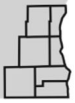
SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
W239 N1812 ROCKWOOD DRIVE • PO BOX 1607 • WAUKESHA, WI 53187-1607• TELEPHONE (262) 547-6721
FAX (262) 547-1103

Serving the Counties of: KENOSHA
MILWAUKEE
OZAUKEE
RACINE
WALWORTH
WASHINGTON
WAUKESHA



August 17, 2021

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 June 30, 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/md
WDNR 2021 1ST HALF WQ PLAN STATUS REPORT (00258396).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 June 30, 2021

Work Project and Project Output Anticipated from January 1, Through December 31, 2021, per 2021 Agreement	Project Outputs Completed during January 1 Through June 30, 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. Two memoranda completed: Upper Oconomowoc River Nutrient and Sediment Study and A Lake Management Plan for Nagawicka Lake.
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 three meetings of MMSD Technical Advisory Team (TAT)
	• Continue to serve on the following MMSD project committees:
	○ Burnham Canal technical stakeholder committee
	○ Milwaukee River rehabilitation project associated with removal of Estabrook Park dam and falls, along with channel improvements in the general reach
	• Continued to participate in the Mukwonago River Initiative and Mukwonago River Fisheries Committee
	• 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.
	• Continued to provide assistance in the development of the Fox River Water Trail.
	• 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 Walworth County to evaluate aggregate mining site mitigation alternatives. • Served as a member of the Land and Water Resources Management Plan Technical Advisory Committee for Walworth and Waukesha Counties
3. Assistance to 35 Established Waterbody Organizations and Participation with WDNR and Others in Statewide Lake Planning	3.
	• Provided assistance to 27 waterbody organizations. This includes 19 lake-related organizations and 8 river-related organizations. • Assisted 17 local units of government (Towns 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 2 different lakes.

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 June 30, 2021 (see Table 2 for details)
	• 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. 5 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.
6. Attendance at 150 Meetings Related to Water Quality	6. Attended 99 meetings related to water quality planning
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 (572 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. 94 public and private sewer extension reviews and letter reports
2. 40 Letter Reports Documenting In-Field Delineations of Environmentally Sensitive Lands	2. 3 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 572 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. 10 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	• Continued work on Oak Creek Watershed Restoration Plan
Project 300-5000: Regional Water Quality Management Plan Update—Groundwater Management Studies	
1. Miscellaneous activities	• Provided comments to Village of Somers on their draft Water Supply Service Area Plan.

Table 2
Summary of 2020 Work Program Project Outputs and Status of Documentation: January 1, 2021 Through June 30, 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 and A Lake Management Plan for Nagawicka Lake	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 support for the Village of Slinger sanitary sewer service area amendment.	1
• Provided support for the City of Racine facility plan update.	1
• Provided support for a private wastewater plant in the Village of Yorkville.	1
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 three meetings	2
• Served on two 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
• 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
• Assist Ozaukee County with Hwy W flooding during reconstruction	2
• Assist Walworth County with aggregate mining site mitigation alternatives	2
• Member of the Land and Water Resources Management Plan TAC for Walworth and Waukesha Counties	2
3. Assistance to Lake and River Organizations	
• Provision of Assistance to a Total of 27 Lake or River Organizations and counties. See Item 3, 300-1000 table (attached)	3
4. Public Information—Education Reports or Presentations	
• 5 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 99 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
Project 300-2000: Sanitary Sewer Extension Reviews	
1. 60 Public and 34 Private Sewer Extension Reviews (see listings)	3
2. 3 Letter Reports on Field Delineation of Environmentally Sensitive Lands for Sewer Extension Projects	3 (one example provided)
3. About 572 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

Table 2 (Continued)

Work Products	Status of Documentation[a]
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. 10 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. Continued work on the Oak Creek Watershed Restoration Plan *(see www.sewrpc.org/SEWRPC/Environment/Restoration-Plan-Oak-Creek-Watershed.htm)*	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 – provided comments to the Village of Somers for draft 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 June 30, 2021

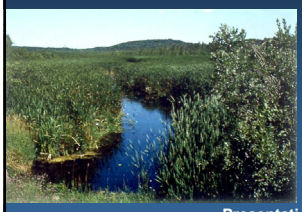
Lake or River	Activity
Nagawicka Lake	Plan was completed and published.
School Section Lake	Draft plan was completed and submitted for final review by the District and WDNR.
Silver Lake (Washington County)	WDNR provided comments and approval to finalize the plan and we are currently working on final print check copy before it is 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 collecting water temperature data and compiled water quality, land use, fish, and macroinvertebrate data for Comus Lake and Turtle Creek. Coached District staff on lake user survey and potential approaches to improve the number of survey responses.
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.
Lake Michigan Direct Tributaries	Served as an adviser on Schlitz Audubon Nature Center's Conservation Committee. Major focus has been ravine stabilization.
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. Arranged fieldwork logistics for aquatic plant inventory for summer 2021. Assisted in development of comprehensive plan scope for submittal to WDNR grant in winter 2021 and helped with various watershed restoration evaluation initiatives.
Eagle Spring Lake	Continued to work on the aquatic plant management inventory and management plan update.
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.
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.

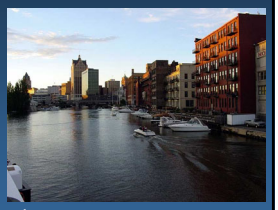
2021 Lake and River Water Quality Management Activities (300-1000–ITEM 3): January 1, 2021 Through June 30, 2021 (Continued)

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

Areawide Water Quality Management Planning, Wastewater Facilities Planning, and Water Supply Planning in the Southeastern Wisconsin Region





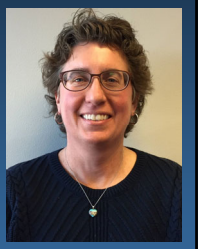
Presentation to
Facilities Planning Course CV6730
January 14, 2021
Laura K. Herrick, PE, CFM
SEWRPC Chief Environmental Engineer

#256287
#241538

1

Laura Kletti Herrick

- BSCE Valparaiso University
- MSCE University of Minnesota – water resources focus
- 13 years in consulting – HDR and CDM
- 12 years at SEWRPC
- PE in Wisconsin
- Certified Floodplain Manager



2

Southeastern Wisconsin Regional Planning Commission (SEWRPC)

- Official areawide public planning agency for the seven county Region
- Created in 1960 under State legislation
- Purpose:
  - Consider and address physical development and infrastructure problems that extend beyond municipal and county boundaries.
  - Prepare regionwide advisory long-range plans.
    - Land Use
    - Transportation
    - Water Quality Management
    - Flooding Management
    - Parks and Open Space
    - Environmental Corridors
    - Natural Areas
    - Water Supply

3

SEWRPC Environmental Planning Projects and Responsibilities

- Environmental Planning
  - Water quality management
  - Flood hazard mapping and flood mitigation
  - Stormwater management
  - Lake and stream management
  - Sewer service areas
  - Water supply management
  - Natural areas planning
  - Natural resources management
  - Educational and informational services

4

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
KENOSHA·MILWAUKEE·OZAUKEE·RACINE·WASHINGTON·WALWORTH·WAUKESHA

Regional Water Quality Management Plan

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

5

REGIONAL WATER QUALITY MANAGEMENT PLAN (RWQMP or 208 Plan)

- SEWRPC is State-designated and Federally-recognized areawide water quality planning agency
- RWQMP prepared pursuant to Section 208 of the Federal Clean Water Act
- Areawide water quality planning is watershed-based
- Plan provides:
  - Recommendations to abate water pollution
  - Basis for issuance by WDNR of Wisconsin Pollutant Discharge Elimination System (WPDES) permits
  - Basis for public and private sanitary sewer extension approvals

6

REGIONAL WATER QUALITY MANAGEMENT PLANNING IN SE WISCONSIN

- Initial 1979 Regionwide Plan (PR 30)
- Amended by SEWRPC Milwaukee Harbor Estuary Study in 1987
- 1995 SEWRPC Report Documented Status of Implementation of 1979 Plan
- Continuing Program is Ongoing—WDNR & SEWRPC Cooperative Program with U.S. EPA Support (e.g., sewer service areas, environmental corridor protection)
- 2003-2007 RWQMPU for Greater Milwaukee Watersheds (PR 50)
- 2018 TMDLs for Milwaukee and Rock River basins

7

208 Plan Objectives

- Develop a watershed-based plan
  - Holistically address all water pollution sources
  - Cost-effectively improve water quality
  - Meet designated water use objectives and water quality standards/criteria to the degree possible
  - Consider alternatives to simply meeting current regulations for point source control if a greater improvement in water quality can be achieved cost-effectively

8

SEWRPC Regional Water Quality Management Plan (PR 30)

