area Mapping – **Exhibit 5**
  - Advance Identification (ADID) Wetland Mapping – **Exhibit 6**
  - NRCS Draft Wetland Inventory Mapping – **Exhibit 7**
  - National Agriculture Imagery Program (NAIP)/Farm Service Agency (FSA) Images – **N/A**
- Description of any site specific agency guidance (site meetings, etc.) – **None**

RESULTS AND DISCUSSION

- Antecedent hydrologic condition analysis – **Normal (June 29 and July 1); Drier-than-normal (July 29); Moderate Drought (D1) per U.S. Drought Monitor for all site investigation dates**
- Previous wetland delineation mapping – **None**
- Existing environmental mapping (WWI mapping, Soil survey, etc.)
- Amount and types of wetlands and upland located within the project area
- Wetland/upland boundary explanation
- Disturbed and problematic areas encountered
- Other considerations

LITERATURE CITED

Wetland Delineation Map – **Exhibit 8**

Vegetation Survey, Wetland Delineation Data Forms, and Site Photos

- Preliminary Vegetation Survey – **Exhibit 9**
- Wetland Determination Data Forms – NC/NE Region – **Exhibit 10**
- Site Photos – **Exhibit 11**

INTRODUCTION

This wetland delineation report responds to a January 26, 2021, email request from Andrew Struck, Director, Ozaukee County Planning and Parks Department, to identify the boundaries of any wetlands in the northeastern portion of the Virmond County Park property. The project area, which was later expanded to include the north-central portion of the park, consists of the steep Lake Michigan bluff, woodland with maintained footpaths, and open park land that is at least periodically mowed and includes a tennis court and playground area. The project area is in the Southwest one-quarter of U.S. Public Land Survey Section 28, Township 9 North, Range 22 East, City of Mequon, Ozaukee County, Wisconsin.

Statement of Qualifications

Lead Investigator: Christopher Jors, Principal Specialist-Biologist, has worked at SEWRPC since 1993, and has been part of the wetland delineation team since 1994. He received a Bachelor's degree in Biological Aspects of Conservation from the University of Wisconsin – Milwaukee in 1992. Prior to working at SEWRPC, Chris worked at the UWM Field Station at the Cedarburg Bog in Saukville, WI, where he learned methods of sampling wetland plant communities within the Bog. Chris has attended various wetland training workshops including the UW-La Crosse Critical Methods Workshop on March 3, 2021; the UW-La Crosse Basic and Advanced Wetland Delineation Workshops on August 10-15, 2015; a Wisconsin Department of Natural Resources Wetland Delineation & Wetland Rapid Assessment Methodology Workshop on April 23, 2014; and a U.S. Army Corps of Engineers Workshop on the Midwest Supplement to the 1987 Wetland Delineation Manual on February 3, 2009.

Jennifer Dietl, Principal Specialist-Biologist, earned Bachelor's degrees in Biology and Environmental Science from Carroll University in 1992. Jennifer has worked at the Commission from 1992 to 1997 and from 2006 to the present conducting wetland delineations, primary environmental corridor delineations, and vegetation surveys. In between years of service at the Commission, she worked for the Wisconsin Department of Transportation – Green Bay as an LTE Environmental Analysis and Review Specialist – and the Wisconsin Department of Natural Resources – Green Bay as an LTE Hydrologist. Jennifer attended the UW-La Crosse Critical Methods Workshop on March 4, 2020, UW-La Crosse Hydric Soils Workshop on July 19-21, 2017, the UW-La Crosse Basic and Advanced Wetland Delineation Workshops on August 10-15, 2015; and a Wisconsin Dept. of Natural Resources Wetland Delineation & Wetland Rapid Assessment Methodology Workshop on April 23, 2014.

