

MINUTES

SEWRPC ADVISORY COMMITTEE ON REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS

DATE: October 31, 2007

TIME: 1:30 p.m.

PLACE: City of Mequon City Hall
Upper Level Council Chambers
11333 N. Cedarburg Road
Mequon, Wisconsin

Committee Members Present

Daniel S. Schmidt, Chairman
Michael G. Hahn, Secretary

Martin A. Aquino
(for Jeffrey J. Mantes)
Michael J. Ballweg

John R. Behrens

Thomas J. Bunker
Marsha B. Burzynski
(for James L. McNelly)
Lisa Conley

Andrew A. Holschbach

Steve Keith
James F. Lubner

J. Scott Mathie
(for Matthew Moroney)
Charles S. Melching

Paul E. Mueller

Cheryl Nenn
Jeffrey S. Nettesheim
Stephen Poloncsik
(for Peter G. Swenson)
Kevin L. Shafer

Staff Members and Guests

Joseph E. Boxhorn

Troy E. Deibert
Sharon L. Gayan
Judy Jooss

SEWRPC Commissioner
Chief Environmental Engineer, Southeastern
Wisconsin Regional Planning Commission
Environmental Manager, Environmental Engineering,
City of Milwaukee
Crops and Soils Agent, University of Wisconsin-Extension,
Sheboygan County
Commissioner-Secretary, Silver Lake Protection
and Rehabilitation District
Representative, City of Racine Water and Wastewater Utility
Regional Water Resources Planner, Wisconsin
Department of Natural Resources
Representative, Town and Country Resource
Conservation and Development, Inc.
Director, Ozaukee County Planning, Resources,
and Land Management Department
Acting Director of Environmental Services, Milwaukee County
Sea Grant Advisory Services Specialist,
University of Wisconsin Sea Grant Institute
Director of Government Affairs, Metropolitan Builders
Association of Greater Milwaukee
Associate Professor, Civil & Environmental
Engineering, Marquette University
Administrator, Washington County Planning
and Parks Department
Riverkeeper/Project Director, Friends of Milwaukee's Rivers
Director of Utilities, Village of Menomonee Falls
Senior Staff Engineer, U.S. Environmental Protection Agency

Executive Director, Milwaukee Metropolitan Sewerage District

Senior Planner, Southeastern Wisconsin Regional
Planning Commission
Water Resources Engineer, HNTB Corporation
Basin Supervisor, Wisconsin Department of Natural Resources
Representative, Town and Country Resource
Conservation and Development, Inc.

WELCOME AND INTRODUCTIONS

Mr. Schmidt thanked the Advisory Committee members for attending this meeting. He indicated that roll call would be accomplished with a sign-in sheet circulated by SEWRPC staff.

APPROVAL OF MINUTES OF THE MEETING OF SEPTEMBER 20, 2007

Mr. Schmidt asked Mr. Hahn to review the highlights of the minutes of the September 20, 2007, meeting of the Committee.

Mr. Hahn noted that the minutes contained several items related to comments from meetings prior to September 20, 2007.

Mr. Behrens and Ms. Jooss noted some typographical errors and minor omissions in the Minutes.

[Secretary's Note: Those errors or omissions were corrected.]

Mr. Melching noted that on page 6 the minutes indicate that the motion to approve the excerpts from Chapter XI of PR No. 50 was carried with all members of the Committee voting aye except one. He commented that he observed that several members were silent during the vote and asked whether the minutes should be amended to reflect this. Mr. Schmidt responded that silence is generally taken to indicate consent. He added that after the voice vote, any member could have asked that the Committee be polled.

In reference to the first paragraph on page 3 of the minutes, Mr. Bunker indicated that the footnote added to Appendix Q in response to his previous comments was acceptable to him.

Referring to page 6 of the minutes, Mr. Hahn noted Mr. Poloncsik's comment that the plan should include explicit recommendations regarding water use objectives. Mr. Hahn referred the Committee to Exhibit A of the minutes, which was revised 1) to include an evaluation of the ability to meet the auxiliary water use objectives for Indian, Lincoln, and Stony Creeks in the Milwaukee River watershed and 2) to include recommended existing water use objectives and recommended planned water use objectives for streams in the study area. He summarized those recommendations by reviewing Table X-7b with the Committee.

Mr. Hahn stated that a change to the recommended plan is indicated on pages 8 and 9 of the minutes. He continued that it is proposed to add a recommendation to expand the Milwaukee Estuary Area of Concern. He noted that this change was requested by the WDNR and that information regarding this change was available at the public hearings.

Mr. Hahn stated that Exhibit C-1 of the minutes documents the research and assumptions upon which the general 75-foot riparian buffer plan recommendation was based. Mr. Melching suggested that the first sentence of the second paragraph of the first page of the exhibit be rephrased to indicate that the buffer width was selected as the result of a process of investigation rather than to indicate the selection of a width of 75 feet was a foregone conclusion.

[Secretary's Note: The first sentence of second paragraph on page 1 of Exhibit C-1 was revised to read as follows (In this Secretary's Note and in subsequent Notes, revised and added text is indicated in bold letters for clarification purposes only. The report text will not be bold):

“This analysis seeks to identify documented scientific information extracted from published literature, which **allowed the derivation of the recommended 75-foot-wide** riparian buffer width for lakes and streams in the regional water quality management plan **update** study area, and by extension, the Southeastern Wisconsin Region.”]

Mr. Hahn stated that a section of Chapter X of PR No. 50 on dredging of the Milwaukee Harbor and disposal of dredged materials has been drafted and is included in the minutes as Exhibit C-2. He explained that Map X-11e shows the extents and the depths to which the Corps of Engineers dredge. He added that the map also shows the location of the Kinnickinnic River Environmental Restoration Project, which is discussed in the subsection on dredging for water quality improvement. He noted that this grew out of the Remedial Action Plan process for the Milwaukee Estuary Area of Concern. Ms. Nenn asked what the small water feature that the map shows discharging into the Menomonee River immediately upstream from the South Menomonee Canal represents. Mr. Hahn replied that this feature would be double checked.

[Secretary's Note: SEWRPC staff examined aerial photographs of the portion of the Menomonee River depicted in Map X-11e from 1995 through 2005. As this feature was not present in any of those photographs it was removed from the Map.]

Mr. Hahn stated that a subsection shown on page 9 of the minutes was inserted into Chapter X of PR No. 50 describing the Remedial Action Plan for the Milwaukee Estuary AOC. Ms. Burzynski commented that the AOC listing for the estuary is a separate process and issue from its listing on the 303(d) list of impaired waters and asked that the reference to the 303(d) listing be removed from this subsection.

[Secretary's Note: The second full paragraph on page 10 of the minutes was revised to read as follows:

“A joint WDNR/USEPA. effort is currently underway to examine and assess the identified beneficial use impairments for the Milwaukee Estuary AOC, to eliminate those that no longer apply, and to develop restoration criteria to address the remaining beneficial use impairments, with the ultimate goal of **delisting** the AOC.”]

Mr. Hahn distributed an excerpt from pages 41 and 42 of Chapter X of PR No. 50 to the Committee. He stated that the text that the excerpt indicates is to be added to Chapter X provides a reference to the recommendations from the Milwaukee County Stream Assessment. He explained that this was added in response to a request from Milwaukee County.

