SUMMARY NOTES OF THE OCTOBER 30, 2019 MEETING OF THE OAK CREEK WATERSHED RESTORATION PLAN ADVISORY GROUP

INTRODUCTION

The October 30, 2019 meeting of the Oak Creek Watershed Restoration Plan Advisory Group was convened at the Oak Creek Civic Center building at 9:10 a.m. The meeting was called to order by Laura Herrick, Chief Environmental Engineer, Southeastern Wisconsin Regional Planning Commission (SEWRPC). Attendance was taken by circulating a sign-in sheet.

In attendance at the meeting were the following individuals:

Members Present

Advisory Group Members

Bob Anderson	Professor of Biological Sciences, Wisconsin Lutheran College
Greg Failey	Environmental Manager, Milwaukee Mitchell International Airport
Dave Giordano	Executive Director, Root-Pike Watershed Initiative Network
Laura Herrick, Secretary	Chief Environmental Engineer, SEWRPC
Steve Keith	Principal Environmental Engineer, Milwaukee County Environmental Services
Julie Kinzelman	
	City of Racine Public Health Department
Janette Marsh	Nonpoint Source Technical Program Manager,
	U.S. Environmental Protection Agency, Region 5
Glen Morrow	City Engineer/Director of Public Works, City of Franklin
Cheryl Nenn	
Brian Russart	
Tom Slawski	

Guests and Staff Present

Joseph Boxhorn	Principal Planner, SEWRPC
Nan Calvert	Program Manager, Root-Pike Watershed Initiative Network
Michael Luba	President, Root-Pike Watershed Initiative Network
Aaron Owens	Senior Planner, SEWRPC
Mark Mittag	Senior Project Manager, Milwaukee Metropolitan Sewerage District
Jacob Zimmerman	Water Resources Engineer, Wisconsin Department of Natural Resources

Ms. Herrick welcomed all attendees to the third meeting of the Advisory Group for the Oak Creek Watershed Restoration Plan (Plan). Ms. Herrick briefly reviewed the agenda for the meeting, which included review of partial draft Plan Chapter 4, discussion of the December 2019 stakeholder meeting, and discussion of next steps for the Plan development.

REVIEW OF PARTIAL PLAN DRAFT CHAPTER 4, "INVENTORY FINDINGS"

Ms. Herrick next reviewed the text formatting for the partial Plan Chapter 4 "Inventory Findings", noting that sections shown in red text were to be completed in the future. This was done to allow the reader to understand how the completed text fit into the overall chapter. No comments were offered by the Advisory Group on this formatting.

Ms. Herrick continued the review of partial Plan Chapter 4 by discussing the water quantity conditions (Section 4.3) for the Oak Creek watershed. A brief review of the Lake Michigan Water Levels was

completed, with a discussion of the high water levels of 2019 and potentially higher levels predicted to occur in 2020. Mr. Keith asked if summer 2019 broke the record for Lake Michigan water levels. Ms. Herrick replied that she did not think the Lake Michigan water levels broke the record levels set in 1986.

[Secretary's Note: A follow up of the U.S. Army Corps of Engineers Detroit District website confirmed that June and July 2019 mean monthly Lake Michigan water levels were less than 0.1-foot below the record 1986 levels. The Corps is also projecting that Lake Michigan could break the 1986 peak water level records in 2020 based on predicted precipitation and temperature patterns.]

Ms. Herrick continued the review of Section 4.3 with the subsections on streamflow conditions and seasonal differences in streamflow. Mr. Mittag asked how the flow conditions impacted water quality conditions in Oak Creek. Mr. Boxhorn responded that the impact of flows depended on the water quality constituent. For example, higher flows would correspond to higher loadings of suspended solids. Lower flow conditions typically correspond to lower dissolved oxygen levels. Mr. Boxhorn noted that the correlation between flows and water quality is challenging for the Oak Creek watershed as we only have one U.S. Geological Survey (USGS) continuous stream gage, and we typically have monthly water quality grab samples.

Ms. Herrick next briefly discussed the flooding evaluation subsection within Section 4.3. She noted that the stream flooding section is intended to be brief as the impacts of stream flooding in the Oak Creek watershed have been documented in other reports. Ms. Marsh commented that she felt more narrative would be required in this section to meet the U.S. Environmental Protection Agency (USEPA) requirements for a Nine Key Element plan. Ms. Herrick indicated that she will follow up with Ms. Marsh after the meeting to discuss what additional narrative may be needed.