- Included the entire 7 County Region
- Provided inventory of water quality and sources of pollution for watersheds of Region (through 1970s)
- Projected impact for planned 2000 land use and population
- Improving the treatment of sanitary wastewater throughout the Region

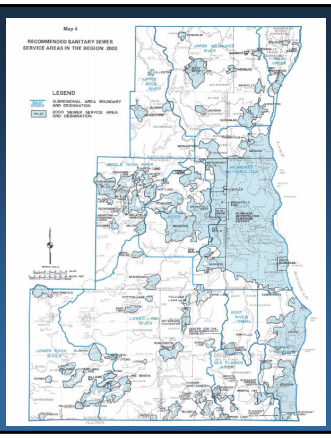
9

SEWRPC Regional Water Quality Management Plan (PR 30)

- Looked at three major components that impact water quality in Region
  - Land use changes
  - Point sources of pollution (wastewater and industrial)
  - Nonpoint sources of pollution
    - Urban
    - Rural

10

PR 30



11

SEWRPC Regional Water Quality Management Plan Update (PR 50)

- Included the greater Milwaukee watersheds only
- Was done in parallel with MMSD 2020 facilities plan
- Projected impact for planned 2035 land use and population
- Updated RWQMP recommendations for study area only

12

SEWRPC Regional Water Quality Management Plan Update / MMSD 2020 Facilities Plan

Cooperative Intergovernmental Watershed Based Planning Program

Water Quality INITIATIVE

mmsd Preserving The Environment • Improving Water Quality

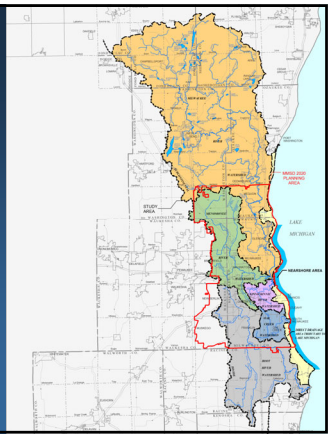
WISCONSIN DEPT. OF NATURAL RESOURCES

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION

Partner: USGS Science for a changing world

13

SEWRPC Regional Water Quality Management Plan Update Study Area



14

Southeastern Wisconsin Regional Planning Commission
Planning Report No. 50
A REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS

List of Chapters
Chapter I – Introduction and Background
Chapter II – Description of the Planning Area
Chapter III – Existing and Historic Surface Water and Groundwater Conditions
Chapter IV – Sources of Water Pollution
Chapter V – Water Resource Simulation Models and Analytic Methods
Chapter VI – Legal Structures Affecting the Water Quality Management Plan Update
Chapter VII – Water Quality Management Goals, Objectives, and Standards
Chapter VIII – Future Situation: Anticipated Growth and Change
Chapter IX – Alternative Plan Description and Evaluation
Chapter X – Recommended Water Quality Management Plan
Chapter XI – Plan Implementation
Chapter XII – Summary and Conclusions

15

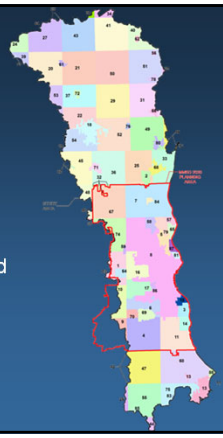
Components Common to the Draft Regulatory and Integrated Watershed-Based Approaches

- Land Use Plan Element
- Surface Water Quality Element
  - Urban and rural runoff control
  - Point source pollution abatement measures in areas outside the MMSD planning area
  - MMSD 2020 Facilities Plan recommendations except for increase in South Shore WWTP capacity through addition of physical-chemical treatment
  - Instream water quality measures
  - Inland lake measures
  - Auxiliary surface water quality measures
- Groundwater Management Plan Element

16

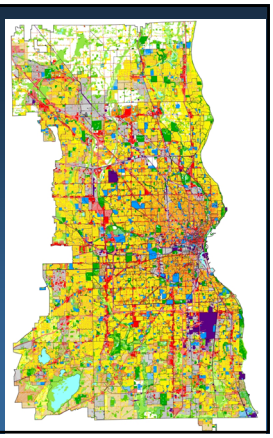
Civil Divisions

- Nine Counties
  - Kenosha, Milwaukee, Ozaukee, Racine, Washington, and Waukesha
  - Dodge, Fond du Lac, and Sheboygan
- 88 Municipalities



17

MMSD PLANNING AREA EXISTING AND PLANNED LAND USE



18

Land Use Plan Element

- Preserve primary environmental corridors (PEC)
  - 85 % of PEC currently protected
    - Public interest ownership
    - State-local floodplain and shoreland-wetland zoning
    - State rules on sanitary sewer extensions
    - Local land use regulations
- Preserve natural areas and critical species habitat sites

19

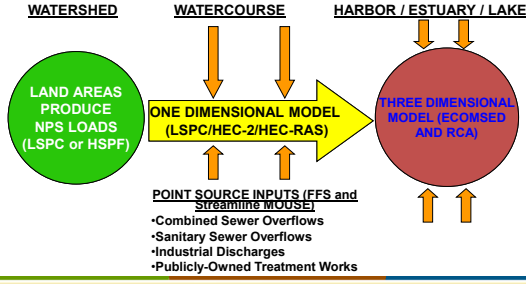
Regional Water Quality Management Plan Update

- Models simulate:
  - Hydrology: Stormwater runoff
  - Hydraulics: Movement of water in streams, estuary, and Lake Michigan
  - Water quality: In-stream and in-Lake pollutant concentrations

20

Regional Water Quality Management Plan Update/MMSD 2020 Facilities Plan

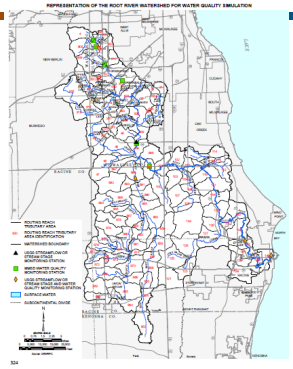
ELEMENTS OF RECEIVING WATER QUALITY MODELING



21

LSPC/HSPF Inputs

Representation of subbasins and water quality monitoring sites



22

Relationship of Models to Development of RWQMPU

- Calibrated models can be revised to represent different alternative plans
- Model results indicate instream and in-Lake water quality conditions
- Water quality conditions (pollutant concentrations) can be compared to standards
- Alternatives that result in greatest improvement in water quality can be identified

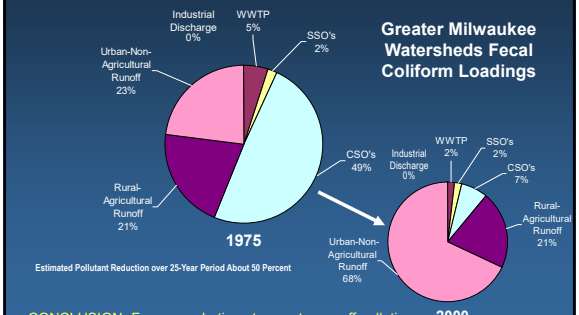
23

Ability of Recommended Plan to Meet Water Use Objectives and Water Quality Standards

- Assessed based on:
  - Water quality modeling results for pollutants for which there are regulatory or planning standards
  - Modeled changes in instream pollutant concentrations under recommended conditions relative to existing and future conditions

24

Pollution Sources Summary



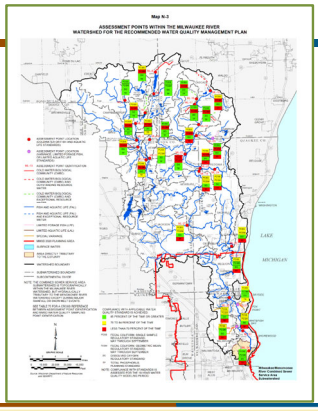
Estimated Pollutant Reduction over 25-Year Period About 50 Percent

CONCLUSION: Focus on abating stormwater runoff pollution

25

Water Quality Standards Compliance Under Recommended Plan Conditions:

Milwaukee River Watershed



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

26

Recommended PR-50 Plan Components (partial list)

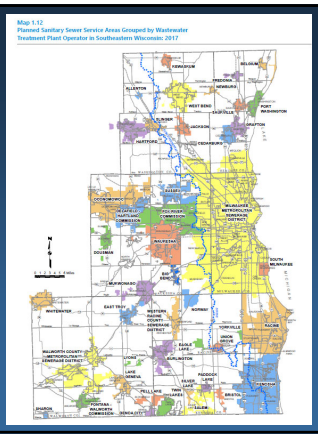
- Land Use Plan Element
  - Develop according to approved land use plans
  - Preserve environmental corridors
  - Preserve high quality farmland
- Groundwater Management Plan Element
  - Maintain important groundwater recharge areas
  - Implement utility-specific water conservation programs