There being no further additions or revisions, the minutes were approved as amended, on a motion by Mr. Aquino, seconded by Mr. Shafer, and carried unanimously.

**CONSIDERATION OF THE PRELIMINARY DRAFT OF CHAPTER VIII,
“FUTURE SITUATION: ANTICIPATED GROWTH AND CHANGE,” OF SEWRPC
PLANNING REPORT NO. 50 (PR NO. 50), A REGIONAL WATER QUALITY
MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS**

Mr. Schmidt asked Mr. Boxhorn to review the revised excerpts from the preliminary draft of the chapter.

Ms. Jooss, Mr. Lubner, and Mr. Melching noted some typographical errors and minor omissions in the minutes.

[Secretary's Note: Those errors or omissions were corrected.]

Mr. Bunker noted that Table VIII-1 shows a decline in population for the City of Racine and asked how these estimates were arrived at. Mr. Boxhorn replied that these estimates were computed using a disaggregation of the data into U.S. Public Land Survey quarter sections followed by reaggregation. Mr. Hahn indicated that more information will be provided.

[Secretary's Note: In response to this comment from Mr. Bunker and to comments after the meeting from Mr. Behrens, the Commission staff reviewed the population projections in instances where population decreases were indicated under planned conditions. It was found that, in some

cases the allocation of population between towns and adjacent villages or cities needed to be adjusted.

The City of Racine population projections were reviewed and found to be correct. The decline in population is largely attributable to a decrease in household size. The population estimates for municipalities in Ozaukee, Racine, and Washington Counties were reviewed and adjustments were made to address 1) instances where projected population increases in portions of towns that are likely to be annexed were assigned to the towns rather than the adjacent city or village and 2) estimated unplanned growth in town populations in areas that are anticipated to remain unincorporated in 2020. The revisions to the populations are set forth in Table VIII-1, which is attached as Exhibit A.]

Ms. Nenn asked whether the same land use data were used for the regional water quality management plan update as are being used for the regional water supply plan. Mr. Hahn replied that data and projections from the 2035 land use plan are being used for the regional water supply plan.

A motion to approve the preliminary draft Chapter VIII, "Future Situation: Anticipated Growth and Change," of SEWRPC Planning Report No. 50, *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds*, as amended, was made by Mr. Melching, seconded by Mr. Holschbach, and carried unanimously.

**CONSIDERATION OF THE PRELIMINARY DRAFT OF CHAPTER XII,
"SUMMARY AND CONCLUSIONS," OF SEWRPC PR NO. 50, A REGIONAL
WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER
MILWAUKEE WATERSHEDS**

Mr. Schmidt asked Mr. Hahn to review the preliminary draft of the subsection.

Mr. Hahn noted that the first part of the chapter was sent to the Committee before the public hearings were held. He added that additions to the chapter summarizing the public hearings were subsequently sent to the Committee. He indicated that since the first part of the chapter is a summary of material that was previously reviewed by the Committee, he would focus his review on the additions. He also indicated that he would like to change the title of the chapter to "Summary."

[Secretary's Note: The chapter title was changed to "Summary."]

Ms. Jooss, Mr. Lubner, and Mr. Melching noted some typographical errors and minor omissions in the minutes.

[Secretary's Note: Those errors or omissions were corrected.]

Mr. Melching noted that the second sentence in the fourth full paragraph on page 7 is at odds with the recommendations for upgraded water use objectives made in Chapter X. Mr. Hahn replied that the sentence would be deleted or reworded.

[Secretary's Note: The second sentence in the fourth full paragraph on page 7 was deleted. The last sentence in the first paragraph of page 1 of Exhibit A to the September 20, 2007, minutes was also deleted.]

In reference to the subsection on rural land management on page 12, Ms. Conley commented that the cost share funding for meeting the agricultural performance standards of NR 151 do not have to come from public sources, funding can also come from private sources. She noted that "T," the tolerable level of soil loss, is not a water quality standard or related to a water quality standard, rather it is a measure of soil erosion. Mr. Hahn agreed with

Ms. Conley. He noted that the achievement of “T” was used to represent a realistic level of implementation of the Chapter NR 151 agricultural runoff management standards, but the recommended plan includes more extensive measures related to the abatement of agricultural nonpoint source pollution.

In reference to the subsection on fertilizer management on page 33, Ms. Conley noted that either Dane County or the State of Minnesota conducted a study that concluded that a voluntary approach to fertilizer management was not effective and that mandatory no-phosphorus ordinances were more effective. Mr. Hahn replied that based on the data collected by the Commission staff, the body of evidence was insufficient to justify recommending low- or no-phosphorus fertilizer ordinances for the entire study area. He noted that these are recommended for areas tributary to inland lakes and ponds.

In reference to the subsection on chloride reduction programs on page 33, Ms. Conley noted that the State of Colorado uses cinders rather than road salts for ice and snow control in certain mountain passes. Mr. Hahn replied that the idea of alternatives to chloride application could be strengthened in the text.

[Secretary’s Note: The following sentence was added after the second sentence of the third full paragraph on page 39 of Chapter X of PR No. 50:

“Other alternative measures for communities to consider include calibration of deicer application equipment, prewetting of solid deicers, and use of alternative ice and snow control materials.”]

In reference to the subsection on exotic invasive species on page 40, Ms. Conley commented that ballast water discharged from ocean-going freighters into Great Lakes waters is a major issue. Mr. Lubner noted that most international traffic coming into the Great Lakes is loaded and carrying no ballast, though the ballast tanks may contain residual water and sediment. He added that there is no national legislation on ballast water. He also said that the WDNR had issued regulations intended to control the spread of viral hemorrhagic septicemia (VHS). Mr. Hahn responded that the recommended plan says more about the ballast water issue, but this is an issue that cannot be adequately addressed at the regional level. Ms. Gayan said that the WDNR staff would provide more information on VHS.

[Secretary’s Note: Effective November 2, 2007, the WDNR passed statewide emergency rules to control the spread of VHS. Those rules are summarized at <http://dnr.wi.gov/fish/pages/vhs.html>.]

In reference to the subsection on global climate change on page 40, Ms. Conley commented that she felt that global climate change should be considered in the current planning effort. Mr. Hahn responded that this issue was examined; however, the results from the global climate models are not appropriate for small spatial scales such as the study area. While he agreed that it is important to pay attention to this issue, he stated that not much can be done in the context of this study. He noted that the water quality modeling utilized climate data from the last 60 years.

Mr. Bunker asked about the status of the revised ISS operating procedure discussed in Alternative B2 on page 15. Mr. Hahn replied that under its real-time control strategy, MMSD currently utilizes a variable volume reserved for sanitary sewer inflow strategy. He noted that the plan contains a suggestion that MMSD pursue recognition of the integrated nature of its system. There was some additional discussion involving Mr. Aquino, Mr. Bunker, Ms. Nenn, and Mr. Shafer regarding legal issues, actual ISS operation by MMSD, the representation of the ISS in the water quality models, and recommended capacity upgrades. Finally, Ms. Nenn asked that the last sentence in the third paragraph on page 15 be revised to clarify that a change in Federal law is not being recommended.

