SUMMARY NOTES OF THE OCTOBER 21, 2026, MEETING OF THE TECHNICAL ADVISORY COMMITTEE FOR *A CHLORIDE IMPACT STUDY FOR THE SOUTHEASTERN WISCONSIN REGION*

INTRODUCTION

The October 21, 2026, meeting of the Technical Advisory Committee (TAC) for *A Chloride Impact Study for Southeastern Wisconsin* was convened online at 10:03 a.m. The meeting was called to order by Committee Secretary Ms. Laura Herrick, Chief Environmental Engineer with the Southeastern Wisconsin Regional Planning Commission (SEWRPC). Attendance was taken using the online software.

Members Present

Laura Herrick, Secretary ..... Chief Environmental Engineer, SEWRPC
Mandy Bonneville ..... Deputy Director/County Conservationist, Walworth County Land Use and Resource Management Department
Brian Cater ..... Interim Director of Public Works/City Engineer, City of Kenosha
Cody Churchill ..... Winter Maintenance Engineer, Wisconsin Department of Transportation
Matt Diebel ..... Hydrologist, USGS
Craig Helker ..... Water Resources Biologist – Southern District, WDNR
Samantha Katt ..... Urban Storm Water Specialist, WDNR
Scott Kroeger ..... Director, Public Works and Development, City of Muskego
Matthew T. Magruder ..... Environmental Research Manager, Milwaukee Metropolitan Sewerage District
Max Marechal ..... City Engineer, Engineering Department, City of West Bend
Cheryl Nenn ..... Riverkeeper, Milwaukee Riverkeeper
Neal O'Reilly ..... Director, Department of Conservation and Environmental Science, University of Wisconsin Milwaukee
Kurt Sprangers ..... Engineer in Charge, Environmental Engineering Section, Department of Public Works, City of Milwaukee
David Strifling ..... Director, Water Law and Policy Initiative, Marquette University Law School

Guests Present

Mitchell Olds ..... Water Resources Specialist, Milwaukee Metropolitan Sewerage District

Staff Present

Thomas Slawski ..... Chief Biologist, SEWRPC
Karin Hollister ..... Principal Engineer, SEWRPC
Aaron Owens ..... Principal Planner, SEWRPC
Justin Poinsatte ..... Principal Specialist-Biologist, SEWRPC
James Mahoney ..... Senior Engineer, SEWRPC
Emily Porter ..... Planner, SEWRPC
Collin Klaubauf ..... Engineer, SEWRPC

Ms. Herrick welcomed the attendees to the 13th and final TAC meeting for the *Chloride Impact Study* (Study). Ms. Herrick introduced the agenda for the meeting to review the final four chapters of SEWRPC Planning Report No. 57, *A Chloride Impact Study for Southeastern Wisconsin* (PR-57) and provided an update on the progress of the Study thus far. Ms. Herrick noted that the first eight chapters of the planning report for the Study summarize the major findings from the seven completed technical reports. She

reminded the TAC that the technical reports are available on the SEWRPC website. Chapters 9 and 10 include new information related to future conditions, goals, and recommendations.

[Secretary's Note: The agenda for this meeting is attached herein as Exhibit A.]

REVIEW OF THE SUMMARY NOTES FROM THE JUNE 24, 2026, TECHNICAL ADVISORY COMMITTEE MEETING

Ms. Herrick asked the TAC for any comments or edits for the Summary Notes from the June 24, 2026, TAC meeting. The previous meeting reviewed the first six chapters of PR-57. Ms. Herrick informed the TAC that, at the request of the Commissioners, two additional figures were added to Chapter 1 since the previous meeting. She explained that the new Figures 1.1 and 1.2 are meant to show the severity of chloride impacts on the Region's surface waters and groundwater in recent years. The figures display each stream, inland lake, and shallow groundwater chloride sample as an individual dot, thus darker areas indicate more data points at a given chloride concentration level. The figures also include various State and Study chloride thresholds, as appropriate, to indicate the severity of current chloride levels.

TAC members offered no questions or comments on the Summary Notes or the new Chapter 1 figures.

REVIEW OF SEWRPC PLANNING REPORT NO. 57 CHAPTER 10, *RECOMMENDATIONS TO REDUCE THE IMPACTS OF CHLORIDE ON THE ENVIRONMENT*

Ms. Herrick explained that the meeting would review the final chapters of PR-57 in reverse order, beginning with Chapter 10, to ensure that the recommendations and goals, as well as the chapters containing new information, would have time to be discussed in full with the TAC.