Zachary Kron, Senior Specialist-Biologist, Zach earned a Bachelor's degree in Natural Resource and Environmental Sciences from the University of Illinois Urbana-Champaign in 2008. In 2011, he received a Master's degree in Plant Biology from the University of Illinois Urbana – Champaign. Zach worked for the Illinois Natural History Survey (INHS) as a botanist coauthoring plant ecology articles in peer-reviewed journals and completing vegetation surveys in wetland restorations and natural areas throughout the state. Following his work with the INHS, Zach worked as an ecologist and project manager for restoration contractors in Illinois, Wisconsin, and Ohio. Prior to joining the Commission, Zach served as a Restoration Ecologist / Project Manager for The Nature Conservancy and then with the Wisconsin Department of Natural Resources In-Lieu Fee Wetland Mitigation Program. He has completed the basic and advanced wetland delineation training, hydric soils training, and Wisconsin Natural Heritage Inventory Training.

Shane Heyel, Specialist-Biologist, joined the wetland delineation team at SEWRPC in June 2016. He holds a Bachelor's degree in Land Use Planning from the University of Wisconsin-Stevens Point and a Master's degree in Hydrology & Water Quality from Lancaster University (United Kingdom). Shane worked for the Wisconsin Department of Natural Resources for seven years, including four years regulating waterways and wetlands. With Atkins Limited, U.K. from 2005-2009, he delivered pollution and flood risk assessments to the English Highways Agency and modeled sewer networks to report flood alleviation options for major British water companies. As an independent consultant in Wisconsin, Shane helped develop a site restoration plan for a proposed wetland mitigation bank. His recent wetland training includes UW-La

Crosse Workshops in Basic Wetland Delineation (August 2015), Advanced Wetland Delineation (August (2016), Basic Plant ID (July 2017), Hydric Soils (July 2018), and Critical Methods (March 2020).

METHODS

Description of Methods

The wetland boundary determinations were based upon the criteria and methodologies set forth in the 1987 *Corps of Engineers Wetlands Delineation Manual*; the January 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (Version 2.0); the March 4, 2015, *Guidance for Submittal of Delineation Reports to the St. Paul District Army Corps of Engineers and the Wisconsin Department of Natural Resources*; and the State of Wisconsin 2018 Wetland Plant List.

Sources Reviewed

Prior to conducting field work, Commission staff reviewed the following data sources that were available and applicable to the project area:

- Ozaukee County's topographic mapping (Exhibit 1)
- WDNR Surface Water Data Viewer - WWI mapping (Exhibit 2)
- NRCS soil survey and FEMA floodplain mapping (Exhibit 3)
- SEWRPC historical aerial photography (Exhibits 4A – 4M)
- SEWRPC sanitary sewer service area mapping (Exhibit 5)
- ADID wetland mapping (Exhibit 6)
- NRCS Draft Wetland Inventory mapping (Exhibit 7)
- Precipitation data from the NRCS "WETS" tables

RESULTS AND DISCUSSION

Christopher Jors, as lead field investigator and report author, supervised and approved all aspects of the wetland delineation in the field, data compilation and analysis, and preparation of this report. Wetland boundaries in most of the project area were marked with orange wire flags and ribbon on June 29 and July 1 and 29, 2021. Commission staff used a sub-meter-accuracy global positioning system (GPS) device to record the locations of the wetland boundary markers and forty-one representative sample sites that were utilized to inform the staked boundaries.

The Lake Michigan bluff portion of the project area was determined to be too steep and unstable for conducting a full wetland delineation. Instead, Commission staff recorded the location and approximate extent of several seepage wetland areas on the bluff while conducting a plant species inventory. The seepage wetlands included both vegetated and unvegetated areas, some of which are illustrated in Exhibit 11, photos 47-56. It is important to note that additional wetlands are likely present on the bluff but may not have been identified due to limited accessibility. It is recommended that County staff share the location(s) of proposed bluff face disturbance when specific plans for work on the bluff face are available. At that time, Commission staff can formulate a plan to safely access only those areas where wetland delineation is necessary, as was accomplished in 2019 for the beach access stairway project.

The results of the wetland delineation field inspections for this project area are shown on Exhibit 8, which includes the field-staked and GPS-located wetland boundaries west of the lake bluff, the GPS-located sample site locations and numbers, the estimated locations of bluff seepage wetlands, and the plant community area numbers.