[Secretary’s Note: The last sentence of the third paragraph on page 15 was revised to read:

“Implementation of this alternative would require a change in Federal law with regard to SSOs; **however, neither this alternative, nor such a change in Federal law, is recommended.**”]

Ms. Nenn noted that the discussion of the recommended plan on page 16 makes no acknowledgement that the plan was constructed from elements of each alternative. Mr. Hahn replied that text would be added to clarify this.

[Secretary’s Note: The following paragraph was added after the sixth paragraph on page 16:

“The development of the recommended plan focused primarily on identifying cost-effective ways to meet the water use objectives and supporting water quality standards to the degree possible. Consideration was also given to the existing regulatory framework regarding wastewater discharges and abatement of nonpoint source pollution. Accordingly, the plan was developed to include all components of the future baseline condition (Alternative A) along with elements from both Alternative B-1 (regulatory-based) and the C alternatives (water quality-based). The plan incorporates most actions identified in the MMSD 2020 facilities plan, as well as additional measures directed towards improving water quality through reducing point and urban and rural nonpoint source pollutant loads.”]

In reference to the description of Alternative C-1 on page 15, Mr. Melching asked whether it was correct that this alternative included 50-foot riparian buffers rather than 75-foot riparian buffers. Mr. Hahn replied that this is correct and explained that the recommended buffer width was changed to 75 feet in the recommended plan.

Mr. Melching commented that the general conclusions presented in the bullet points on pages 42 and 43 are confusing. Mr. Hahn replied that these would be revised to improve their clarity.

[Secretary’s Note: The bullet points on pages 42 and 43 and the corresponding text in Chapter X were deleted and replaced with the following:

- **“Fecal Coliform Bacteria**
 - Marked reductions in concentration may be achieved under recommended plan conditions.
 - Improvements in compliance with the applicable standards are not as pronounced because of the existing high concentrations.
- **Dissolved Oxygen**
 - Compliance with the applicable standards is generally good under existing conditions.
 - Little change is projected to occur under the other conditions analyzed.
- **Total Phosphorus**
 - The most significant reductions in concentration generally occur under revised 2020 baseline conditions relative to existing conditions.
 - These reductions may be attributable to the effects of implementation of NR 151 stormwater runoff controls and construction of MMSD committed projects.

- Increases in concentrations are projected to occur at some locations in the Milwaukee River watershed under revised 2020 baseline conditions.
- The recommended plan is projected to produce marked reductions in concentrations relative to revised 2020 baseline conditions in the Lake Michigan inner and outer harbor areas.
- Under the extreme measures condition marked reductions in concentrations relative to recommended plan conditions could occur in the Lake Michigan inner and outer harbor areas and at some locations in the Menomonee River watershed.

- **Total Nitrogen**

- In the Kinnickinnic River, Menomonee River, and Oak Creek watersheds, the most significant reductions in concentrations occur under revised 2020 baseline conditions relative to existing conditions.
- In the Milwaukee and Root River watersheds, the most significant reductions in concentrations occur under recommended plan conditions relative to the revised 2020 baseline conditions.
- In the Lake Michigan inner and outer harbor, significant reductions in concentrations occur both under revised 2020 baseline conditions relative to existing conditions and under recommended plan conditions relative to revised 2020 baseline conditions.
- In the nearshore Lake Michigan area little change in concentrations would be expected among the five conditions considered.

- **Total Suspended Solids**

- In the Kinnickinnic River, Menomonee River, and Oak Creek watersheds, the most significant reductions in concentrations occur under revised 2020 baseline conditions relative to existing conditions.
- These reductions may be attributable to the effects of implementation of NR 151 stormwater runoff controls and completion of MMSD committed projects.
- In the Milwaukee River watershed, the greatest reductions in concentrations occur under recommended plan conditions relative to revised 2020 baseline conditions.
- In the urban areas of the Root River watershed in Milwaukee County, significant reductions in concentrations are anticipated under revised 2020 baseline conditions relative to existing conditions.
- In the remainder of the Root River watershed and in the Lake Michigan inner and outer harbor areas, reductions in concentrations would be anticipated to occur both under revised 2020 baseline conditions relative to existing conditions and under recommended plan conditions relative to revised 2020 baseline conditions.

- **Copper**

- In the Kinnickinnic River, Menomonee River, Oak Creek, and Root River watersheds and in the Lake Michigan inner and outer harbor areas, the most significant reductions in concentrations generally occur under the revised 2020 baseline conditions relative to existing conditions.
- In most locations in the Milwaukee River watershed and the nearshore Lake Michigan area no significant changes in concentrations would be expected among the five conditions considered.”]

Mr. Melching commented that the first full paragraph on page 44 implies that application of the extreme measures condition is being advocated. He noted that this is inconsistent with previous discussions. Mr. Hahn replied that the reference to the extreme measures condition would be removed from the text.

[Secretary’s Note: The first full paragraph on page 44 of was revised to read:

“In general, even though anticipated water quality conditions at some locations assessed fall short of the compliance criterion, implementation of the recommended plan would result in significant improvement in fecal coliform concentrations.”

The third paragraph on page 84 of Chapter X of PR No. 50 was revised to read:

“In general, even though anticipated water quality conditions at some locations assessed fall short of the compliance criterion, implementation of the recommended plan would result in significant improvement in fecal coliform concentrations.”]

Mr. Hahn then began review of the insert to Chapter XII. He indicated that the insert addresses comments on the recommended plan that were made at the public hearings, written comments that have been received by Commission staff, and responses to those comments. He added that transcripts of the public hearings and copies of the written comments are presented in Appendix T. He noted that some pages of the letter received from Friends of Milwaukee’s Rivers (FMR), the Sierra Club, the Milwaukee County Conservation Coalition (MCCC), and the Natural Resources Defense Council (NRDC) were inadvertently omitted from the appendix during copying. He distributed copies of the entire letter to the Committee and indicated that the omission in Appendix T would be corrected. He explained that Appendix A, which documents the public contact activities that were conducted as a part of the planning process, will be drafted and included in PR 50.

In reference to the first bullet point on page 1 of the insert, Ms. Jooss asked whether there was a “Clean Rivers, Clean Lakes” water quality conference in 2007. Mr. Hahn replied that there were conferences in 2004, 2005, 2006, and 2007. He stated that the bullet point would be corrected.

[Secretary’s Note: The first bullet point on page 1 of the insert to Chapter XII was revised to read:

- “Four “Clean Rivers, Clean Lakes” water quality conferences that were conducted in conjunction with MMSD in 2004, 2005, 2006, **and 2007**, each of which was attended by several hundred people,”]

Mr. Hahn stated that no specific comments were made regarding the regional water quality management plan update at the October 15, 2007, public hearing in Racine. He added that no written comments were received from those in attendance at this meeting.

Mr. Hahn said that verbal comments were provided by two persons and written comments were provided by five persons at the October 16, 2007, public hearing in Milwaukee. He began review of the comments from this meeting, along with the responses from SEWRPC staff.