[Secretary's Note: Additional stream and stormwater flooding information was added to Section 4.3 and will be reviewed at the next Advisory Group meeting.]

Ms. Herrick next discussed the Section 4.3 subsection for the Mill Pond and dam. This section first discussed the dam and then discussed the Mill Pond. Ms. Nenn stated that she thought that a repair or abandon order from the Wisconsin Department of Natural Resources (WDNR) was sent to Milwaukee County sometime in the mid-2000s. Ms. Herrick indicated that SEWRPC staff would contact the WDNR regarding this and noted that this order may have led to the 2012 inspection of the dam.

[Secretary's Note: SEWRPC staff followed up with the WDNR and no repair or abandon order was found for the Mill Pond dam.]

No additional questions or comments were offered by the Advisory Group for partial Section 4.3 Water Quantity Conditions.

Ms. Herrick introduced SEWRPC staff member Joe Boxhorn to review partial draft Section 4.4, "Surface Water Quality". Mr. Boxhorn summarized the subsections describing water quality standards, designated uses and impairments, and water quality criteria. He noted that the water quality standards for Wisconsin are in flux right now. He explained that proposed changes to the bacteria criteria for recreational use have been approved by the Natural Resources Board and are making their way through the Wisconsin Legislature. He added that he anticipates that two other rules packages that affect dissolved oxygen, chlorophyll-*a*, biological criteria, phosphorus criteria, and biological response criteria to phosphorus concentrations will be reviewed by that Natural Resources Board sometime next year. Upon adoption of the proposed changes the Plan will be updated to reflect them. Mr. Boxhorn also indicated that the impaired waters map on page 182 of the draft text will be updated to reflect the changes proposed in the draft 2020

impaired waters list that the WDNR recently submitted to the U.S. Environmental Protection Agency. No questions or comments were offered by the Advisory Group for the first three subsections of Section 4.4.

[Secretary's Note: Updated Map 4.Impaired Waters is attached to these summary notes.]

Mr. Boxhorn next summarized the subsection describing the water quality monitoring data used in the Plan. Ms. Nenn commented that the sources of the monitoring data in the WDNR and EPA databases are not acknowledged in the data downloads. She noted it would be very helpful for grant and funding purposes if the data collected by Riverkeeper and others be documented in the data downloads. She asked that Riverkeeper be acknowledged in this section for the data that they have collected and provided to the WDNR's Water Action Volunteer program. Ms. Nenn also noted this lack of acknowledgement for the sources of water quality monitoring data is a national problem.

Mr. Boxhorn next gave a brief explanation of what the water quality box plots represent. Mr. Anderson asked if box plots can be used to show significant differences, or if they are meant to show trends. Mr. Boxhorn answered that the water quality box plots in Chapter 4 are meant to look at trends in the data between stations and time intervals as noted.

Mr. Boxhorn discussed the Section 4.4 subsection related to bacteria. As previously discussed, the standard for bacteria is changing from fecal coliform to E. coli bacteria. Thus both constituents are discussed in this subsection. Ms. Nenn inquired if the water quality analysis for bacteria in the Plan has done the comparison to the standards. Mr. Boxhorn replied that that work is in progress, and will be documented in the full Chapter 4 text. Ms. Nenn also commented that the decreasing fecal coliform trends shown for the mainstem Oak Creek on Figure Bact-1 (page 124) are a good sign, and not seen for most other urban streams in the Milwaukee metropolitan area. Ms. Marsh asked if the canine fecal contamination shown on the map on page 185 is domestic dog specific, and Mr. Russart asked if the testing can distinguish between domestic dogs, stray dogs, coyotes, and foxes. Ms. Kinzelman replied that the genetic markers cannot distinguish between canine sources. Ms. Nenn noted that communities are only required to monitor major outfalls that are 36 inches in diameter or greater for dry-weather flow and asked if all the outfalls to the mainstem and its two main tributaries were tested for genetic markers, or if only major outfalls were tested. Ms. Kinzelman indicated that not all outfalls were tested for genetic markers. She continued that her staff chose outfalls for testing based upon instream bacteria concentration data and observations of outfalls with dry-weather flow. Mr. Boxhorn responded that all the outfalls observed by SEWRPC staff will be documented in a Chapter 4 appendix, and the subset analyzed by the Racine Public Health Department will be noted. Ms. Nenn commented that the colors identifying the outfalls on the map on page 185 should be modified from green, which would intuitively represent good conditions.