27

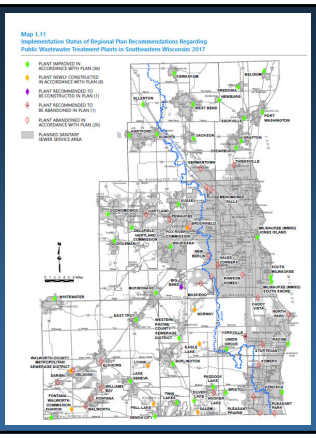
Recommended PR-50 Plan Components (partial list)

- Surface Water Quality Element
  - Point Sources
    - Refine sanitary sewer service areas
    - Evaluate need to reduce infiltration and inflow to sanitary systems
    - Continue to regulate point discharges through WPDES
  - Nonpoint Sources
    - Utilize nutrient management plans
    - Increase riparian buffers to minimum 75-ft widths
    - Limit the number of stream crossings
    - Inspect and maintain private onsite treatment systems
    - Implement construction erosion control practices
    - Eliminate illicit discharges to sanitary systems

28



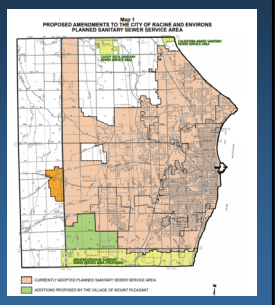
29



30

RWQMP applied today

- Sanitary sewer service areas
- Sanitary sewer extensions
  - Environmental areas
  - Floodplains
- Wastewater Facility Plan reviews



31

Regional Water Supply Planning

32

Background

Regional Water Supply Planning Program

Three Elements (Coordinated with and Designed to Complement Local Actions)

1. Conduct Basic Groundwater Inventories (Completed in 2001 with Partners—WGNHS and WDNR)
2. Collect Additional Inventory Data and Develop Regional Aquifer Simulation Model (Completed in 2005 with Partners—USGS, WGNHS, UW-Milwaukee, WDNR, and SE Wisconsin Water Utilities)
3. Prepare Regional Water Supply System Plan (Partners include USGS, WGNHS, UW-Milwaukee, and WDNR)

Planning Report No. 52, "A Regional Water Supply Plan for Southeastern Wisconsin," December 2010

33

Regional Water Supply Plan Background

- A Cooperative Program

SE Wisconsin Water Utilities

USGS science for a changing world

Southeastern Wisconsin Regional Planning Commission

Seven Southeastern Wisconsin Counties

Wisconsin Dept. of Natural Resources

University of Wisconsin Milwaukee

UW Extension Wisconsin Geological and Natural History Survey

34

Regional Water Supply Plan (PR-52)

- Main plan recommendations were focused on ensuring that each water utility in the Region had a sustainable source of supply and reliable capacity through 2035.
  - Recommended source(s) of supplies for each water utility in the Region such that the drawdown in the deep aquifer could be stabilized or reversed and reductions of baseflows to surface waters could be minimized.
  - Upgrading and construction of water supply infrastructure that would ensure that each utility had reliable capacity to meet peak daily demands under projected 2035 conditions.

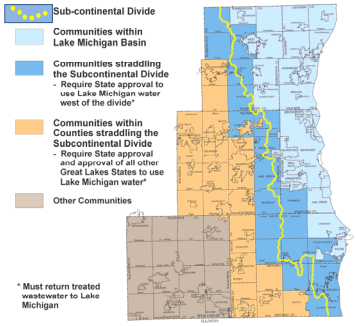
35

Regional Water Supply Plan Reports

- Technical Report No. 37 (TR-37), "Groundwater Resources of Southeastern Wisconsin" (Bruce Brown, Kim Cates, Timothy Eaton, Ronald Hennings, Fred Madison, and Alexander Zaporec, WGNHS, UWEX and Robert Biebel, SEWRPC)
- TR-41, "A Regional Aquifer Simulation Model for Southeastern Wisconsin" (Daniel Feinstein, USGS)
- TR-43, "State of the Art of Water Supply Practices" (Ruekert & Mielke)
- TR-44, "Water Supply Law" (Boardman, Suhr, Curry & Field)
- TR-46, "Groundwater Budget Indices and Their Use in Assessing Water Supply Plans for Southeastern Wisconsin" (Doug Cherkauer, UW-Milwaukee)
- TR-47, "Groundwater Recharge in Southeastern Wisconsin Estimated by a GIS-Based Water Balance Model" (David Hart, Peter Schoephoester, Ken Bradbury, WG&NHS, UWEX)
- TR-48, "Shallow Groundwater Sustainability Analysis Demonstration for the Southeastern Wisconsin Region" (Ken Bradbury, WG&NHS, UWEX and Todd Rayne, Hamilton College)
- Planning Report No. 52, "A Regional Water Supply Plan for Southeastern Wisconsin", December 2010

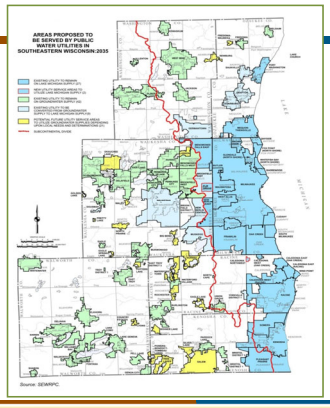
36

Great Lakes Compact



37

Sources of Supply Plan Component

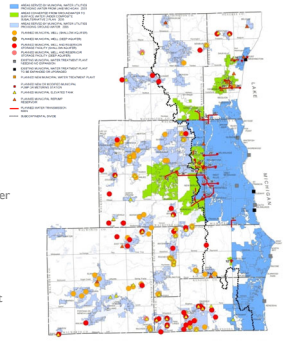


38

Recommended SEWRPC Regional Water Supply Plan

Recommended Actions

- Enhanced water conservation
- Protection of areas of high groundwater recharge potential
- Regulation of high capacity wells
- Stormwater management practices
- Enhanced rainfall infiltration systems in strategic locations
- Continued and increased reliance on shallow aquifer water
- Targeted stormwater recharge of shallow aquifer
- Continued reliance on deep aquifer water with treatment
- Extension of Lake Michigan supply to selected communities east of the Divide
- Extension of Lake Michigan supply to selected communities straddling the Divide with current return flow
- Extension of Lake Michigan supply to the City of Waukesha



39

Questions

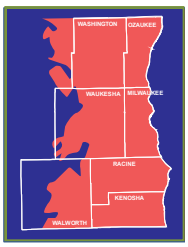
Laura K. Herrick, PE, CFM

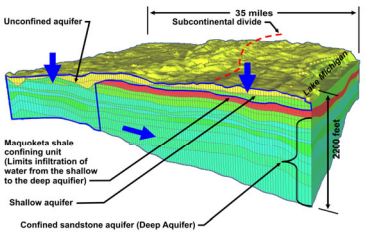
lherrick@sewrpc.org

40

Background

- General Hydrogeology of Southeastern Wisconsin





Private residential wells are generally in the shallow aquifer and 100 to 300 feet deep. Most municipal wells are 200 to 800 feet deep with some up to 2,200 feet deep, and are in both the shallow and deep aquifer.

Source: USGS.

41

300-2000
ITEM 1

Letter Requests

Number of records found: 34

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	1/25/2021	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 Northwest of Venice Avenue and Enterprise Road
PSC-2021-007	City of Waukesha	Waukesha	2/12/2021	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 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 Sturtevant	Racine	2/26/2021	5/14/2021	DeBack Farms - Pad F, (1) Building 04, 22, 30-1 Northwest of Venice Avenue and Enterprise Road
PSC-2021-016	Village of Sturtevant	Racine	3/12/2021	4/23/2021	Project M. (1) Guardhouse 03, 22,0-1 Northwest of Venice Avenue and Enterprise Road

Number	Civil Division	County	Date Received	Date Answered	Location
PSC-2021-017	Village of Mt. Pleasant	Racine	3/4/2021	4/29/2021	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)
PSC-2021-018	City of New Berlin	Waukesha	3/28/2021	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 St. (STH 67) between Market St. 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 Building 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 (6) 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) Addison 05, 22, 19-4 9141 S. 13th Street
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	5/27/2021	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

Letter Requests

Number of records found: 60

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, 19,29-1 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, 23-4 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 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	Village of 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-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
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

Number	Civil Division	County	Date Received	Date Answered	Location
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 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	City of Pewaukee	Waukesha	2/22/2021	4/20/2021	321 Riverside, (36) Single-family Lots 07, 19, 15-1 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) Building 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, 10-2
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 Wanski, (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