Mr. Hahn indicated that the insert contains a point-by-point listing of comments and responses. He noted that since Ms. Nenn's verbal comments at the meeting were consistent with the written comments in the letter from FMR, the Sierra Club, the MCCC, and the NRDC, the responses to the comments made in the letter also relate to Ms. Nenn's verbal comments. He began review of the comments in the letter from FMR and others.

Comments 8, 11, 12, 13, 14, 16, and 17 expressed support for various elements and recommendations of the plan. Mr. Hahn noted the appreciation of the SEWRPC staff for those statements of support.

Mr. Hahn stated that the first comment from the letter submitted by FMR and others was that the five-year level of protection (LOP) for sanitary sewer overflows (SSOs) for the MMSD system is illegal under Federal and State law. Mr. Hahn indicated that considerable discussions were held with the WDNR and USEPA over the five-year LOP and SEWRPC staff did not come away from those meetings with the sense that a five-year LOP was unacceptable. He noted that a five-year LOP would be an improvement over the current two-year LOP and that no significant difference was found in the modeling analysis between water quality under a five-year LOP and water quality under a 10-year LOP. Ms. Nenn stated that the language related to exceptional situations for SSOs that was drafted in response to her comment is an improvement over the previous wording elsewhere in the report. She added that she is not comfortable with attaching a frequency to the LOP because it suggests that an SSO every five years is acceptable. She noted that general rules for SSOs are being considered at the State level. Ms. Gayan stated that the LOP that the WDNR is looking at is not related to a frequency, but rather is tied to system characteristics. She continued that the Department looks at the protection and investment made relative to the improvement in water quality. Mr. Hahn replied that the purpose of the five-year LOP is to set the basis for which the system will be operated. Mr. Bunker supported that statement, noting that the LOP is a basis for design. There was additional discussion of this comment.

Mr. Hahn stated that the second comment from the letter submitted by FMR and others was that cost-effectiveness cannot be used to justify continuing pollution of our waterways. He indicated that the recommended plan uses cost-effectiveness to identify those actions that can most readily be implemented to achieve the greatest water quality improvement.

Mr. Hahn said that the third comment from the letter submitted by FMR and others encouraged SEWRPC to set more concrete water quality goals. Ms. Nenn noted that the Charles River plan (Boston) sets thresholds for reductions and indicated that her group would like there to be more tangible goals. Mr. Hahn replied that monitoring data should indicate success of the plan. He noted that some measures probably will not show impacts over a short time frame. Ms. Nenn noted that success can also be measured in the number of days that standards are met. Mr. Melching commented that it can take decades to see results from nonpoint source pollution controls because of the effects of sediment that is already in motion. Ms. Nenn commented that it is helpful to have tangible goals in order to keep "people's eyes on the ball." Mr. Hahn replied that the place to set these sorts of targets may be at the level of individual watersheds.

Mr. Hahn stated that the fourth comment from the letter submitted by FMR and others was that the regional water quality management plan must comply with the Clean Water Act's fishable and swimmable goals and antidegradation requirements regardless of cost effectiveness. He explained that the explanatory text for the comment states that an either/or approach cannot be practiced with reference to addressing point sources and nonpoint sources of water pollution and asks that SEWRPC analyze existing models in use and make recommendations of crucial policy and technical components that should be part of watershed permitting, watershed trading, and other mechanisms. He responded by noting that the plan recognizes the goals of the Clean Water Act and provides a framework for improving water quality. He commented that three quarters of the plan's \$2.7 billion cost is directed toward point source control measures. He stated that watershed permitting, pollutant

trading, and other measures will be tested as the implementation process moves forward and noted that the details will firm up as a trial watershed project moves forward. Ms. Nenn commented that watershed permitting may not address bacteria concentrations in urban areas. Mr. Hahn replied that bacteria may not be the appropriate pollutant to trade and noted that the issues of credits and trading will need much more consideration.

Mr. Hahn said that the sixth comment from the letter submitted by FMR and others was that sewage blending at the South Shore Treatment Plant was unacceptable. He noted that the plan called for a multi-step approach to addressing capacity issues at the South Shore plant with blending as a last resort if other options are not found to be feasible. He added that blending would include ultraviolet disinfection which would remove the pathogens. Mr. Bunker commented that the problem with blending has to do with public perceptions. He suggested revising the footnote on page 5 of the insert and removing the phrase “to acceptable levels” from the last sentence in the last paragraph on page 5 of the insert. Ms. Nenn commented that the literature she has read says that most pathogens are removed from sewage during secondary treatment and noted that MMSD’s permit does not set effluent standards for concentrations of viruses. Mr. Bunker replied that if the intensity and exposure to ultraviolet light are sufficiently high, everything is killed.

[Secretary’s Note: The phrase “to acceptable levels” was deleted from the last sentence of the last paragraph on page 5 of the insert.

Footnote 2 on page 5 of the insert was revised to read:

“Blending is the practice of diverting **diluted** wastewater flows **that exceed the wet weather capacity of the wastewater treatment plant** around secondary treatment during peak wet weather events in an effort to avoid significant damage to biological treatment units and loss of treatment capability. The diverted flows are then normally recombined with flows from the fully utilized secondary treatment units for further treatment, including disinfection, prior to discharge.]

Mr. Bunker suggested that the plan recommendations as stated in Chapter XII should include the text of the SEWRPC staff response to the seventh comment in the letter submitted by FMR and others.

[Secretary’s Note: The SEWRPC staff reviewed the second bullet point in the subsection entitled “*Recommendations of the Regional Water Quality Management Plan Relative to the MMSD South Shore Wastewater Treatment Plant*,” on page 25 of Chapter XII and found that the bulleted item includes the text of the response to the seventh comment.]

Regarding the portion of the ninth comment calling for public and peer review of the models to be used to develop total maximum daily loads, Mr. Hahn noted that the TMDL process is under the control of MMSD.

Mr. Hahn stated that the tenth comment from the letter submitted by FMR and others encouraged SEWRPC to come up with more concrete recommendations to deal with illicit discharges to waterways. He noted that there was not enough specific knowledge as to the sources of these discharges; therefore, the SEWRPC staff did not believe they could be more specific. Mr. Mueller commented that one source of illegal discharge is from unpermitted land dumping of holding tank wastes. He noted that the programs dealing with this are understaffed and underfunded and suggested that calling on the State to tighten up regulations regarding land dumping would be a step in the right direction. Mr. Hahn replied that language could be added to the plan.

[Secretary's Note: The following paragraph was inserted on page 34 of Chapter X at the end of the subsection entitled *Expanded Oversight and Maintenance of Private Onsite Wastewater Treatment Systems (POWTS)*:

“Another concern identified by the Committee was illegal land dumping of septage, consisting of sewage pumped from holding tanks and private onsite wastewater treatment systems (POWTS). It was noted by the Committee that the programs dealing with septage disposal are understaffed and underfunded, and it was suggested that the State should increase oversight of septage disposal and enforcement of violations. Disposal of septage is regulated under Chapter NR 113 of the *Wisconsin Administrative Code*. Section 281.48 (5m) of the *Wisconsin Statutes* states that a county may regulate the disposal of septage, subject to the approval of the WDNR. It is recommended that the WDNR and the counties in the study area work together to strengthen oversight and enforcement of regulations for disposal of septage and to increase funding to adequately staff and implement such programs.”