During the site inspections, significant stands of dead green ash (*Fraxinus pennsylvanica*) trees that had succumbed to the Emerald ash-borer were observed in the wooded wetlands. This typically allows for establishment/expansion of invasive alien species such as Common buckthorn (*Rhamnus cathartica*). To

limit such degradation of the woodlands, the Commission recommends management including buckthorn removal and efforts to establish desirable native tree species such as swamp white oak (*Quercus bicolor)*.

Antecedent Hydrologic Conditions

Climatological data were taken from the nearest WETS station(s) with complete data for the 1991-2020 climate period and monthly precipitation summaries for the antecedent 90-day observed data. The historical data set was taken from the Germantown wastewater utility station, while the 90-day observed data were available from the closer Brown Deer 0.8 NW station. These data are summarized in the following tables as applicable for the site investigation dates:

June 29 and July 1, 2021	Month	3 years in 10 Less Than	Normal	3 years in 10 More Than	Observed Precip.	Condition (dry, wet, normal)	Condition Value	Month Weight Value	Product of Previous Two Columns
1st prior month	June	2.68	4.37	5.28	3.79	Normal	2	3	6
2nd prior month	May	2.66	3.95	4.69	4.02	Normal	2	2	4
3rd prior month	April	2.66	3.84	4.59	1.63	Dry	1	1	1
									Sum = 11

If Sum is	
6 - 9	drier than normal
10 - 14	normal
15 - 18	wetter than normal

Conclusion: **Normal**

July 29, 2021	Month	3 years in 10 Less Than	Normal	3 years in 10 More Than	Observed Precip.	Condition (dry, wet, normal)	Condition Value	Month Weight Value	Product of Previous Two Columns
1st prior month	July	2.79	3.92	4.64	1.84	Dry	1	3	3
2nd prior month	June	2.68	4.37	5.28	3.79	Normal	2	2	4
3rd prior month	May	2.66	3.95	4.69	4.02	Normal	2	1	2
									Sum = 9

If Sum is	
6 - 9	drier than normal
10 - 14	normal
15 - 18	wetter than normal

Conclusion: **Drier than Normal**

It is noted that due to very dry conditions in March, April, and July, U.S. Drought Monitor classified the antecedent precipitation condition for each of the three site investigation dates as Moderate Drought (D1). Despite this, wet conditions were observed in the project area during the June 29 and July 1, 2021, site inspections due to over 1.5 inches of rainfall the previous several days.

Existing Environmental Mapping

The Ozaukee County topographic mapping (Exhibit 1) depicts a project area consisting mainly of managed parkland with very gently rolling topography including small depressions, natural drainage

swales, and constructed ditches. In stark contrast, the eastern end of the project area encompasses the very steep natural bluff of Lake Michigan, which features over 100 feet of vertical relief. A small, excavated pond is shown southeast of the Virmond Park Road cul-de-sac. Elevations in the project area range from a high of 719 feet above National Geodetic Vertical Datum, 1929 adjustment (NGVD 29), amongst planted conifers about 140 feet north of the south project area boundary and about 90 feet west of the top of the bluff, to a low elevation of approximately 587 feet above NGVD 29 at points on the toe of the bluff along the southeastern project area boundary.

The WDNR Surface Water Data Viewer - WWI mapping (Exhibit 2) indicates forested (T3K) wetlands in the central and southeastern portion of the project area. An NRCS "wet spot" symbol appears in the wooded northeastern portion of the project area.

Several areas within the central and western portions of the project area, including the above referenced excavated pond, exhibit evidence of surface water or saturation, but are not mapped as wetland. Wetland indicators, shown as NRCS-mapped Kewaunee silt loam (KnA and KnB) and Manawa silt loam (MaA) soils, are scattered predominantly across central and western portions of the project area, but the correlation between the two isn't particularly strong.