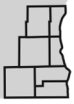
Number	Civil Division	County	Date Received	Date Answered	Location
SSE-046-21	City of Muskego	Waukesha	3/22/2021	5/21/2021	Mallard Pointe, (45) Single-family Lots 05, 20, 13-3 05, 20, 13-4
SSE-046-21	City of Muskego	Waukesha	3/22/2021	5/21/2021	Mallard Pointe, (45) Single-family Lots 05, 20, 13-3 05, 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
SSE-048-21	Village of Caledonia	Racine	4/28/2021	5/14/2021	DeBack Industrial 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' 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, 15-4
SSE-053-21	Village of Union Grove	Racine	5/13/2021	6/10/2021	Single-family Development 03, 21, 32-4
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-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

300-2000
ITEM 2

COPY

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
W239 N1812 ROCKWOOD DRIVE • PO BOX 1607 • WAUKESHA, WI 53187-1607• TELEPHONE (262) 547-6721
FAX (262) 547-1103

Serving the Counties of: KENOSHA
MILWAUKEE
OZAUKEE
RACINE
WALWORTH
WASHINGTON
WAUKESHA



March 26, 2021

Mr. Anthony D. Petersen, P.E.
Senior Project Manager
Ruekert & Mielke, Inc.
W233 N2080 Ridgeview Parkway
Waukesha, WI 53188

Re: SEWRPC No. CA-405-377

Dear Mr. Petersen:

This will respond to your email message of August 30, 2019, requesting that the Commission staff conduct a field inspection of the Area D TIF District site. The project area is located south of West Oakwood Road, west of South 27th Street, and north of County Line Road in parts of U.S. Public Land Survey Section 36, Township 5 North, Range 21 East, City of Franklin, Milwaukee County, Wisconsin. The purpose of the field inspection was to determine if wetland boundaries delineated by the Commission staff at the Area D TIF District site in 2015 remain valid.

Pursuant to your request, Commission staff conducted field inspections of the project area on April 20, 22, 27, and 28, and May 4, 2020. Most wetland boundaries staked in 2015 remain valid. Wetland boundaries that have since 2015 changed were re-staked in the field. 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
#256761 – CA405-377 Area D TIF District 2020 Wetland Verification

Enclosure (#257077)

cc: Mr. Joseph Eberle, P.E., Ruekert & Mielke, Inc. (w/enclosure)
Ms. Tina Myers, PWS, raSmith (w/enclosure by email)
Ms. Calli Berg, City of Franklin (w/enclosure by email)
Mr. Glen Morrow, P.E., City of Franklin (w/enclosure by email)
Mr. Ryan Pappas, Wisconsin Department of Natural Resources (w/enclosure by email)
Ms. Kara Kikkert, Wisconsin Department of Natural Resources (w/enclosure by email)
Ms. April Marcangeli, U.S. Army Corps of Engineers (w/enclosure)

WETLAND DELINEATION REPORT

AREA D PROPOSED TIF DISTRICT - 2020 FIELDWORK (SW CORNER OF OAKWOOD ROAD AND SOUTH 27TH STREET)

Section 36, T5N, R21E
CITY OF FRANKLIN,
MILWAUKEE 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: February 23, 2021

WETLAND & NATURAL AREA DELINEATION REPORT OVERVIEW

(Based upon WDNR WETLAND Delineation Confirmation Request Check List)

INTRODUCTION

- Who requested the delineation – **Mr. Anthony Petersen, P.E., Senior Project Manager, Ruekert & Mielke, on behalf of the City of Franklin**
- Why the delineation was undertaken – **Confirmation/update to SEWRPC 2015 delineation**
- Dates the field work was completed – **April 20, 22, 27, and 28; and May 4, 2020**
- Who conducted field work – **Christopher Jors, Jennifer Dietl, Zofia Noe, and Shane Heyel**
- Statement of Qualifications
- GIS Support – **Bradley Subotnik**

METHODS

- Description of Methods
- Sources Reviewed
  - Milwaukee 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 4O** (2020, 2015, 2013, 2010, 2007, 2005, 2000, 1995, 1990, 1985, 1980, 1975 1970, 1963, 1956)
  - SEWRPC Sanitary Sewer Service Area Mapping – **Exhibit 5**
  - Advance Identification (ADID) Wetland Mapping – **Exhibit 6**
  - NRCS Draft Wetland Inventory Map – **See below**
  - National Agriculture Imagery Program (NAIP) & Farm Service Agency (FSA) Images – **See below**
- Description of any site-specific agency guidance (site meetings, etc.) – **None**

RESULTS AND DISCUSSION

- Antecedent hydrologic condition analysis – **Normal**
- Previous wetland delineation mapping – **SEWRPC – 2015, 2018 & 2019**
- Existing environmental mapping (WWI mapping, Soil survey, etc.)
- Amount and types of wetland in the project area
- Wetland/upland boundary explanation
- Disturbed and problematic areas encountered
- Other considerations

LITERATURE CITED

Wetland Delineation Map – **Exhibit 7**

Vegetation Surveys, Wetland Delineation Data Forms, and Site Photos

- Wetland, Natural Area, and Critical Species Habitat Vegetation Surveys – **Exhibits 8A through 8D**
- Wetland Determination Data Forms – Midwest Region – **Exhibit 9**
- Site Photos – **Exhibit 10**

NAIP/FSA Image review

- NAIP/FSA Review Areas – **Exhibit 11**
- NAIP/FSA Hydrological Review Record – **Exhibit 12**
- Images of Normal Precipitation Years – **Exhibit 13**
- Copy of Draft NRCS Wetland Inventory map – **Exhibit 14**

INTRODUCTION

This wetland delineation report responds to an August 30, 2019, email request from Mr. Anthony Petersen, P.E., Senior Project Manager, Ruekert & Mielke, on behalf of the City of Franklin, to confirm or re-delineate the boundaries of wetlands within the proposed Area D TIF District that the Commission originally delineated in 2015. The project area is located south of West Oakwood Road, west of South 27th Street, and north of County Line Road, in U.S. Public Land Survey Section 36, Township 5 North, Range 21 East, City of Franklin, Milwaukee County, Wisconsin.

The current (2020) project area is outlined in yellow on Exhibit 1, as well as the prior project areas in 2019 and 2018 that are outlined in green and orange, respectively. The current project area is comprised largely of agricultural fields and the outer edges of mature woodlands. The 2020 project area does not include lands delineated by SEWRPC in 2018 (areas with orange outline on Exhibit 7) along the West Oakwood Road right-of-way, the northern end of Elm Road Woods-North Critical Species Habitat, the West Elm Road right-of-way, and the eastern edge of Root River Wet-Mesic Woods-West Natural Area. Further, the 2020 project area does not include lands delineated by SEWRPC in 2019 (light green outline on Exhibit 7) along the western edge of Elm Road Woods Natural Area just south of West Elm Road. The wetland delineations by SEWRPC in 2018 and 2019 typically remain valid until 2023 and 2024, respectively.

Finally, the 2020 project area excludes two other areas within the overall TIF District that were part of the 2015 project area. These areas were under construction, with ongoing earth moving activities, when SEWRPC staff conducted their fieldwork in late April and early May 2020: A construction corridor where utilities were being installed west of the terminus of West Elm Road, extending between West Oakwood Road and a point about 800 feet north of County Line Road; and lands on the north side of County Line Road in the southeastern part of the TIF District site, within and adjacent to a large pond, where significant earthwork and drainageway diversion were underway.

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: UW-La Crosse Critical Methods Workshop on March 4, 2020; 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, Senior Specialist-Biologist, earned Bachelor's degrees in Biology and Environmental Science from Carroll University in 1992. Jennifer has worked at SEWRPC 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 SEWRPC, she worked for the Wisconsin Department of Transportation – Green Bay as an LTE Environmental Analysis and Review Specialist – and the WDNR – Green Bay as an LTE Hydrologist. Jennifer attended the UW-La Crosse Critical Methods Workshop on March 4, 2020; the 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 WDNR Wetland Delineation & Wetland Rapid Assessment Methodology Workshop on April 23, 2014.

Zofia Noe, Senior Specialist-Biologist, joined the wetland delineation team in July 2013. She holds a Bachelor's degree in Biology and Chemistry from St. Mary's College of Maryland and a Masters Degree in

Coastal Marine and Wetland Studies from Coastal Carolina University. Zofia has completed several training workshops including UW-Extension Aquatic Plant Identification and Assurance, and UW-La Crosse Basic Wetland Plant Identification (2015) and Basic Wetland Delineation (2019). Zofia has experience in a variety of environmental assessments including water quality, aquatic plant, and upland vegetation surveys.