Ms. Hollister began with a review of the four recommendation tables in section 10.2. These tables include recommendations for winter maintenance operations, water softening and wastewater sources of chloride, agricultural sources of chloride, and general recommendations for all chloride sources. She explained that the tables in section 10.2 designate a priority ranking and potential implementers for each recommendation. Ms. Hollister noted that priorities were assigned based on the anticipated level of impact on chloride conditions, the ease of implementation, and the expected timeline for impact. She explained that recommendations that would have a more immediate impact on chloride levels were considered a higher priority. However, she also emphasized that medium and low-priority recommendations are still critical to achieving overall chloride reduction goals and should be implemented as well. Ms. Hollister provided an example recommendation to familiarize members of the TAC with the layout of the tables and encouraged them to review the full draft tables online.

Ms. Hollister next presented a brief overview of the recommendations included in each table. Table 10.1 covers winter maintenance operations and includes several recommendations for management practices. She noted that many communities in the Region have already implemented some of these practices and achieved significant salt savings. Ms. Hollister explained that these recommendations are covered in more detail in SEWRPC Technical Report No. 66, *State of the Art for Chloride Management* (TR-66), as well as in Chapter 8 of PR-57. Table 10.1 also includes winter maintenance policy recommendations, Municipal Separate Storm Sewer System (MS4) permit recommendations, and other winter maintenance recommendations. Ms. Hollister summarized examples of each of these recommendation categories. She also noted that a list of salt-tolerant plant species can be found in Appendix B of the planning report.

Ms. Hollister continued with a review of Tables 10.2, 10.3, and 10.4. She explained that Table 10.2 includes recommendations for residential water softening and wastewater. She also noted that the Wisconsin Department of Natural Resources (WDNR) provides additional recommendations related to chloride reductions for wastewater sources (targeting significant users and high-chloride dischargers such as car washes, laundromats, industrial facilities, food processing, etc.). Ms. Hollister directed the TAC to Chapter 4 of the 2022 Development and Implementation of Water Quality Standards Variances for additional details and added that an endorsement of the WDNR recommendations will be included in Chapter 10 of the Planning Report. Table 10.3 provides recommendations for agricultural sources of chloride. Ms. Hollister summarized the recommendations for potash fertilizers, livestock manure, and additional research and data needs included in the table. She then concluded with a review of Table 10.4, which provides general recommendations for chloride management for all sources. This table includes chloride reduction recommendations focused on policy, programs and funding, research, and future work to be completed by various entities.

Next, Mr. Owens discussed chloride monitoring recommendations from section 10.3, sharing specific examples for streams, inland lakes, groundwater, wastewater effluent, and data management. These recommendations are summarized in Table 10.5 of PR-57. Mr. Owens then reviewed Map 10.1, showing existing and recommended stream monitoring sites for continuous specific conductance monitoring. He noted that continuous specific conductance offers a cost-effective way to estimate chloride levels using regression equations developed as part of the Study while also capturing year-round baseline conditions and short-term winter spikes. Mr. Owens explained that the recommended continuous specific conductance monitoring network would include two existing long-term U.S. Geological Survey (USGS) sites, nine existing Milwaukee Metropolitan Sewerage District (MMSD) sites, and ten SEWRPC Study sites that would be reestablished near USGS stream gages or in urban/urbanizing watersheds. He also noted that periodic grab sampling for chloride should also be conducted at the continuous monitoring locations to verify performance of the regression equations.

Mr. Owens then reviewed Map 10.2 which shows selected existing and potential stream monitoring sites for discrete chloride grab sampling. The recommended locations shown on the map include existing MMSD discrete sampling and WDNR Long-Term Trend River sites, as well as new locations on "High Risk" assessment reaches identified in SEWRPC Technical Report No. 63, *Chloride Study Conditions and Trends* (TR-63). He noted that PR-57 recommends collecting chloride grab samples at these sites at least every other month, though monthly would be ideal, as well as during winter weather events. Mr. Owens also added that Wisconsin 303(d) chloride-impaired streams, unmonitored highly urban streams, and high-quality and sensitive waters should also be considered as stream monitoring priorities but specific locations for these are not indicated on Map 10.2.

Mr. Owens next reviewed Map 10.3 and discussed chloride grab sampling recommendations for inland lakes. Map 10.3 shows recommended chloride monitoring frequency (annual or biannual) and priority ("low" to "very high") for study area lakes. He explained that lakes were assigned either annual or biannual sampling and were prioritized based on urbanization and data gaps. He noted that lake sampling should be supplemented with conductance profiles, tributary sampling, multi-depth winter sampling, and chloride test strips when possible.