The following sentence was added at the end of the second full paragraph on page 31 of Chapter XII:

“Finally, it is recommended that the WDNR and the counties in the study area work together to strengthen oversight and enforcement of regulations for disposal of septage and to increase funding to adequately staff and implement such programs.”]

Ms. Nenn asked whether an appendix could be added to the plan discussing end-of-pipe treatment options for stormwater. Mr. Hahn responded that this is where the recommended risk analysis comes in. He continued that it is not desirable to site end-of-pipe treatment based on fecal coliform bacteria data without data on pathogens. He added that the available information probably is not sufficient for drafting an appendix.

Mr. Hahn reviewed Ms. Vivian Corres' comments and the SEWRPC staff response.

Mr. Hahn reviewed the written comments submitted by Mr. Gregory F. Bird. He noted that the wording of Mr. Bird's third comment would be double checked. Mr. Bunker noted relative to Mr. Bird's third comment that there is a legal definition of “best practices” for treatment; however, this does not appear to be the sense that Mr. Bird is using in his use of the term.

[Secretary's Note: SEWRPC staff reviewed Mr. Bird's comments in Appendix T and the wording in the chapter is correct.]

Mr. Hahn reviewed the written comments submitted by Mr. Bolton, those submitted by Dr. Runquist on behalf of the League of Women Voters of Milwaukee County, and the SEWRPC staff responses to these comments.

Mr. Hahn stated that verbal comments were provided by three persons at the October 23, 2007, public hearing in Newburg. He reviewed the comments from this meeting, along with the responses from SEWRPC staff.

A motion to approve preliminary draft Chapter XII, “Summary” of SEWRPC PR No. 50, *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds*, as amended, was made by Mr. Bunker, seconded by Ms. Jooss, and carried unanimously by the Committee.

OLD BUSINESS

There was no old business.

NEW BUSINESS

Mr. Schmidt asked Mr. Hahn to review the schedule for completion of the plan.

Mr. Hahn thanked the Committee members for their commitment to the process as evidenced by their continued engagement in the work of developing the plan.

Mr. Hahn stated that the comments from the meeting would be addressed in the minutes. These, he noted, will be approved through electronic mail. He said that the Commission's Planning and Research Committee will review PR No. 50 at their meeting on November 20, 2007. After that, he added, the Commission will consider the plan and PR No. 50 at its December 5, 2007, meeting. He noted that, consistent with normal Commission practice, TR-39 would not be reviewed by the Commission. He indicated that following approval of PR No. 50 by the Commission, Commission staff will have a number of loose ends to tie up. He stated that it is expected that PR No. 50 will be finalized in spring 2008 and that TR-39 will be finalized after that.

Mr. Hahn stated that after PR No. 50 is finalized, certified copies of the plan will be sent to the communities and counties in the study area and to the agencies involved in implementation for their endorsement. He noted that copies will be made available on CD and that members of the Committee will be asked in the e-mail regarding approval of the October 31, 2007, meeting minutes whether they would like to receive the report on CD or as a printed copy.

Mr. Holschbach asked whether there would be an executive summary of PR No. 50. Mr. Hahn replied that this would be considered. He noted that Chapter XII would be used as the summary for the Commission. Mr. Schmidt suggested that the presentation made at the public hearings might serve as a good summary for the Counties. Mr. Hahn indicated that Commission staff can make presentations to county boards if requested to do so.

Mr. Shafer thanked SEWRPC for a very good job.

VERIFICATION OF NEXT MEETING DATE AND LOCATION

Mr. Schmidt indicated that no further meetings of the Advisory Committee are scheduled. He thanked the Committee for its attendance at these meetings and for their work. He noted that the number of Committee members attending Advisory Committee meetings was close to two thirds of the membership and commented that this constitutes exceptional attendance.

ADJOURNMENT

The October 31, 2007, meeting of the Advisory Committee on the regional water quality management plan update was adjourned at 3:55 p.m. on a motion by Ms. Jooss, seconded by Mr. Behrens and carried unanimously by the Committee.

The following sections of the minutes address 1) comments on the plan that were received after the October 31, 2007, meeting and 2) issues documented in the minutes of previous meetings that were not on the critical path for completion of the plan report and were, thus, deferred until the draft report was essentially complete.

ADDITIONAL COMMENTS ON PRELIMINARY DRAFT CHAPTER XII, "SUMMARY," OF SEWRPC PR NO. 50 AS PROVIDED BY MS. JUDY JOOSS, TOWN AND COUNTRY RESOURCE CONSERVATION AND DEVELOPMENT, INC.

Ms. Jooss asked to be provided with a copy the SEWRPC staff presentation made at the three public informational meetings and hearings.

[Secretary's Note: It was decided to append the presentation to PR 50 as Appendix U. This appendix is attached herein as Exhibit B. The following sentence was added after the third sentence of the second full paragraph on page 2 of the insert to Chapter XII:

“A copy of this presentation is included in Appendix U.”]

**SEWRPC STAFF ADDITIONS TO PRELIMINARY DRAFT
CHAPTER III, “EXISTING AND HISTORICAL SURFACE WATER
AND GROUNDWATER CONDITIONS,” OF SEWRPC PR NO. 50**

Following review of this chapter by the Advisory Committee, Ms. Burzynski noted apparent anomalies between the total suspended solids (TSS) concentrations set forth in the original version of the chapter and data from the MMSD monitoring network that MMSD provided during meetings related to possible development of total maximum daily loads for several watersheds in the study area. The data in question were obtained from the MMSD/U.S. Geological Survey (USGS) Corridor Study Database. Upon further examination of those TSS data, it was found that some solids data were incorrectly included in the Corridor Study Database. The USGS corrected the TSS data, and the SEWRPC staff reanalyzed the information.

[Secretary's Note: The “Suspended Material” subsection of the section entitled “Surface Water Quality Conditions in the Greater Milwaukee Watersheds: 1975-2004” was revised and is set forth below:

“Suspended Material

Concentrations of total suspended solids (TSS) in samples collected from the mainstems of the five major streams and rivers of the greater Milwaukee watersheds show considerable variability, ranging from below the limit of detection to 1,400 mg/l. The mean concentrations of TSS during the period of record were 20.5 mg/l in the Kinnickinnic River, 21.4 mg/l in the Menomonee River, 25.1 mg/l in the Milwaukee River, 30.9 mg/l in Oak Creek, and 22.1 mg/l in the Root River. In the Kinnickinnic, Menomonee, and Milwaukee Rivers, mean concentrations of TSS were lower in the estuary than reaches upstream from the estuary. This reflects the fact that portions of the estuary act as a settling basin in which material suspended in water sink and fall out into the sediment. At most sampling stations, no significant time-based trends were detected in TSS concentrations (Table III-3). Statistically significant trends toward increasing TSS over time were detected at a few sampling stations in the estuary sections of the Menomonee and Milwaukee Rivers (Table III-4). TSS concentrations showed strong positive correlations with total phosphorus concentrations, reflecting the fact that total phosphorus concentrations include a large particulate fraction. TSS concentrations were also positively correlated with concentrations of fecal coliform bacteria and nutrients. TSS concentrations showed negative concentrations with water quality parameters that measure amounts of dissolved materials in water, including alkalinity, hardness, and specific conductance.”