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). His experience includes seven years with the Wisconsin Department of Natural Resources, most notably four years as a water management specialist regulating waterways and wetlands. As an environmental specialist with Atkins Limited, U.K. from 2005-09, Shane carried out pollution and flood risk assessments for the English Highways Agency and sewer network modeling for major British water companies. More recently, as an independent consultant in Wisconsin, he helped develop a site restoration plan for a proposed wetland mitigation bank. He completed UW-La Crosse Wetland Delineation Workshops in August 2015 (Basic) and August 2016 (Advanced), the Basic Plant ID Workshop in July 2017, and the UW-La Crosse Critical Methods Workshop in 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 the field inspection, Commission staff reviewed the following data sources that were available and applicable to the subject project area:

- Milwaukee 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 images (Exhibit 4A-4O)
- SEWRPC Sanitary Sewer Service Area mapping (Exhibit 5)
- ADID wetland mapping (Exhibit 6)
- NAIP/FSA Images (Exhibit 13)
- NRCS draft wetland inventory mapping (Exhibit 14)
- Precipitation data from the NRCS "WETS" tables
- SEWRPC's February 17, 2016, wetland delineation report for the original Area D TIF District project area

RESULTS AND DISCUSSION

Christopher Jors, as lead field investigator and report author, supervised and approved all aspects of the wetland verification and re-delineation in the field, data compilation and analysis, and preparation of this report. Wetland boundaries originally staked by SEWRPC and surveyed by Ruekert & Mielke in 2015 were reviewed for changes on April 20, 22, 27, and 28; and May 4, 2020. This involved walking the surveyed wetland boundaries from 2015 that were overlaid onto aerial photography on a Samsung Tablet with Global Positioning System (GPS) capabilities. Soils, vegetation, and hydrology were recorded at 123 sample sites within the 2020 project area. Most of the previously delineated wetlands were confirmed unchanged, and therefore remain valid. Where changes had occurred or new wetlands discovered, these wetland boundaries were marked with orange wire flags and ribbon. Commission staff used a sub-meter-accuracy Global

Positioning System (GPS) device to record the newly staked wetland boundaries, the sample site locations, and 1 soil probe location.

The results of the 2020 field inspections for the project area are illustrated on Exhibit 7. The 2020 project area is outlined in yellow; 2015 wetland boundaries that remain valid are shaded blue, the re-staked and new wetland boundaries are shaded red, the sample site locations and numbers are yellow dots and yellow squares, respectively; the soil probe is shown as a red triangle, and the numbered plant community areas are shown as yellow circles.

Exhibit 7 also shows the 2018 and 2019 project areas and the results from those field inspections. The 2018 projects areas are outlined in orange; the 2018 wetland boundaries are outlined in blue with green shading; the 2018 sample site locations and numbers are orange dots and orange squares, respectively; and the 2018 numbered plant community areas are shown as orange circles. The 2019 project area is outlined in light green; the 2019 wetland boundaries are outlined in blue with yellow shading; the 2019 sample site locations and numbers are green dots and green squares, respectively; and the 2018 numbered plant community areas are shown as green circles.

Finally, Exhibit 7 identifies several important natural resource designations. These include two SEWRPC-designated Natural Areas outlined in red: Root River Wet-Mesic Woods – West, a Natural Area of countywide or regional significance (NA-2) located to the southwest, and Elm Road Woods, a Natural Area of local significance (NA-3), located in the southcentral part of the project area. A Critical Species Habitat known as Elm Road Woods – North is present in the northcentral part of the project area. Other natural resource elements include primary environmental corridor outlined in dark green and isolated natural resource area outlined in purple.

Antecedent Hydrologic Conditions

Climatological data are 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 period related to the field inspection date In this case, both data sets were available from MILWAUKEE MITCHELL INTL AP.

April 20, 22, 27, 28 and May 4, 2020	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	April	2.97	3.86	4.47	3.88	Normal	2	3	6
2nd prior month	March	1.38	2.20	2.66	3.67	Wet	3	2	6
3rd prior month	February	1.01	1.68	2.04	0.91	Dry	1	1	1
									Sum = 13

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

Conclusion: Normal

While the above analysis indicated normal precipitation, the May 4th visit followed a particularly wet week, including 2.63 inches of rain over a three-day period (April 28-30).

Previous Wetland Delineation Mapping

SEWRPC carried out a wetland delineation covering a majority of the AREA D TIF District site on May 26 and 27; June 2, 11, and 17; and August 6, 2015. Pursuant to planning objectives at the time, the focus of the 2015 delineation was primarily to delineate wetlands on the actively cropped lands and a 50-foot perimeter for woodlands within the TIF District project area. The results of the 2015 work were provided in a wetland delineation report with a cover letter dated February 17, 2016.

SEWRPC also completed wetland delineations for smaller project areas within and directly adjacent to the original project area. These delineations occurred in 2018 and 2019, with reports dated November 13, 2018 and November 27, 2019, respectively.

Existing Environmental Mapping

A review of the Milwaukee County topographic mapping (Exhibit 1) indicates that the project area contains rolling terrain with several drainage ways and tributaries to the Root River. The Root River channel is about 500 feet from the southwest end of the project area and about 200 feet from the southeast corner. Elevations in the project area range from a high of approximately 744 feet above National Geodetic Vertical Datum, 1929 adjustment (NGVD 29), along a ridge in the southwestern portion of the project area, to a low of 672 feet in the southeastern corner of the project area. Surface waters within the project area flow either directly to the Root River itself or reach the Root River via tributaries. Surface waters within or adjacent to the northcentral and northwestern portion of the project area, including drainage ways and two excavated ponds, generally flow in a westerly direction and are associated with an unnamed tributary to the Root River. Contour lines indicate two drainage ways in the southeastern portion of the project area that carry surface flows toward a constructed pond just outside the project area along County Line Road. Finally, the map shows a surface water tributary to the Root River along the southern end of the eastern project area boundary along South 27th.

The WDNR Surface Water Data Viewer (WWI) map (Exhibit 2) indicates that the project area includes multiple wetland types including emergent/wet meadow (E2K), farmed/un-vegetated wet soil (F0Kf), scrub/shrub – emergent/wet meadow (S3/E2K), forested (T3K), forested – emergent/wet meadow (T3/E2K), and open water (W0H and W0Hx). Wetland indicators within the project area include areas of NRCS-mapped Ashkum silty clay loam (AsA), Blount silt loam (BlA), and Ozaukee silt loam (OzaB).

WDNR mapping indicates two first order macroinvertebrate streams on the west side of the project area that are associated with an unnamed tributary to the Root River. No other information is available from WDNR for these waterways. WDNR does not map two surface waters identified by SEWRPC during the field inspections: A northwesterly-flowing tributary branch beginning at the west end of West Elm Road and a southerly flowing roadside waterway along South 27th Street in the southeastern end of the project area.

The NRCS Soil Survey mapping (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 (%)
Ashkum silty clay loam (AsA)	0-2	Predominantly Hydric	97	Not Applicable (N/A)	0.8
Blount silt loam (BlA)	1-3	Predominantly Non-hydric	10	Ashkum soils, 10 , depressions	20.4
Fox loam (FoB)	2-6	Non-hydric	0	N/A	2.6
Martinton silt loam (MgA)	1-3	Predominantly Non-hydric	7	Montgomery soils, 7%, depressions	1.2
Ozaukee silt loam, (OzaB)	2-6	Predominantly Non-hydric	6	Ashkum-drained, 0-7%, end moraines, ground moraines Pewamo-drained, 0-7%, depressions and drainage ways on ground moraines	61.0
Ozaukee silt loam, (OzaB2)	2-6, eroded	Predominantly Non-hydric	6	Ashkum-drained, 0-7%, end moraines, ground moraines Pewamo-drained, 0-7%, depressions and drainage ways on ground moraines	6.6
Ozaukee silt loam, (OzaC2)	6-12, eroded	Non-hydric	0	N/A	7.4

Exhibit 3 also indicates FEMA-mapped one percent-annual-probability floodplain associated with the Root River in the southeastern end of the project area.

Historical aerial photos were reviewed going back to 1956. Orthophotographs (2020, 2015, 2013, 2010, 2007, 2005, 2000, and 1995) and aerial photos (1990, 1985, 1980, 1975, 1970, 1963, and 1956) were reviewed as summarized in the table below, and are attached (Exhibits 4A to 4O).