Ms. Nenn asked if the SEWRPC sites recommended for continued monitoring would be monitored by SEWRPC, MMSD, or a different local organization. Mr. Owens responded that Commission staff did not assign a specific group to monitor these sites in PR-57 and noted that SEWRPC does not currently have funding to conduct future monitoring. He added that SEWRPC could loan extra equipment left over from the Study to other groups that may be interested in monitoring these sites, though he was unsure how well the older equipment would work. Ms. Nenn said that Riverkeeper would be interested in using the equipment and continuing monitoring.

Mr. O'Reilly suggested chloride sampling be added to the WDNR Citizen Lake Monitoring Network. Mr. Poinsatte responded that this monitoring recommendation is included Chapter 10.

Ms. Hollister next discussed the areas that are particularly vulnerable to chloride detailed in section 10.4 of PR-57 and resources available for identifying such areas. She noted that there are no areas in the Region that are immune to the effects of chloride and that the types of areas highlighted in the planning report are particularly vulnerable or sensitive to the negative effects of chloride pollution. Ms. Hollister also added that these areas warrant additional protection through targeted chloride management practices. She then identified specific groundwater protection areas, surface water protection areas, and high-quality natural areas and critical species habitat for protection. She noted that more information can be found in TR-63, including maps of groundwater recharge areas and locations that are highly susceptible to groundwater contamination, as well as maps and tables with outstanding and exception resource waters. Ms. Hollister also noted that the recently completed SEWRPC Planning Report No. 42, *2nd Amendment to the Regional Natural Areas and Critical Species Habitat Protection and Management Plan*, describes areas designated as high-quality natural areas and critical species habitat protection areas.

Mr. Owens then discussed the chloride reduction goals for water resources from section 10.5 of PR-57. He explained that Commission staff set short-term (10-year) and long-term (50-year) reduction targets for streams, lakes, and groundwater to track the success of Plan implementation. Mr. Owens noted that there are inherent recovery challenges and that recovery will be delayed by legacy chloride in groundwater as well as by variability in weather patterns. He next described overarching short- and long-term stream goals and introduced tiered targets for streams based on current chloride levels (identified through TR-63 analyses). These levels ranged from severely impacted to lightly impacted streams. Mr. Owens then outlined the stream reduction targets set for each tier and timeline. The chloride reduction targets for streams in the Region can be found in Table 10.6 of the planning report. Mr. Owens concluded with a brief review of the short-term and long-term chloride reduction goals for both inland lakes and groundwater.

Ms. Owens paused to ask the TAC for any questions or comments related to the chloride reduction goals described in PR-57. He specifically asked if the Committee found the goals too aggressive or not aggressive enough. Mr. Marechal mentioned that, when goals are estimated for communities, it seems to come down to available funding. He added that communities want to spend money on things that they can see and touch and that, even when people generally agree on the benefits of improving water quality, it is hard to get them to invest. Mr. Marechal then asked if there are any opportunities to get additional funding or recommendations for creating new funding opportunities included in PR-57. Ms. Herrick responded that there are recommendations for other funding sources from the State and that the WDNR will be considering additional funding opportunities for communities.

Mr. O'Reilly then highlighted the impacts of chloride on infrastructure and the corresponding expenses associated with fixing roads and bridges. He noted that it would be wise to reduce chloride in the environment to decrease the amount spent on degrading infrastructure, adding that this should continue to be emphasized in addition to the environmental impacts. Mr. O'Reilly also suggested that the Wisconsin Department of Transportation (WisDOT) invest in this effort. Ms. Herrick responded that Commission staff also considered the high chloride concentrations in wells and the financial cost associated with drinking water contamination. She agreed with Mr. O'Reilly and said that these cost impacts can be further emphasized in Chapter 10 of PR-57.

Ms. Herrick next reviewed all of the short-term and long-term chloride source reduction goals for communities, counties, and the State. These goals included specific recommendations for winter maintenance activities, wastewater treatment plants (WWTPs), funding, and policy to be achieved within either a 10-year or 50-year timeframe. Mr. O'Reilly asked if Chapter 10 looked at specific funding

mechanisms, such as the gas tax, that could provide revenue to support reduction goals. He recommended these mechanisms be added to the Planning Report, adding that he would hate to see the Plan sit on a shelf and not be implemented. Ms. Herrick responded that specific funding mechanisms were not included in PR-57. Ms. Hollister added that PR-57 includes a recommendation for the State to consider using the State Revolving Fund.