The appropriate watershed chapters in Technical Report No. 39 were also revised to reflect the results of analysis of the corrected TSS data.]

**SEWRPC STAFF ADDITIONS TO PRELIMINARY DRAFT CHAPTER IV,
“SOURCES OF WATER POLLUTION,” OF SEWRPC PR NO. 50**

Revision of the total suspended solids data as noted in the preceding section of these minutes also necessitated some revision to the **Wet-Weather and Dry-Weather Loads** subsection of this chapter.

[Secretary's Note: The last two sentences of the third paragraph in that subsection were deleted and replaced with the following:

“For example, the maximum daily estimated wet-weather load of TSS at the N. 70th Street station along the Menomonee River for the baseline period was about 3.6 million pounds. Comparing this to the modeled data set forth in Table IV-8 shows that this single day's load represents about 20 percent of the estimated average annual load of TSS for the entire watershed.”

Table IV-13, which sets forth daily average pollutant loads for the 1998-2004 time period was changed to reflect the revised TSS data and is provided as Exhibit B-1.]

SEWRPC STAFF ADDITIONS TO PRELIMINARY DRAFT CHAPTER IX, “DEVELOPMENT OF ALTERNATIVE PLANS: DESCRIPTION AND EVALUATION,” OF SEWRPC PR NO. 50

In response to a comment by Mr. Mueller during the December 14, 2006, Advisory Committee meeting, it was agreed that the SEWRPC staff would expand Tables IX-1 and IX-3, which present components and costs of the screening alternatives and the alternative water quality management plans, respectively, to indicate whether implementation of individual alternative components might require enactment of new or modified regulations or changes in enforcement of regulations.

[Secretary's Note: Tables IX-1 and IX-3 were modified and are included in Exhibit B-1a. Also, Table X-2, which sets forth the components and estimated costs of the recommended plan, was modified in a similar manner, and is included in Exhibit K.]

SEWRPC STAFF ADDITIONS TO PRELIMINARY DRAFT CHAPTER X, “RECOMMENDED WATER QUALITY MANAGEMENT PLAN,” OF SEWRPC PR NO. 50

During finalization of the MMSD 2020 facilities plan, certain refinements to the plan were made. The following Secretary's Note addresses some of those refinements and the corresponding changes to the SEWRPC regional water quality management plan update.

[Secretary's Note: The components and costs of the recommended interim biosolids plan were revised as indicated in Table X-3, which is attached as Exhibit L. The main change is to increase the total cost of the interim biosolids plan from \$251 million to \$270 million. The “Cost Analysis” sections on page 74 of Chapter X and on page 46 of Chapter XII of PR No. 50 were revised to reflect a total cost of \$1.492 billion for new components of the recommended regional water quality management plan, and, in Table X-2, the cost of implementing the MMSD facilities plan was increased from \$935.9 million to \$954.9 million to reflect the increased cost of the interim biosolids plan component. Subtotals and totals in Table X-2 were also revised accordingly.]

[Secretary's Note: Final adjustments to the water quality model following Advisory Committee review of Chapter X resulted in some adjustments to the water quality results. The model changes did not result in any significant changes to the evaluation of compliance with water quality standards under the conditions modeled. The model changes were generally made in the Menomonee and Milwaukee River watersheds, which, in turn, affected the estuary, outer harbor and nearshore Lake Michigan area somewhat. Thus, the Appendix M water quality tables and Figures X-1 through X-6a, which summarize compliance with water quality standards under various conditions, were revised. The evaluation and summarization of the information in Figures X-1 through X-6a is set forth in the *Compliance with Adopted Water Quality Standards* subsection of the report section entitled “Ability of the Recommended

Water Quality Management Plan to Meet Adopted Objectives and Standards.” Exhibit B-3 of these minutes includes the revised “*Compliance*” subsection and the revised Figures X-1 through X-6a. Because of the large size of Tables M-1 through M-6, the final tables are not reproduced herein, but they are available at sewrpc.org under “Water Quality Management Plan” and “Plan Chapters.”]

[Secretary’s Note: Following the October 31, 2007, Advisory Committee meeting, the SEWRPC staff received a copy of the November 2007, U.S. Army Corps of Engineers (USCOE) Detroit District report entitled *Phase II Report – Draft Dredged Material Management Plan Study and Environmental Assessment – Milwaukee Harbor, Wisconsin*. That report presents the evaluation of alternative plans for dredged material disposal and it includes selection of a recommended plan. Based on review of the report, the first paragraph of the Current Navigational Dredging Activities in the Lake Michigan Inner and Outer Harbor Areas subsection and the Dredged Material Disposal subsection of the ***Restoration, Remediation, and Dredging Programs*** subsection were revised as follows:

“CURRENT NAVIGATIONAL DREDGING ACTIVITIES IN THE
LAKE MICHIGAN INNER AND OUTER HARBOR AREAS

Dredging and the disposal of the dredged materials is presently carried out within the Milwaukee Harbor estuary for maintenance of adequate water depths for commercial navigation. Dredged materials are disposed of at the Jones Island Confined Disposal Facility (CDF) constructed by the U. S. Army Corps of Engineers (USCOE) in 1975 along the shoreline of the southern portion of the outer harbor (see Map X-11e). As shown on Map X-11e, the current USCOE dredging program is focused on the outer harbor where a 28-foot depth below the established low water datum is **authorized and maintained**; the main gap from the outer harbor into Lake Michigan where a 30-foot depth is **authorized and maintained**; a short reach of the Milwaukee River downstream of E. Buffalo Street where a 21-foot depth is **authorized and maintained**; the Menomonee River from N. 20th Street extended to its confluence with the Milwaukee River where an 18-foot depth is currently maintained, **although a 21-foot depth is authorized**; the South Menomonee Canal where an approximately 16-foot depth is maintained, **although a 21-foot depth is authorized**; and the Kinnickinnic River from S. Kinnickinnic Avenue to the Union Pacific Railroad swing bridge, where a 21-foot depth is **authorized and maintained** and from the swing bridge to the confluence with the Milwaukee River where a 27-foot depth **authorized and maintained**. The reach of the Milwaukee River estuary upstream of E. Buffalo St. that was historically dredged has now been Federally deauthorized and is no longer dredged. The reach of the Menomonee River from N. 25th Street downstream to N. 20th Street and the Burnham Canal, **where 21-foot dredging depths are authorized**, are part of the USCOE “backlog” and they have not been regularly maintained in recent years.”

The following subsection is a complete revision of the previous version of that subsection. It includes a recommendation for expansion of the CDF based on the USCOE draft report recommendation. The previous draft of Chapter XII called for consideration of Alternative No. 2 as described below, since that option was recommended under the 1987 SEWRPC Milwaukee Harbor estuary study.)