Year	Changes in Land Use Observed on Aerial Photography from 1956 to 2020
1956	Land use in the general area is predominantly agriculture, largely comprised of cropland, and to a lesser extent woodland and idle land. Five homesteads are scattered throughout the project area. Faint surface drainages are visible in the cropland, roughly similar to present-day. Woodland coverage is also very similar, although the woodlands are more open, particularly to the north and southwest. West Elm Road appears to serve as a long driveway to a homestead in the west-central part of the project area. USH 41 serves as the major north-south transportation corridor, prior to the construction of the freeway. County Line Road is aligned differently at the southeast corner of the project area when compared to present-day.
1963	A small pond has been excavated in the northern woodlot at the edge of a 2018 project area.
1970	The pond has been enlarged in the northern woodlot. Standing water is apparent at the edge of an agricultural field south of the west end of West Elm Road and in an idle area in the southwest end of the project area. Commercial/industrial development has begun at the intersection of West Elm Road and USH 41. USH 41 has been expanded to a divided highway and Interstate Highway 94 has been constructed.
1975	Linear features are especially apparent in the cropland on this image, likely revealing the location of drain tiles. A second pond has been excavated in the northern woodlot. Commercial/industrial development has expanded at the intersection of West Elm Road and USH 41.
1980	Much of the land north of West Elm Road is no longer cropped, making way for commercial/industrial development, including a trucking business at the edge of the 2020 project area. A wetness signature is apparent in the agricultural field just north of the trucking business. County Line Road has been re-aligned to the north side of the Root River near the southeast corner of the project area, essentially abandoning the old roadbed where it crossed the Root River.
1985	Development continues north of West Elm Road. A faint surface drainage is apparent in the western end of the project area, beginning in the vicinity of land disturbance north of the west end of West Elm Road. The bridge at the old County Line Road crossing has been removed.
1990	No significant changes noted.
1995	Drain tile lines are again very apparent in the cropped fields, particularly in the northeastern and southeastern fields. Parallel lines in the southeastern cropland indicate drain tile laterals.
2000	The homestead buildings in the west-central part of the project area have been razed. Most land bordering West Elm Road has been developed. An indoor golf driving range facility and large pond have been constructed along County Line Road in the southeastern end of the project area.

Year	Changes in Land Use Observed on Aerial Photography from 1956 to 2020
2005	Two tributary branches are apparent in the cropland in the northwestern part of the project area, meeting at a wetness signature on the western project area boundary. A significant portion of the agricultural field north of the driving range facility is idle when this photo was taken.
2007	The wetness signature area noted in 2005 in the northwestern part of the project area is not cropped.
2010	A detention pond has been constructed on the northwestern edge of the project area, just north of where the tributary branches come together. The idle land north of the driving range facility has been returned to crops. The dome over the driving range facility has been taken down.
2013	Standing water is apparent in the cropland in the northeastern portion of the project area, north of the trucking facility.
2015	No significant changes noted.
2020	A north-south corridor of land disturbance is evident in the cropland north of the west end of West Elm Road. A drainage diversion channel has been dug around the west side of the large pond in the southeastern end of the project area and water levels in the pond appear to be somewhat lower. The driving range facility and parking lot have been removed.

SEWRPC sanitary sewer service area mapping (Exhibit 5), taken from the June 2011 Amendment to Community Assistance Planning Report No. 176 (2nd Edition), indicates that the project area is in the planned sanitary sewer service area for the City of Franklin. Primary environmental corridor (PEC) associated with the Root River is shown in the southeast corner of the project area and extending slightly into the project area along the southern part of the western boundary. The PEC also abuts the western project area boundary north of Elm Road (extended) in three areas. Two isolated natural resource areas (INRA) are also mapped in the northcentral and southcentral part of the TIF District site. The PEC and INRA mapping have been revised based upon findings from the 2015, 2018, 2019, and 2020 field inspections to include wetlands and woodlands which met the criteria for inclusion within adjacent PEC and INRA lands.

The ADID wetland mapping (Exhibit 6) indicates the presence of PEC just inside and abutting the western project area boundary as described above. The PEC includes WWI-mapped T3K and S3/E2K wetlands immediately outside the western and northwestern portions of the project area, respectively. Accordingly, these wetlands are classified as ADID wetlands. The U.S. Environmental protection Agency (USEPA) deems ADID wetlands unsuitable for the discharge of fill material under Section 404 of the Clean Water Act. SEWRPC's site investigations in 2015, 2018, 2019, and 2020, determined that amendments to both the PEC and wetland mapping were required. Specifically, the mapped ADID wetlands were found to extend into the western portion of the project area as shown on Exhibit 7. If the ADID wetland mapping is updated in the future, the changes illustrated on Exhibit 7 will be reflected.

Amount and Types of Wetlands in the Project Area

Twenty-four wetland plant community areas (PCAs) were identified and inventoried within the project area (see Exhibit 7). A list of vascular plant species observed during the field inspection was prepared for each PCA as well as plant community type(s), dominant plant species, disturbances, and any critical plant and animal species (Exhibit 8A). The table below summarizes characteristics for each PCA.

PCA Number	Acreage	PCA Type(s)	Dominant Species	Critical Species
1	0.13	Atypical (farmed) wetland and fresh (wet) meadow with stands of hardwood swamp associated with an unnamed tributary to the Root River.	*Phalaris arundinacea*--Reed canary grass	None[a]
2	2.20	Atypical (farmed) wetland and fresh (wet) meadow (partly degraded) with stands of hardwood swamp associated with an unnamed tributary to the Root River.	*Equisetum arvense*--Common horsetail *Erigeron philadelphicus*--Marsh fleabane *Phalaris arundinacea*--Reed canary grass *Ulmus americana*--American elm	None[a]
3	0.11	Constructed pond with open water, shrub-carr, and second growth Southern wet lowland hardwoods	*Cornus obliqua*--Silky dogwood *Cornus racemosa*--Gray dogwood *Fraxinus pennsylvanica*--Green ash	None[a,b]

PCA Number	Acreage	PCA Type(s)	Dominant Species	Critical Species
4	--	Constructed wet roadside ditch with shallow marsh and fresh (wet) meadow	*Phalaris arundinacea*--Reed canary grass *Poa pratensis*--Kentucky bluegrass *Typha angustifolia*--Narrow-leaved cat-tail	None[a]
5	1.10	Atypical (farmed and mowed) wetland, saline (wet) meadow, and shallow marsh with small stands of hardwood swamp	*Eleocharis palustris*--Common spike-rush *Eleocharis obtusa*--Spike-rush *Juncus bufonius*--Toad rush *Phalaris arundinacea*--Reed canary grass *Puccinellia distans*--Alkali grass *Typha angustifolia*--Narrow-leaved cat-tail	None[a]
6	0.01	Small ephemeral pond with hardwood swamp	*Rhamnus cathartica*--Common buckthorn *Ulmus rubra*--Slippery elm	None[a,c]
7	2.90	Shallow marsh, fresh (wet) meadow (partly degraded), atypical (farmed) wetland, and hardwood swamp associated with an unnamed tributary to the Root River.	*Fraxinus pennsylvanica*--Green ash *Phalaris arundinacea*--Reed canary grass *Salix interior*--Sand bar willow *Typha angustifolia*--Narrow-leaved cat-tail	None[a,c]
8	0.08	Fresh (wet) meadow with scattered lowland shrubs.	*Phalaris arundinacea*--Reed canary grass	None[a]
9	0.09	Ephemeral ponds with shrub-carr.	*Cornus racemosa*--Gray dogwood	None[a]
10	1.20	Atypical (farmed) wetland and fresh (wet) meadow (partly degraded) with stands of shrub-carr and hardwood swamp.	*Cornus racemosa*--Gray dogwood *Phalaris arundinacea*--Reed canary grass	None[a,d]
11	0.69	Atypical (farmed) wetland and fresh (wet) meadow (partly degraded), shrub-carr, and hardwood swamp.	*Carex grisea*--Wood gray sedge *Carex radiata*--Straight-styled wood sedge *Floerkea proserpinacoides*--False mermaid *Ulmus americana*--American elm	None[a,d]
12	0.02	Atypical (farmed) wetland and fresh (wet) meadow	*Poa trivialis*--Rough bluegrass	None[a]
13	0.04	Atypical (farmed) wetland and fresh (wet) meadow.	*Echinochloa crus-galli*--Barnyard grass *Panicum dichotomiflorum*--Bent knee grass	None[a]
14	0.54	A natural drainage way with atypical (farmed) wetland.	*Agrostis gigantea*--Redtop grass *Setaria pumila*--Yellow foxtail *Veronica peregrina*--Purslane speedwell	None[a]
15	0.04	Atypical (farmed) wetland and fresh (wet) meadow.	*Agrostis gigantea*--Redtop grass	None[a]
16	0.07	Degraded fresh (wet) meadow and hardwood swamp within a drainage way.	*Phalaris arundinacea*--Reed canary grass	None[a]
17	0.83	Constructed roadside wet ditch with open flowing water, shallow marsh, and fresh (wet) meadow, tributary to the Root River.	*Phalaris arundinacea*--Reed canary grass *Schoenoplectus fluviatilis*--River bulrush *Typha angustifolia*--Narrow-leaved cat-tail	None[a]
18	0.08	Fresh (wet) meadow associated with a draingeway.	*Phalaris arundinacea*--Reed canary grass	None[a,c]
19	0.92	Atypical (farmed) wetland.	*Veronica peregrina*--Purslane speedwell	None[a,c]
20	1.20	Open water, atypical (farmed) wetland, fresh (wet) meadow, and hardwood swamp.	*Fraxinus pennsylvanica*--Green ash *Phalaris arundinacea*--Reed canary grass *Salix amygdaloides*--Peach-leaved willow *Salix interior*--Sand bar willow	None[a]
21	0.31	Atypical (farmed) wetland and fresh (wet) meadow with scattered second growth, Southern wet to wet-mesic lowland hardwoods along a drainage way.	*Bromus inermis*--Smooth brome grass *Poa pratensis*--Kentucky bluegrass *Salix amygdaloides*--Peach-leaved willow *Veronica peregrina*--Purslane speedwell	None[a]