Ms. Herrick concluded the review of Chapter 10 by summarizing section 10.7 for next steps for Plan adoption and progress tracking. She showed Figure 10.1, which provides a visual of the anticipated cyclical process for chloride reduction in the Region, noting that an iterative process is described to achieve chloride reduction goals. Ms. Herrick also informed the TAC that the Plan proposes that the Commission will conduct an assessment in 10 years to determine the progress towards the short-term goals for both water quality and the communities/counties and the State, and to reassess the initial long-term goals.

Ms. Herrick asked the TAC for any additional thoughts and questions regarding the contents of Chapter 10. The Committee offered no additional comments.

REVIEW OF SEWRPC PLANNING REPORT NO. 57 CHAPTER 9, *POTENTIAL FUTURE CHLORIDE CONDITIONS IN SOUTHEASTERN WISCONSIN*

Ms. Hollister presented a brief overview of Chapter 9, which summarizes projected and potential future conditions in the Region. Projected future conditions included regional growth and development projections from SEWRPC Planning Report No. 55 (3rd Edition), *VISION 2050: Recommended Regional Land Use and Transportation Plan*, June 2024 (VISION 2050) such as planned land use, population and household projections, and planned transportation network expansion. Projected conditions also included long-term weather patterns and potential future conditions described by the Wisconsin Initiative on Climate Change Impacts (WICCI).

Ms. Hollister began discussing section 9.2 and showed Table 9.1 which summarizes existing and planned land use in the Region for 2010 and 2050. She noted that urban land use is expected to increase by 3.2 percent in the Region, with the largest increase in Kenosha County. Similarly, Ms. Hollister shared a map and figure showing projected regional population and household growth during the same 2010 to 2050 period. Regional population is expected to increase by 20 percent and households per square mile are projected to increase by 25 percent in the Region. She then showed Map 9.3 and Table 9.8 and described the planned highway and arterial street improvements by County presented in SEWRPC VISION 2050. Ms. Hollister explained that the projected future highway and arterial street expansion directly affects the amount of chloride used for public road deicing/anti-icing activities. She then reviewed the various implications of projected land use changes, population and household growth, and temperature and precipitation projections on chloride use and conditions.

Section 9.3 of Chapter 9 describes potential future chloride conditions. Ms. Hollister explained that the section explores how projected changes to the Region discussed in section 9.2 could affect chloride contributions to the environment from various sources and potential future scenarios. The scenarios described in the chapter consider conditions both with the status quo for chloride use as well as with chloride reduction strategies. Since chloride is difficult to remove or eliminate once dissolved in water, Ms. Hollister stated that the most effective way to reduce the amount of chloride in the environment is to promote chloride source reduction through targeted management practices. She noted that chloride reduction strategies for various sources of chloride are discussed in detail in TR-66, PR-57 Chapter 8, and highlighted by recommendations in Chapter 10, thus they are not discussed in detail in Chapter 9. Ms. Hollister reviewed potential winter maintenance operations, sources of chloride in wastewater effluent, and agricultural sources of chloride under projected future growth and climate conditions. These potential impacts on future chloride usage and water resource conditions in the Region are summarized in Figure 9.4.

Ms. Hollister then showed Figure 9.5 from PR-57 illustrating the balance of factors influencing potential future chloride conditions. She noted that implementing chloride reduction strategies offer the best chance to offset the impacts of projected future growth and weather conditions in the Region.

No questions or comments were provided from the TAC on Chapter 9.

REVIEW OF SEWRPC PLANNING REPORT NO. 57 CHAPTER 8, *OPTIONS TO MANAGE CHLORIDE TO THE ENVIRONMENT*

Mr. Owens introduced Chapter 8, which covers various options to manage chloride. He noted that the chapter summarizes many of the practices, technologies, and policies detailed in TR-66 and SEWRPC Technical Report No. 67, *Legal and Policy Considerations for the Management of Chloride* (TR-67) and serves as the technical basis for the Chapter 10 recommendations in PR-57. For that reason, he explained that he would only be providing a brief summary of the management options from Chapter 8. Mr. Owens emphasized that source reduction is essential for improving chloride conditions in surface water and groundwater resources in the Region. He noted that the chapter provides chloride management options for winter maintenance, public water and wastewater utilities, water softening, agriculture and industry, and policy tools.

Mr. Owens asked the TAC for thoughts and questions related to the content in Chapter 8. Members of the TAC offered no comments.