Mr. Boxhorn discussed the Section 4.4 subsection describing chlorophyll-a conditions in the watershed. He noted that the WDNR has proposed a chlorophyll-a recreational use standard for aesthetics of 20 μ g/l. No questions or comments were offered by the Advisory Group for the subsection on chlorophyll-a.

[Secretary's Note: The proposed standard would apply to lakes, reservoirs, and impounded flowing waters. For the Oak Creek watershed, this would apply to the Mill Pond.]

[[]Secretary's Note: SEWRPC staff revised Table 4.Monitoring Sites (page 106-107) to indicate which sites include data collected by Milwaukee Riverkeeper through the Water Action Volunteers Program.]

[[]Secretary's Note: SEWRPC staff revised the outfall with canine fecal contamination symbol on the map to be yellow.]

Mr. Boxhorn discussed the Section 4.4 subsection related to dissolved oxygen. He noted that dissolved oxygen concentrations in natural waters are highly dependent on water temperature. Mr. Boxhorn commented that the available data from the Mitchell Field Drainage Ditch (MFDD) shows low dissolved oxygen levels, with concentrations in approximately 75 percent of the samples falling below the 5 mg/l standard (Figure Dissolved Oxygen-3, page 134). Ms. Kinzelman asked if her Department shared biological oxygen demand (BOD) data for the Mitchell Field Drainage Ditch. Mr. Boxhorn answered that the BOD data was too sparse, and that the Milwaukee Metropolitan Sewerage District is considering moving some current monitoring stations that are located on the mainstem of Oak Creek to the major tributaries. He indicated that he has asked District staff to consider moving a station to the MFDD because this would be helpful to investigate the low dissolved oxygen levels.

[Secretary's Note: The following paragraph was added to the discussion on dissolved oxygen in the Mitchell Field Drainage Ditch in Section 4.4.

"The low concentrations of dissolved oxygen in the Mitchell Field Drainage Ditch were associated with elevated levels of biochemical oxygen demand (BOD). During the period 2007 through 2016, concentrations of 5-day BOD (BOD₅) ranged from below the limit of detection to 380 mg/l, with a median value of 4.5 mg/l. The two sampling stations along the Mitchell Field Drainage Ditch were the only sampling stations in the watershed at which BOD₅ was sampled where the median concentrations were above the limit of detection. Based on limited data, median concentrations of BOD₅ decreased between upstream sampling station at College Avenue (RM 1.8) and the downstream station at E. Rawson Avenue (RM 0.8), suggesting that some of this material is being metabolized in the stream. This would act to lower ambient concentrations of dissolved oxygen."]

Mr. Boxhorn continued the Section 4.4 discussion with the subsection describing pH levels in the watershed. He noted that there was a consistent increase in pH after 2012, especially at the downstream mainstem stations. This may have been due to the installation of new equipment at nearby power plants that reduce emissions of pollutants. No questions or comments were offered by the Advisory Group for the subsection on pH.

Mr. Boxhorn next discussed the Section 4.4 subsection related to chloride monitoring data. He noted that chloride concentrations in the Oak Creek watershed jumped in 2014 (Figure Chloride-6, page 156). Ms. Nenn, Mr. Mittag, and Mr. Giordano all suggested the I-94 corridor and expansions as the potential source for the year 2014 increase in chloride concentrations. Mr. Boxhorn indicated this 2014 jump was seen throughout the watershed, with a notable increase observed in the mainstem between Ryan Road and Howell Avenue (Figure Chloride-4 and Chloride-7). Mr. Zimmerman suggested water softener discharge could be the source of the rise, with a potential lag in chloride concentrations due to storage in ponds and groundwater. Mr. Failey noted that the airport has banned the use of deicing salts within its runway system and has been monitoring for chlorides since 1996. Mr. Boxhorn said that the airport data that was found in the online databases for this analysis does not extend back that far and asked Mr. Failey where he could find that data. Mr. Failey replied that SEWRPC should contact Steve Corsi at USGS to obtain the older airport chloride and deicing data.