“DREDGED MATERIAL DISPOSAL

The USCOE Detroit District recently completed a dredged material management plan for the Milwaukee Harbor.¹ That study addresses future dredged material disposal needs from continued navigational dredging and from the USEPA/WDNR Kinnickinnic River Environmental Restoration Project. The study estimates that disposal of the approximately 176,000 cubic yards of dredged material from the Kinnickinnic River Project would use up the remaining capacity in the Jones Island CDF by about 2011. The dredged material management plan is designed to provide an additional 510,000 cubic yards of capacity, which is expected to meet dredged material disposal needs for 20 years beyond 2011. The alternatives considered under the USCOE dredged material management plan include:

- Alternative No. 1 – Construct the Milwaukee Harbor (Jones Island) Dredged Material Disposal Facility (DMDF) on top of the existing Jones Island CDF. Capital cost = \$3.5 million.
- Alternative No. 2 - Construct a DMDF adjacent to the existing Jones Island CDF (A version of this alternative was recommended under the 1987 SEWRPC Milwaukee Harbor estuary study.) Capital cost = \$12.3 million.
- Alternative No. 3 – Open Water placement of dredged material. Capital cost = \$8.3 million.
- Alternative No. 4 –Beach Nourishment. Dredged material is fine-grained with low, but detectable levels of PCBs, PAHs, and metals. Fine-grained nature of sediment makes it unsuitable for beach nourishment, and sediment would not meet State of Wisconsin standards for beneficial use of solid waste because of pollutant concentrations.
- Alternative No. 5 - No Action

Based on cost, water quality considerations, and permitting considerations, the USCOE dredged material management plan recommends that Alternative No. 1 be implemented. That alternative plan calls for constructing a raised perimeter dike offset from the existing CDF dikes. The top of the perimeter dike would be about eight feet above the existing dikes. Under the recommended plan, it would be possible to mound the spoil pile within the facility to an elevation about five feet above the raised perimeter dike. Consistent with the recommendation of the 2007 USCOE Detroit District study, under this regional water quality management plan update it is recommended that the Jones Island CDF be expanded by constructing a dredged material disposal facility on top of the existing CDF.”

The Dredged Material Disposal subsection in Chapter XII, **SUMMARY**, was revised as follows:

“DREDGED MATERIAL DISPOSAL

A dredged material management plan for the Milwaukee Harbor, which was completed by the USCOE Detroit District in November 2007, addresses future dredged material disposal needs from continued navigational dredging and from the USEPA/WDNR Kinnickinnic

¹*U.S. Army Corps of Engineers Detroit District, Phase II Report – Draft Dredged Material Management Plan Study and Environmental Assessment – Milwaukee Harbor, Wisconsin, November 2007.*

River Environmental Restoration Project. The study estimates that disposal of the approximately 176,000 cubic yards of dredged material from the Kinnickinnic River Project would use up the remaining capacity in the Jones Island CDF by about 2011. The dredged material management plan is designed to provide an additional 510,000 cubic yards of capacity, which is expected to meet dredged material disposal needs for 20 years beyond 2011. The USCOE study evaluated alternatives plans and selected a recommended plan that calls for constructing a raised perimeter dike that is offset from the existing CDF dikes. The regional water quality management plan update adopts that same recommendation.”

Also, Map X-11e, attached as Exhibit B-4, was revised to recommend the Federally authorized dredging depth of 21 feet along the Menomonee River downstream from N. 20th Street extended, the South Menomonee Canal, and the portion of the Burnham Canal that is authorized for dredging. The previous version of the map showed the current depths to which dredging occurs in those reaches, with those depths being less than the authorized depth. The recommendation is now consistent with the Corps of Engineers intention to eliminate the dredging “backlog” in the estuary.

The following sentence was added at the end of the first paragraph in the Dredging for Navigation subsection:

“With the exception of the Menomonee River upstream of N. 20th Street extended, where navigational dredging is not considered to be necessary, the recommended dredging depths are consistent with the Federally-authorized depths.”

The \$3.5 million estimated capital cost and the \$12,000 annual operation and maintenance cost of the CDF expansion were added to Table X-2 and Appendix Q and the texts of Chapters X and XII were revised to reflect total plan capital and operation and maintenance cost that include those amounts.]

SEWRPC STAFF ADDITIONS TO PRELIMINARY DRAFT CHAPTER XI, “PLAN IMPLEMENTATION,” OF SEWRPC PR NO. 50

In the preliminary draft of this chapter that was reviewed by the Advisory Committee it was noted that the “Summary” section would be completed upon finalization of the designated management agency tables. Those Tables are attached as Exhibits C through I, and the revised “Summary” section is attached as Exhibit J. This draft of the “Summary” section also addresses the comments made by Ms. Burzynski and Mr. Shafer during the August 7, 2007, meeting at which the initial draft of Chapter XI was reviewed. They asked that Chapter XI include additional targeting of financial resources to critical areas for achieving water use objectives.

Appendix Q, which sets forth costs for recommended plan components for each municipality, county, or agency with plan implementation responsibilities, was presented to the Advisory Committee at the August 7, 2007, meeting. At that time, Mr. Hahn noted that the Appendix would be revised to exclude private sector costs so that each public sector entity would have a better understanding of its potential costs to implement the plan. He also said that a table would be added summarizing public and private sector costs.

[Secretary’s Note: Appendix Q has been revised to include only public sector costs. Because of the very large size of the table, it is not included with these minutes. However, Appendix Q can be viewed at sewrpc.org, under “Water Quality Management Plan,” and “Plan Chapters.” Table XI-7a, which summarizes public and private sector costs, is included with these minutes as Exhibit K.]

The following Secretary's Note addresses changes to the SEWRPC regional water quality management plan update based on refinements made during finalization of the MMSD 2020 facilities plan.

[Secretary's Note: The "Concrete Channel Renovation and Rehabilitation" subsection on page 32 was revised to read as follows:

"Proposed MMSD projects to remove concrete channel linings along **portions of Underwood Creek and the Menomonee River** are scheduled to be completed prior to 2020 under both the AIS and FIS. Projects for **other reaches of Underwood Creek, the South Branch of Underwood Creek, Honey Creek, Woods Creek**, the Kinnickinnic River, and Wilson Park Creek are only included in the FIS for implementation in the time frame of 2008 through 2020."]

[Secretary's Note: Table R-2 in Appendix R was revised to more closely reflect plan recommendation categories and corresponding grant programs. The revised table is attached as Exhibit L.]

[Secretary's Note: The sentence indicated in bold text below was added on page 63 of Chapter XI in response to comments from Mr. John Pfender of the WDNR as noted on page 18 of the Advisory Committee meeting minutes of January 31, 2007.