REVIEW OF SEWRPC PLANNING REPORT NO. 57 CHAPTER 7, *CHLORIDE MONITORING OPTIONS*

Mr. Owens next introduced Chapter 7 of the planning report, which describes chloride monitoring options, field methodologies, and equipment considerations that support the monitoring recommendations in Chapter 10. He began by outlining the discrete grab sampling recommended for streams, noting that grab samples have high lab accuracy, but have the limitation of being isolated samples which miss rapid winter deicing spikes and dilution events. Mr. Owens then described automated continuous specific conductance monitoring recommendations for streams as a proxy for chloride. He discussed equipment deployment and protection, maintenance and quality assurance, sampling strategies for data pairing, statistical model considerations, and site limitations for continuous specific conductance monitoring. Mr. Owens then offered alternative field screening tools such as ion-selective electrodes (ISE sensors) and chloride test strips as additional options and described their advantages and limitations.

Mr. Owens continued with a summary of inland lake chloride monitoring methods. For lake surface sampling, he described pairing surface grab samples at the lake's deep hole location with tributary stream sampling and chloride test strips. Mr. Owens then summarized chloride monitoring methods at discrete depths and specific conductance and temperature profiling. He also noted that, while chloride grab samples and specific conductance measurements can show the presence of chloride, biological surveys should be considered to confirm the impacts experienced by local aquatic life. Monitoring is needed to track salt stress via shifts from sensitive to tolerant macroinvertebrates, declining low-tolerance diatoms, stunted juvenile fish, and plant leaf burn and wilting.

Finally, Mr. Owens discussed chloride monitoring methods for municipal and private wells. He noted that historic groundwater data gaps could be addressed by increasing municipal well sampling frequency, recording private well depths and locations, and establishing dedicated, long-term, observation wells.

No questions or comments were provided from the TAC on Chapter 7.

COMMITTEE APPROVAL

Ms. Herrick asked the TAC for a motion to approve the full PR-57 document. Mr. O'Reilly moved for approval and Mr. Strifling seconded the motion. The motion was approved unanimously by TAC members.

NEXT STEPS FOR THE PLAN

Ms. Herrick stated that comments will be taken on the draft PR-57 Chapters 7 through 10 reviewed during this TAC meeting until November 13, 2026. She added that comments can be submitted to her directly via email (lherrick@sewrpc.org).

Ms. Herrick then reviewed the next steps for the Study. She stated that there will be a public comment period in November and that the Planning Report will be finalized in December. She indicated that the meeting agendas, presentations, and summary notes along with completed reports and preliminary drafts are posted on the SEWRPC project website at www.sewrpc.org/chloride-study. Ms. Herrick also informed the TAC that the Commission will be conducting public outreach for the Study in the first half of 2027.

ADJOURNMENT

There being no further business, the meeting was adjourned by unanimous consent at 12:01 p.m.

Respectfully submitted,

Laura Herrick
Recording Secretary

ADDITIONAL RESOURCES SHARED

As a follow-up to Mr. O'Reilly's suggestion that chloride sampling be added to the WDNR Citizen Lake Monitoring Network, Mr. Poinsatte shared the specific recommendations from Table 10.5 in the meeting chat. In the table, recommendation number M7 is to incorporate chloride sampling into Citizen Lake Monitoring Network monitoring for lakes. Recommendation number M8 in the table further recommends that chloride grab sampling be incorporated into Water Action Volunteer (WAV) monitoring for streams.

00282343.DOCX
200-1100
EEP/KMK/AWO/LKH
10/23/26, 10/29/26, 11/3/26, 11/4/26

Exhibit A

Southeastern Wisconsin Regional Planning Commission

Notice of Meeting and Agenda

TECHNICAL ADVISORY COMMITTEE FOR
A CHLORIDE IMPACT STUDY FOR THE SOUTHEASTERN WISCONSIN REGION

DATE: Wednesday, October 21, 2026

TIME: 10:00 am to Noon

TEAMS LINK
Join: https://teams.microsoft.com/meet/248880079745331?p=77LK0tF9c3IE4wVeds
Meeting ID: 248 880 079 745 331
Passcode: ux36px2p

AGENDA:

1. Roll call

2. Review of summary notes from the June 24, 2026, TAC meeting

3. Summary of the second half of **SEWRPC Planning Report No. 57, A Chloride Impact Study for Southeastern Wisconsin**
    a. Chapter 10 – Recommendations to Reduce the Impacts of Chloride to the Environment
    b. Chapter 9 – Potential Future Chloride Conditions in SE WI
    c. Chapter 8 – Options to Manage Chloride to the Environment (TR-66 and TR-67 summary)
    d. Chapter 7 – Chloride Monitoring Options

4. Committee Approval

5. Next Steps

6. Adjourn

Laura K. Herrick
Chief Environmental Engineer

00282077.DOCX
200-1100
LKH
10/21/26