PCA Number	Acreage	PCA Type(s)	Dominant Species	Critical Species
22	1.40	Fresh (wet) meadow.	*Acer negundo*--Boxelder *Impatiens capensis*--Jewelweed *Phalaris arundinacea*--Reed canary grass *Salix amygdaloides*--Peach-leaved willow	None[a]
23	0.05	Fresh (wet) meadow and atypical (farmed) wetland.	*Agrostis gigantea*--Redtop grass	None[a]
24	0.96	Atypical (farmed) wetland and fresh (wet) meadow with a natural drainageway.	*Phalaris arundinacea*--Reed canary grass	None[a,d]

[a] *While no Federal or State-designated Special Concern, Threatened, or Endangered species were observed in this PCA, the U.S. Fish & Wildlife Service identifies the entire project area as potential habitat for Rusty patched bumble bee (*Bombus affinis*), a Federal Endangered species. Specifically, wetland PCA numbers 1 through 13 are within a "high potential zone"; PCA numbers 15-17, 19-21, and 23, are in a "low potential zone"; and PCA numbers 14, 18, 22, and 24 fall within both zones. A map illustrating the potential habitat for this endangered species can be viewed at www.fws.gov/midwest/Endangered/insects/rpbb/rpbbmap.html.*

[b] *This PCA is a small part of the Elm Road Woods-North Critical Species Habitat (CSH). See Exhibit 8B for a preliminary list of plant species recorded throughout the CSH. Black haw (*Viburnum prunifolium*), a State-designated Special Concern species, was observed growing in the adjacent upland woodlands.*

[c] *This PCA is at the edge of Root River Wet-Mesic Woods – West, a Natural Area of countywide or regional significance (NA-2). See Exhibit 8C for a preliminary list of plant species recorded throughout the NA. Black haw (*Viburnum prunifolium*), a State-designated Special Concern species, was observed growing in the adjacent upland woodlands.*

[d] *This PCA is at the edge of Elm Road Woods, a Natural Area of local significance (NA-3). See Exhibit 8D for a preliminary list of species observed in the Elm Road Woods Natural Area. Black haw (*Viburnum prunifolium*) and Heart-leaved skullcap (*Scutellaria ovata*), both State-designated Special Concern species, were observed growing in the adjacent upland woodlands.*

Wetland/Upland Boundary Explanation

One hundred and twenty-three 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 9. The locations of the sample sites are shown on Exhibit 7. Generally, the wetland boundaries were determined using breaks in topography, changes in vegetation composition, visual identification of wetland hydrology, and presence of hydric soils. Wetland boundaries originally staked by SEWRPC and surveyed by Ruekert & Mielke in 2015 were reviewed for changes. This involved walking the surveyed wetland boundaries from 2015 that were overlaid onto aerial photography on a Samsung Tablet with Global Positioning System (GPS) capabilities. Those wetland boundaries that had changed, or were not staked or surveyed in 2015, were staked and GPS-located during the 2020 field visits.

Disturbed and Problematic Areas Encountered

Sample Site Numbers 1, 17, 60, and 107, all had "significantly disturbed" vegetation due to ongoing agricultural practices such as cultivation. Sample Sites 1, 17, and 60, were all bare soil when inspected and lacked any vegetation. While Sample Site 107 was vegetated, it was managed as a hay field and did not pass the dominance or prevalence index tests for hydrophytic vegetation. However, all four sites had sufficient indicators of both wetland hydrology and hydric soils. In addition, sample sites recorded in 2015 in the vicinity of Sample Sites 1, 17, and 60, all had hydrophytic vegetation at that time. Consequently, Sample Sites 1, 17, 60, and 107, were all determined to be in wetland with problematic hydrophytic vegetation.

Sample Site Numbers 56, 99, 115, and 122, all had "naturally problematic" vegetation due to being situated in drainageways where surface water has prevented establishment of vegetation. All four sites met both wetland hydrology and hydric soils parameters. In addition, a sample site recorded in 2015 in the vicinity of Sample Site 115 was found to have hydrophytic vegetation at that time. Accordingly, Sample Sites 56, 99, 115, and 122, were all determined to be in wetland with problematic hydrophytic vegetation.

NAIP/FSA Image Review

A review of NAIP/FSA images was conducted for potential farmed wetland areas within the project area as displayed on Exhibit 11 as areas A through J. The results of this review are provided in tabular form on Exhibit 12. Available images of the questionable areas dating from 1991 to 2018 were reviewed. A determination of whether the image review indicated the presence of wetland hydrology in the farmed areas was based upon images taken with normal antecedent precipitation. NAIP/FSA images taken with normal antecedent precipitation [2015, 2006, 2002, 2001, 2000, 1998, 1997, 1996, 1993, and 1991] are included in this report as Exhibit 13.

The image review indicated that Area B (80 percent wetness signatures), Area C (60%), Area E (80%), Area F (100%), Area H (100%) Area I (60%), and Area J (80%), each exhibited sufficient signatures to indicate wetland hydrology is likely present. Conversely, Areas A (30%), D (30%), and G (40%), each lacked sufficient wetness signatures indicating that wetland hydrology is not likely to be present. It should be noted that this image review only indicates whether it is likely or unlikely that wetland hydrology is present. Ultimately, the onsite field inspection determined that at least a small portion of each review area met wetland hydrology criteria.

NRCS Draft Wetland Inventory

The NRCS draft wetland inventory mapping (Exhibit 14) indicates wetland (W) in the west-central part of the project area. Not inventoried (NI) lands, which coincide with uncropped areas, are present in the southwest and south-central part of the project area, and in the larger wooded portions at the edges of the project area. Scattered over much of the project area is prior converted (PC) cropland. PC land is defined as wetland converted to cropland prior to December 1985, which has produced a crop and does not meet farmed wetland hydrology criteria. Finally, the largest coverage over the project area is upland.

Other Considerations

As noted above, the Area D TIF District properties contain several important natural resource designations as shown on Exhibit 7. These include two SEWRPC- designated Natural Areas: Root River Wet-Mesic Woods – West, a Natural Area of countywide or regional significance (NA-2) located to the southwest, and Elm Road Woods, a Natural Area of local significance (NA-3), located in the southcentral part of the site. A Critical Species Habitat (CSH) known as Elm Road Woods – North is present in the northcentral part of the site.

SEWRPC's 2010 *Amendment to the Natural Areas and Critical Habitat Protection and Management Plan for the Southeastern Wisconsin Region,* recommends protective ownership of Root River Wet-Mesic Woods – West by Milwaukee County. This would represent an expansion of current Milwaukee County ownership just west of the TIF District properties. The 2010 plan further recommends protective ownership of Elm Road Woods through acquisition by the City of Franklin. Plan recommendations for the Elm Road Woods – North CSH indicate preservation to the extent practicable without protective ownership.

Further, under SEWRPC VISION 2050, Table K.1, entitled *Guidelines for Development Considered Compatible with Environmental Corridors and Isolated Natural Resource Areas,* new streets and utilities, as well as buildings, are considered incompatible with natural areas and critical species habitats.

The nonagricultural performance standards set forth in Section NR 151.125 of the *Wisconsin Administrative Code*, 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.) and farmed wetlands are considered "less susceptible" requiring establishment of a

10- to 30-foot setback, depending on the 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*.

PCA number 4, consisting of a constructed roadside ditch, would be exempt from protective area performance standards. The highly susceptible ephemeral ponds associated with PCA numbers 6 and 9 typically receive a 75-foot protective area setback. Moderately susceptible wetlands, including the fresh (wet) meadow, open water, shrub-carr, and lowland hardwoods, found at PCA numbers 2 (north part), 3, 5 (east part), 7, 8, 10 (south part), 11 (west part), 17, 18, 20 (northeast part), 22, and 24 (east part), would typically receive a 50-foot setback. Less susceptible wetlands, such as farmed wetland and degraded fresh (wet) meadow, observed at PCA numbers 1, 2 (south part), 5 (west part), 10 (north part), 11 (east part), 12, 13, 14, 15, 16, 19, 20 (southwest part), 21, 23, and 24 (west part), typically receive a 10-30 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 suggested the City or their representative contact WDNR regarding approaches to meet the requirements. Finally, it is noted that no Federal or State regulatory jurisdiction determinations relative to any wetland permits or certifications are made under this report.