[Secretary's Note: Mr. Corsi indicated that all available USGS data for the airport is located in NWIS, which was used for Section 4.4 of Chapter 4.]

Mr. Morrow asked if the 75 percent road salting reductions implemented by the City of Franklin are evident in chloride concentrations in the Oak Creek mainstem data. Mr. Boxhorn indicated there is not enough data in the upper Oak Creek mainstem to document these source loading changes. Mr. Giordano offered to see if Root Pike WIN can help the City publicize the water quality benefits of these deicing reduction efforts.

Mr. Boxhorn continued the Section 4.4 discussion with the subsection related to specific conductance. He noted that specific conductance can be used as a surrogate for chloride, but many other ions including metals can also be reflected in specific conductance levels. No questions or comments were offered by the Advisory Group for the subsection discussing specific conductance.

Mr. Boxhorn next discussed the Section 4.4 subsection related to suspended material. Overall the total suspended solid concentrations in the Oak Creek watershed have trended down over time (Figure TSS-1, page 163). Mr. Keith asked if the total mass loading of sediment could be increasing with the higher flows experienced in the watershed. Mr. Boxhorn replied that a mass loading analysis could be done at the USGS gage location on the mainstem at 15th Avenue.

[Secretary's Note: SEWRPC staff reviewed the available TSS data. They were not sufficient for conducting a loading analysis. Load estimates generated by watershed modeling conducted as part of the RWQMPU will be presented in Chapter 5.]

Mr. Boxhorn next discussed the Section 4.4 subsection describing phosphorus conditions in the watershed. He noted that the percent of phosphorus water samples present as dissolved phosphorus has been increasing over time (Figure Tot-P-5, page 174). Mr. Zimmerman asked if the total mass loading of phosphorus could be calculated. Mr. Boxhorn replied that a mass loading analysis could be done at the USGS gage location on the mainstem at 15th Avenue.

[Secretary's Note: SEWRPC staff reviewed the available phosphorus data. They were not sufficient for conducting a loading analysis. Load estimates generated by watershed modeling conducted as part of the RWQMPU will be presented in Chapter 5.]

Mr. Boxhorn pointed out that a section discussing legacy phosphorus has been added to this subsection of Chapter 4 pages 75-77. Legacy phosphorus is phosphorus stored on the land, the floodplain, and in the streambed. Mr. Giordano asked if legacy phosphorus is unique to the Oak Creek watershed. Mr. Boxhorn answered that legacy phosphorus can be found in most watersheds, and could mean that nutrient reduction efforts in the Oak Creek watershed may not have an noticeable impact on water quality for a long time. It may take decades for all the legacy phosphorus to be flushed out of the watershed. He added that the current scientific understanding of this topic is poor.

Mr. Boxhorn next discussed the Section 4.4 subsection describing nitrogen data within the watershed. No questions or comments were offered by the Advisory Group for this subsection.

Mr. Boxhorn next discussed the Section 4.4 subsection related to metals and other compounds. No questions or comments were offered by the Advisory Group for these subsections.

Finally Mr. Boxhorn discussed the Section 4.4 subsection describing toxicity conditions. He noted that polychlorinated biphenyls (PCBs) have been found in the surface sediments of the Mill Pond as well as in sediments in Oak Creek downstream to the confluence with Lake Michigan. Ms. Herrick said that the WDNR has recently provided additional details on the PCB levels observed in Oak Creek and this information will be added to the Chapter 4 text.

[Secretary's Note: Details from an October 25, 2019 email from Craig Helker were summarized in the following paragraph and added to the Toxicity Conditions subsection of Section 4.4.

"On September 4, 2019, the WDNR's Remediation and Redevelopment program issued a "No Action Required" determination for the PCB contamination found in sediment in the reach of the mainstem of Oak Creek downstream from the Mill Pond.¹ The determination noted that the concentrations found were below the Department's current "interest threshold" and that investigation determined that the source of the contamination is more likely closer to the sampling locations, than from an upstream source. It concluded that a larger-scale investigation using State funds does not seem practicable at this time. Local WDNR staff indicated that they would discuss the posting of a general notice sign, based on WDNR fish consumption advisories for Lake Michigan with the Milwaukee County Health Department and the Milwaukee County Parks."]