The NRCS Soil Survey map (Exhibit 3) shows the following soils in the project areas:

Map Unit Name and Symbol	Slope (%)	Hydric Category	Hydric Percent of Map Unit	Hydric Minor Component, Percent, and landform	Project Area (%)
Kewaunee silt loam (KnA)	0-2	Predominantly Non-hydric	3	Poygan-occassionally ponded, 0-5%, depressions	39.4
Kewaunee silt loam (KnB)	2-6	Predominantly Non-hydric	3	Poygan-occassionally ponded, 1-5%, depressions	35.0
Manawa silt loam (MaA)	0-3	Predominantly Non-hydric	7	Poygan-occassionally ponded, 3-9%, depressions	7.4
Rough broken land (Ry)	30-60	Non-hydric	0	Not Applicable (N/A)	18.2

Exhibit 3 also indicates FEMA-mapped 1-percent-annual-probability (100-year recurrence interval) floodplain of Lake Michigan in the far eastern edge of the project area along the toe of the lake bluff.

Historical aerial photos of the property were reviewed back to 1941 (see following table). Orthophotography for years 2020, 2015, 2010, 2007, 2005, 2000, and 1995; and aerial photos for years 1990, 1980, 1970, 1963, 1950, and 1941 are attached (see Exhibits 4A to 4M).

Year	Changes in Land Use Observed on Aerial Photography from 1941 to 2020
1941	Land use within and around the project area consists of farmland and low-density residences along East Ravine Road to the north. The project area appears to be privately owned as it consists of cropped fields in the western/west-central portions and a small residence in the wooded northeastern portion. The residence is accessed via a long driveway starting at North Lake Shore Drive which runs east passing a farmstead then along the southern project area boundary before turning northward to pass through an idle/grazed area before reaching the home in the woods. Seepage/erosion channels are evident on the steep lake bluff in the eastern end of the project area. A wide beach at the base of the bluff indicates low lake levels when this photo was taken. The cropped fields exhibit wetland/wetness signatures consistent with wetland PCAs 1, 2, 4, and 7.
1950	Cropping appears to have ceased, making way for development of Virmond County Park. A park road has been constructed as a 'loop road' with the portion south of the project area, including the parking lot near the lake, in the present-day alignment. The road continues northward into the project area along a route that includes the site of the present-day pavilion before turning westward through the northern end of the project area and ultimately reconnecting with North Lake Shore Drive. Land disturbance, perhaps spreading of fill material associated with the road construction, is visible in the south-central part of the project area (present-day playground area). It is evident that there was a problem edge-matching two photographs taken of the park, causing a double image of the old driveway and the new parking lot on the eastern end of the project area.

Year	Changes in Land Use Observed on Aerial Photography from 1941 to 2020
1963	Land disturbance that matches the footprint of the present-day tennis courts is apparent. A wetness signature appears in the vicinity of the present-day constructed pond. The residence in the wooded northeastern part of the project area has been razed.
1970	The Virmond Park Road cul-de-sac has been constructed in its present-day alignment. Land disturbance is present in the footprint of the present-day playground area parking lot. A pavilion has also been built in the center of the project area, indicating abandonment of the portion of the loop road through the northern portion of the project area.
1980	The beach at the base of the bluff is relatively narrow on this image indicating a high lake level at the time this photo was taken.
1990	No significant changes noted.
1995	A playground has been installed east of the tennis courts. A sand volleyball court has been installed near the center of the project area.
2000	A storage shed has been built south of the tennis courts, just outside the project area. It is evident lake levels are low given the wide beach along the Lake Michigan shoreline.
2005	A footpath connecting the tennis courts and playground has been installed.
2007	No significant changes noted.
2010	Wetness signatures in the southwestern part of the project area are likely indicative of failing drain tiles. The area has not been mowed as a result.
2015	No significant changes noted.
2020	The playground has been expanded. A pond has been excavated near the center of the project area. Lake levels are relatively high with very little beach exposed at the base of the bluff.

SEWPRC's sanitary sewer service area mapping (Exhibit 5) indicates the project area lies within the planned sewer service area for the City of Mequon and Village of Thiensville. The map further indicates the Lake Michigan bluff and the adjacent woodland are part of a primary environmental corridor (PEC).

The ADID wetland mapping (Exhibit 6) indicates the WWI-mapped T3K wetland in the southeastern portion of the project area lies within the above referenced PEC and is therefore classified as an ADID wetland. The U.S. Environmental Protection Agency (EPA) deems ADID wetlands unsuitable for the discharge of fill material under Section 404 of the Clean Water Act. In this case, Exhibit 8 illustrates additional wetlands that were delineated within the wooded PEC as PCA 3 and identified and estimated on the Lake Michigan bluff portion of the PEC as part of PCA 8. If the ADID wetland mapping is updated in the future these changes will be reflected.