LITERATURE CITED

Southeastern Wisconsin Regional Planning Commission website at maps.sewrpc.org/regionallandinfo/regionalmapping

Southeastern Wisconsin Regional Planning Commission, 2010, Amendment to Planning Report No. 42, *A Natural Areas and Critical Species Habitat Protection and Management Plan for the Southeastern Wisconsin Region*, December 2010.

Amendment to SEWRPC Community Assistance Planning Report No. 176, Sanitary Sewer Service Area for the City of Franklin, Milwaukee County, Wisconsin (2nd Edition), (Amendment to the Regional Water Quality Management Plan, City of Franklin), June 2011, weblink at www.sewrpc.org/SEWRPCFiles/Publications/ssa/2011-06-amendment-franklin.pdf

Southeastern Wisconsin Regional Planning Commission, 2017, Planning Report No. 55, *Vision 2050 Volume III: Recommended Regional Land Use and Transportation Plan,* July 2017.

U.S. Army Corps of Engineers, 2016, State of Wisconsin Wetland Plant List.

U.S. Army Corps of Engineers, 2016, *Guidance for Offsite Hydrology/Wetland Determinations,* U.S. Army Corps of Engineers – St. Paul District, July 1, 2016.

U.S. Army Corps of Engineers, 2015, Special Public Notice: *Guidance for Submittal of Delineation Reports to the St. Paul District Corps of Engineers and the Wisconsin Department of Natural Resources*, U.S. Army Corps of Engineers – St. Paul District, March 2015.

U.S. Army Corps of Engineers, 2010, *Regional Supplement to the Corps of Engineers Wetland Delineation Midwest Region* (Version 2.0). U.S. Army Engineer Research and Development Center, August 2010.

U.S. Army Corps of Engineers, 1987, U.S. Army Corps of Engineers wetlands delineation manual. Wetlands Research Program Technical Report Y-87-1.

USDA, Natural Resources Conservation Service, Soil Survey Staff, Web Soil Survey. Website at websoilsurvey.sc.egov.usda.gov/

USDA, Natural Resources Conservation Service, 2016. *Field Indicators of Hydric Soils in the United States*, Version 8.0. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Committee for Hydric Soils. 2016.

USDA, Natural Resources Conservation Service, 2010. *National Food Security Act Manual, Fifth Edition, Part 514.60*, November 2010.

WDNR, Surface Water Data Viewer, website at dnrmaps.wi.gov/sl/?Viewer=SWDV

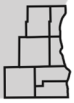
WDNR, 2015, *Guidance for the Establishment of Protective Areas for Wetlands in Runoff Management Rules, Wisconsin Administrative Code NR 151,* WDNR Bureau of Watershed Management Program Guidance, Storm Water Management Program, April 2015.

300-3000
ITEM 3

COPY

SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION
W239 N1812 ROCKWOOD DRIVE • PO BOX 1607 • WAUKESHA, WI 53187-1607• TELEPHONE (262) 547-6721
FAX (262) 547-1103

Serving the Counties of:
KENOSHA
MILWAUKEE
OZAUKEE
RACINE
WALWORTH
WASHINGTON
WAUKESHA



May 3, 2021

Ms. Theresa Loomer, WCMC
Administrator/Clerk
Village of Fontana on Geneva Lake
P.O. Box 200
Fontana, WI 53125

Re: SEWRPC No. CA-510-59

Dear Ms. Loomer:

This will respond to your email message of February 19, 2021, requesting that Commission staff field stake the primary environmental corridor (PEC) and wetland boundaries in the vicinity of a proposed stone patio expansion on the southwest side of the clubhouse building at the Big Foot Country Club property. The clubhouse is located at 770 Shabbona Drive in the Southwest one-quarter of U.S. Public Land Survey Section 14, Township 1 North, Range 16 East, Village of Fontana on Geneva Lake, Walworth County, Wisconsin.

Following the receipt of this request, a consultant for Big Foot Country Club, Mr. Timothy Lynch, PE, with Lynch Associates, notified Commission staff that Mr. David Meyer of Wetland & Waterway Consulting had been hired to field-stake the wetland boundaries in the vicinity of the patio expansion and that a wetland delineation by Commission staff was not necessary. Mr. Lynch provided a map dated March 30, 2021, showing Mr. Meyer's wetland delineation and the proposed patio addition area. Mr. Lynch also provided a map dated February 1, 2021, showing the extent of the surface waters in the vicinity of the patio expansion and distances from the edge of the surface waters to the patio work zone. Commission staff has prepared a map showing Mr. Meyer's field-staked wetland boundary and the surface waters identified by Mr. Lynch (see attached Exhibit 1).

Prior to scheduling the requested field inspection, Commission staff referenced the adopted environmental corridor mapping found in the Commission's Community Assistance Planning Report No. 219 entitled *Sanitary Sewer Service Area for the Villages of Fontana and Walworth and Environs, Walworth County, Wisconsin,* dated June, 1995. The relevant map from the sewer service area plan is attached here as Exhibit 2. The hatched area on Exhibit 2 covering a portion of the country club property is the adopted PEC. The PEC mapping in this case includes lands immediately north, west, and south of the clubhouse building, incorporating natural resource elements such as surface waters, wetland, woodland, and steep slopes. The sewer service area plan, and the environmental corridor mapping contained within the plan, have been adopted by the Village of Fontana, the Wisconsin Department of Natural Resources, and the Commission. Therefore, the environmental corridors shown on these maps are an important reference tool when there is a question about the extent of environmental corridor on a given property within a municipality that is served by sanitary sewer.

Pursuant to your request, Commission staff conducted an April 6, 2021, field inspection of lands in the vicinity of the clubhouse building. Commission staff field-staked and GPS-located the PEC boundary on the north side of the clubhouse building, which was based upon the outer canopy dripline of trees (see Exhibit 1). The woodland in this area is situated on a steep slope where spring seeps were observed downslope. Lands west of the clubhouse were comprised of scattered trees and turf grass on a west-facing slope leading down to the wetlands and surface waters at the toe of the slope. The surface waters consisted of a chain of ponds connected by creek channels, which flowed in a northerly direction. A westerly flowing spring-fed creek, which discharges into the southernmost pond, is located south of the clubhouse building. All surface waters in the vicinity of the clubhouse are identified on Exhibit 1. Finally, SEWRPC staff observed that work on the patio expansion construction was already underway.

While inspecting the surface waters in the vicinity of the clubhouse, Mr. Terry Tavera, PE, of Ruekert & Mielke, and Mr. Kevin Day, Department of Public Works Director, arrived at the site representing the Village of Fontana. Mr. Tavera and Mr. Day indicated that the surface waters south and west of the clubhouse are likely perennial waterways. When mapping PEC, SEWRPC typically applies a 75-foot riparian buffer from perennial waterways. Therefore, SEWRPC staff determined that a 75-foot riparian buffer from the surface waters would define the PEC boundary west and south of the clubhouse building. SEWRPC staff did not field-stake the PEC where the 75-foot riparian buffer defines the PEC boundary. It is recommended that Mr. Lynch add the PEC boundary to the site plan maps for the project by using a 75-foot setback from the edge of the surface waters he has defined. A list of plant species observed within the PEC lands is attached as Exhibit 3.

Commission staff would also note that there are upland portions of the Primary Environmental Corridor near the clubhouse. On a case-by-case basis, the Commission is able to find encroachments into the upland portions for a corridor in conformance with regional plans when the encroachment represents less than 10 percent of the upland corridor within a parcel. This specific point does not apply to the patio expansion in question, but could apply in the future if additional expansions of the clubhouse are proposed to be located within the upland portions of the corridor. Therefore, Commission staff thought it would be most transparent to communicate this information now.

It is our understanding that the extension of public or private sanitary sewer will not be necessary to complete this project. Therefore, a letter from SEWRPC making a determination on this project's conformance with the Fontana Sewer Service Area Plan and SEWRPC's regional plans is not necessary. However, SEWRPC staff would recommend that representatives for the Big Foot Country Club consider an alternative location for the new patio to be located outside the PEC, no closer than 75 feet from the edge of the surface waters mentioned above. Further, it is recommended that the patio addition area already under construction is restored to natural vegetation.

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/JED/CJJ/md
#257461 – CA510-59 Big Foot Country Club Property Letter

Enclosure (#257553)

cc: Mr. Timothy Lynch, PE, Lynch & Associates (w/enclosure by email)
Atty. Kim Howarth, Esq. (w/enclosure by email)
Mr. Terrance Tavera, PE, CFM, CPESC, Ruekert & Mielke (w/enclosure by email)
Mr. Kevin Day, Village of Fontana on Geneva Lake (w/enclosure by email)