Mr. Giordano asked if the analyses completed by the City of Racine Public Health Department included an evaluation of PCB levels in the Mill Pond. Ms. Kinzelman replied that the analyses did not include PCBs, as that would have required deep core sampling, which was not in their scope, nor did the Health Department have the right equipment to take core samples.

Mr. Mittag asked if PFAS (per- and polyfluoroalkyl substances) will be discussed in Chapter 4. Mr. Failey indicated that the MFDD was sampled for PFAS. Mr. Failey noted that the airport stopped using fire retardants containing PFAS in 2012. He also noted that the fire retardants containing PFAS were mandated by the FAA for use in aircraft emergencies. Mr. Failey indicated that the investigations for PFAS contamination were focused on the Air National Guard 128th Refueling Wing. Mr. Boxhorn commented that he has been trying to get these water quality data, and will follow up with the WDNR and the airport.

[Secretary's Note: All available data for the Oak Creek watershed was incorporated in the PFAS section of Chapter 4 that will be reviewed at the next Advisory Committee meeting.]

Mr. Russart stated that the ecological plan for the Oak Creek parkway lands owned by Milwaukee County will be available by the end of November 2019 and that he will share a copy with SEWRPC staff when complete.

No further questions or comments were offered by the Advisory Group related to the partial Chapter 4 material.

STAKEHOLDER MEETING DECEMBER 2019

Ms. Herrick announced that the next stakeholder meeting will be held December 12, 2019 from 6 pm to 7:30 pm in the multipurpose room of the Oak Creek Civic Center. Topics to be discussed include review of the partial draft Plan Chapter 4 contents. No questions or comments were offered for the next stakeholder meeting.

NEXT STEPS FOR PLAN DEVELOPMENT

Ms. Herrick discussed the next steps for plan development. She indicated that SEWRPC staff will work to complete the remaining sections of Chapter 4 "Inventory Findings" with the intent to present the Chapter to the Advisory Group in early 2020. No questions or comments were offered for the next steps for the Plan.

¹ Wisconsin Department of Natural Resources, "Rational for No Action Required, BRRTS No. 09-41-584292, September 4, 2019.

ADJOURNMENT

There being no further business, the meeting was adjourned by unanimous consent at 11:25 a.m.

Respectfully submitted,

Laura Herrick Recording Secretary

ELECTRONIC COMMENTS RECEIVED FROM MMSD NOVEMBER 8, 2019

Mr. Mittag and Mr. Matt Magruder of MMSD provided additional comments via email to Ms. Herrick on November 8, 2019. Detailed responses to each comment were provided electronically to Mr. Mittag. Responses to their most substantive comments are summarized here for completeness.

Under the Section 4.3 flooding evaluation subsection, Mr. Mittag noted that the MMSD floodproofing policy is draft, and that the District would support voluntary acquisition and floodproofing.

[Secretary's Note: Stream flooding subsection of Section 4.3 was edited accordingly.]

Mr. Mittag suggested adding to the Section 4.4 phosphorus subsection information on legacy phosphorus from the Yahara watershed study in Madison.

[Secretary's Note: Details of the Yahara watershed study were added to the Phosphorus subsection of Section 4.4.]

Mr. Mittag asked if a map could be added to the toxicity subsection of Section 4.4 for the locations of the PCB sampling done by the WDNR in November 2018 in the lower portion of Oak Creek.

[Secretary's Note: Map 4.PCB has been added to Section 4.4 and is attached to these summary notes.]

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Map IV - XX Impaired Waters within the Oak Creek Watershed: 2020



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OAK CREEK WATERSHED BOUNDARY

OAK CREEK SUBWATERSHED BOUNDARIES

- PERENNIAL STREAM

INTERMITTENT STREAM

IMPAIRED WATER: 2018

PROPOSED IMPAIRED WATER: 2020

SURFACE WATER





Sediment Sampling for Polychlorinated Biphenyls (PCBs) in Lower Reaches of Oak Creek: November 2018 Map 4.PCB