The NRCS draft wetland inventory mapping (Exhibit 7) indicates a small wetland (W) in the wooded northeastern portion and the edge of a second wetland in the western edge of the project area. The map shows most of the project area, however, as not inventoried (NI).

Amount and Types of Wetlands and Uplands in the Project Area

Six wetland plant community areas (PCAs) and one upland PCA were identified and inventoried west of the bluff top (see Exhibit 8). An additional plant community area on the bluff face itself included species found in both wetland and upland portions of the bluff. A list of vascular plant species observed during the field inspection was prepared for the plant community areas as well as plant community type(s), dominant plant species, disturbances, and any critical plant and animal species (Exhibit 9). The table below summarizes characteristics for each PCA.

PCA Number	Acreage	PCA Type(s)	Dominant Species	Critical Species
1	0.25	Fresh (wet) meadow.	*Agrostis stolonifera*--Creeping bentgrass *Fraxinus pennsylvanica*--Green ash *Solidago gigantea*--Giant goldenrod	a
2	1.0	Southern hardwood swamp.	*Acer saccharinum*--Silver maple *Cornus obliqua*--Silky dogwood *Frangula alnus*--Glossy buckthorn *Fraxinus pennsylvanica*--Green ash *Rhamnus cathartica*--Common buckthorn *Salix* x *fragilis*--Crack willow *Solidago gigantea*--Giant goldenrod	b and c
3	2.1	Ephemeral pond, Southern hardwood swamp, shrub-carr, and fresh (wet) meadow.	*Acer saccharinum*--Silver maple *Cornus obliqua*--Silky dogwood *Glyceria striata*--Fowl manna grass	b and d
4	0.17	Atypical (mowed) wetland and fresh (wet) meadow.	*Agrostis stolonifera*--Creeping bentgrass *Eleocharis palustris* (*erythropoda)*--Common (Red-root) Spike-rush *Poa pratensis*--Kentucky bluegrass	None
5	0.29	An excavated pond with open water, shallow marsh and fresh (wet) meadow.	*Juncus dudleyi*--Dudley's rush *Juncus nodosus*--Joint rush *Typha* x *glauca*--Hybrid cat-tail	e
6 (upland)	3.8	Upland woods with conifer plantings within the Lake Michigan PEC.	*Frangula alnus*--Glossy buckthorn *Picea abies*--Norway spruce *Pinus strobus*--White pine *Rhamnus cathartica*--Common buckthorn	f
7	0.83	Fresh (wet) meadow.	*Agrostis gigantea--Redtop grass* *Agrostis stolonifera*--Creeping bentgrass *Juncus dudleyi*--Dudley's rush *Solidago gigantea*--Giant goldenrod	g
8 (Upland and wetland)	4.5	Clay Seepage Bluff and Great Lake Beach.	*Equisetum arvense*--Common horsetail *Robinia pseudoacacia*--Black locust *Solidago canadensis*--Canada goldenrod *Solidago juncea*--Early goldenrod	h

[a] *The regionally uncommon Golden-fruit sedge (*Carex aurea*) and Thin-leaf sedge (*Carex cephaloidea*) were found within this plant community area.*

[b] *Green ash (*Fraxinus pennsylvanica*), historically dominant within the tree canopy, is now virtually absent due to damage caused by emerald ash borer.*

[c] *The regionally uncommon Golden-fruit sedge (*Carex aurea*) was found within this plant community area.*

[d] *The Regionally uncommon Thin-leaf sedge (*Carex cephaloidea*) was observed within the plant community area.*

[e] *Several regionally uncommon species were found planted in the wetland plantings buffering open water. The State prohibited Hairy willow-herb (*Epilobium hirsutum*) was located within the plant community area.*

[f] *The uncommon Bristle-leaf sedge (*Carex eburnea*) and Ontario aster (*Symphyotrichum ontarionis*) were located within the plant community area.*

[g] *The regionally uncommon Golden-fruit sedge (*Carex aurea*), and Cardinal flower (*Lobelia cardinalis*) were found in the plant community area.*

[h] *The Regionally uncommon Golden-fruit sedge (*Carex aurea*) and Blue-leaved willow (*Salix myricoides*) were found in saturated clay seeps along the bluff.*

While an array of uncommon species were observed as described above, no Federal- or State-designated Special Concern, Threatened, or Endangered species were observed in the project area during site inspections. However, the Fish and Wildlife Service indicates that the entire project area is part of a mapped "low potential zone" for Rusty patched bumblebee (*Bombus affinis*), a Federally designated Endangered species.

Wetland/Upland Boundary Explanation

Forty-one representative sample sites were identified within the project area. The Wetland Determination Data Forms describing the findings at each sample site are attached as Exhibit 10. The locations of the sample sites are shown on Exhibit 8. The wetland boundaries relative to PCA numbers 1 through 5 and 7 were determined using breaks in topography, changes in vegetation composition, visual identification of wetland hydrology, and presence of hydric soils.

Disturbed and Problematic Areas Encountered

Sample site 2 had disturbed vegetation due to past farming and a more recent mowing regime. The site exhibited multiple wetland hydrology indicators and had a hydric soil. Therefore, the site is wetland with significantly disturbed hydrophytic vegetation.

PCA 8 was identified as a composite of Lake Michigan Clay Seepage Bluff and Great Lake Beach which presented a naturally problematic landscape. The bluff contains severely steep and eroding slopes and ravines which were not safely accessible for standard wetland delineation work. Consequently, several wetland seepage areas were identified on the bluff as illustrated on Exhibit 8, but no boundaries were staked. Further, it is highly likely that additional bluff seepage wetlands are present in PCA 8 that were not identified due to limited accessibility.

Other Considerations

The nonagricultural performance standards set forth in Section NR 151.125 of the *Wisconsin Statutes*, require establishment of a 75-foot impervious surface protective area to protect "highly susceptible" wetlands (fens, sedge meadows, ephemeral ponds, etc.). "Moderately susceptible" wetland types (USGS-mapped waterways and waterbodies, shrub-carr, forested wetlands with early successional species, shallow marsh, and fresh (wet) meadow) should have a 50-foot impervious surface protective area. Degraded portions of wetlands with 90 percent or greater cover by non-native species (Reed canary grass, Narrow-leaved cattail, etc.) are considered "less susceptible" requiring establishment of a 10- to 30- foot setback depending on average width of the wetland.

Stormwater management facilities which are designed, constructed, and maintained for conveyance or treatment purposes are not subject to protective area performance standards as indicated in the WDNR Guidance for the Establishment of Protective Areas for Wetlands in Runoff Management Rules, *Wisconsin Administrative Code* NR 151. Constructed roadside ditches with fresh (wet) meadow comprise the northeastern and eastern portions of PCA 4, which includes sample site 13. These ditches are exempt from the above standards as they were designed for the purpose of stormwater storage and conveyance.

The ephemeral pond located in the southern portion of PCA 3 is considered a "highly susceptible" wetland that typically receives a 75-foot protective area setback. The clay bluff seepage wetlands identified as part of PCA 8 are also considered highly susceptible and therefore receive the 75-foot setback.

PCA numbers 1, 2, 3 (aside from the ephemeral pond), 5, and 7 consist of open water, shallow marsh, fresh (wet) meadow, and Southern hardwood swamp dominated by early successional tree species. As each of these are moderately susceptible wetland types, these areas typically receive a 50-foot protective area setback.

Finally, the remainder of PCA 4 is comprised of "less susceptible" atypical (mowed) wetland. These wetlands typically receive a 10- to 30-foot protective area setback.

The designated protective area boundaries are measured horizontally from the delineated wetland boundary to the closest impervious surface. The protective area requirements should be taken into consideration for any planned improvements within the project area. It is recommended that Ozaukee County or their representative contact WDNR regarding approaches to meet the requirements. Finally, please be advised that no Federal or State regulatory jurisdiction determinations relative to any wetland permits or certifications are made under this report.

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