"Possible Funding Sources for Implementing Rural and Urban Nonpoint Source Pollution Abatement Recommendations

There are several sources of funding that can potentially be used for carrying out the urban and rural nonpoint source pollution abatement recommendations of the water quality management plan update. The principal agencies that offer applicable funding programs include the WDNR; the Wisconsin DATCP; the USDA; and the USEPA. **Some of these Federal and State grant programs may be coordinated to provide cost share funding necessary for implementing agricultural practices under Chapter NR 151 of the Wisconsin Administrative Code.**

Respectfully Submitted,

Michael G. Hahn
Secretary

Exhibit A

Table VIII-1

EXISTING 2000 AND FORECAST 2020 POPULATION IN THE GREATER MILWAUKEE WATERSHEDS

Civil Division	Existing 2000 Population ^a	Original 2020 Baseline Population Forecast ^{a,b}	Revised 2020 Baseline Population Forecast ^{a,c}
Dodge County			
Village of Lomira	155	147	--
Town of Lomira	132	125	--
Subtotal	287	272	--
Fond du Lac County			
Village of Campbellsport	1,913	2,115	--
Town of Ashford	1,773	2,030	--
Town of Auburn	2,075	2,496	--
Town of Byron	375	428	--
Town of Eden	778	718	--
Town of Osceola	1,779	2,074	--
Subtotal	8,693	9,861	--
Kenosha County			
Town of Paris	56	60	--
Subtotal	56	60	--
Milwaukee County			
City of Cudahy	18,429	20,599	18,681
City of Franklin ^d	29,494	45,314	40,411
City of Glendale	13,367	14,607	13,532
City of Greenfield	35,476	46,534 ^e	36,899
City of Milwaukee	596,974	645,888	601,327
City of Oak Creek	28,456	49,291	41,474
City of South Milwaukee	21,256	22,351	22,351
City of St. Francis	8,662	14,299	10,505
City of Wauwatosa	47,271	56,484 ^e	48,278
City of West Allis	61,254	79,522	63,866
Village of Bayside	4,507	4,490	4,490
Village of Brown Deer	12,170	14,490 ^e	12,470
Village of Fox Point	7,012	7,001	7,001
Village of Greendale	14,405	16,043 ^e	14,396
Village of Hales Corners	7,765	10,021	9,062
Village of River Hills	1,631	1,667	1,667
Village of Shorewood	13,763	13,853	13,853
Village of West Milwaukee	4,201	4,632	4,632
Village of Whitefish Bay	14,163	14,707	14,707
Subtotal	940,267	1,081,813	979,622

Table VIII-1 (continued)

Civil Division	Existing 2000 Population ^a	Original 2020 Baseline Population Forecast ^{a,b}	Revised 2020 Baseline Population Forecast ^{a,c}
Ozaukee County			
City of Cedarburg	10,906	14,890	--
City of Mequon	22,601	29,666 ^e	25,231
Village of Bayside	11	20	20
Village of Fredonia	1,863	2,307	--
Village of Grafton	11,090	13,295	--
Village of Saukville	4,088	5,236	--
Village of Thiensville	3,254	3,811	3,529
Town of Cedarburg	5,703	5,894	--
Town of Fredonia	1,955	2,155	--
Town of Grafton	3,421	3,595	--
Town of Port Washington	414	414	--
Town of Saukville	1,852	2,018	--
Subtotal	67,158	83,301	78,584 ^f
Racine County			
City of Racine	55,696	54,493	--
Village of Caledonia ^g	23,438	26,304	--
Village of Mt. Pleasant	5,925	8,344	--
Village of Union Grove	2,528	3,222	--
Village of Wind Point	1,941	1,863	--
Town of Dover	552	619	--
Town of Raymond	3,348	3,547	--
Town of Yorkville	2,834	3,125	--
Caddy Vista Sanitary District ^g	756	1,371	1,002
Subtotal	97,018	102,888	102,519 ^f
Sheboygan County			
Village of Adell	517	510	--
Village of Cascade	666	671	--
Village of Random Lake	1,551	1,776	--
Town of Greenbush	1,389	1,620	--
Town of Lyndon	939	1,117	--
Town of Mitchell	1,098	1,480	--
Town of Scott	1,804	2,072	--
Town of Sherman	1,459	1,512	--
Subtotal	9,423	10,758	--
Washington County			
City of West Bend	27,652	38,039	--
Village of Germantown	18,260	25,459	22,541
Village of Jackson	4,944	5,419	--
Village of Kewaskum	3,185	4,312	--

Table VIII-1 (continued)

Civil Division	Existing 2000 Population ^a	Original 2020 Baseline Population Forecast ^{a,b}	Revised 2020 Baseline Population Forecast ^{a,c}
Washington County (continued)			
Village of Newburg	1,046	1,564	--
Town of Barton	2,543	2,656	--
Town of Farmington	3,239	3,417	--
Town of Germantown	205	189	--
Town of Jackson	3,541	3,834	--
Town of Kewaskum	1,211	1,267	--
Town of Polk	3,088	3,249	--
Town of Richfield	1,893	1,957	--
Town of Trenton	4,591	4,806	--
Town of Wayne	438	460	
Town of West Bend	4,459	5,010	
Subtotal	80,295	101,638	98,720 ^f
Waukesha County			
City of Brookfield ^d	17,176	21,075	18,227
City of Muskego ^d	20,066	34,125	25,340
City of New Berlin ^d	34,324	43,349	38,145
Village of Butler	1,881	1,908	1,908
Village of Elm Grove	6,249	8,113	6,347
Village of Menomonee Falls ^d	29,372	38,774	32,196
Town of Brookfield	278	270	--
Town of Lisbon	13	25	--
Subtotal	109,359	147,639	122,458 ^f
Total	1,312,556	1,538,230	1,402,854 ^f

^aFor communities in the MMSD planning area, actual civil division and watershed boundaries were used. For communities outside the MMSD planning area, civil division and watershed boundaries were approximated by U.S. Public Land Survey one-quarter sections.

^bBased upon projections in the 2020 land use plan within the study area, but outside the MMSD planning area. Based upon projections by local communities within the MMSD planning area.

^cFor communities in the MMSD planning area, based upon linear interpolation between existing 2000 population and projected 2035 population in the 2035 regional land use plan. The original 2020 baseline forecasts were used for those communities in the study area, but outside of the MMSD planning area.

^dIncludes the portion of the community within the Fox River watershed that is within the MMSD planning area.

^eUpdated original 2020 projection based on additional data submitted by community.

^fRepresents the sum of original 2020 forecast for communities outside of the MMSD planning area and revised 2020 forecasts for communities in the MMSD planning area.

^gVillage of Caledonia population does not include the portion of the Village comprising the Caddy Vista Sanitary District.

Source: Wisconsin Department of Administration and SEWRPC.

Exhibit B

SEWRPC Planning Report No. 50

**A REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE
FOR THE GREATER MILWAUKEE WATERSHEDS**

Appendix U

**PRESENTATION FOR PUBLIC
INFORMATION MEETINGS/PUBLIC HEARINGS
OCTOBER 2007**

(This Page Left Blank Intentionally)



SEWRPC Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds



Presentation for
PUBLIC INFORMATION MEETINGS/PUBLIC HEARINGS
October 2007
Michael G. Hahn, PE, PH
SEWRPC Chief Environmental Engineer



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

Cooperative Intergovernmental Watershed Based Planning Program



Partners:





REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE (RWQMPU or 208 Plan)

- SEWRPC is State-designated and Federally-recognized areawide water quality planning agency
- RWQMPU 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 local eligibility for Federal and State sewerage system loans and grants
 - Basis for issuance by WDNR of Wisconsin Pollutant Discharge Elimination System (WPDES) permits
 - Basis for public and private sanitary sewer extension approvals



REGIONAL WATER QUALITY MANAGEMENT PLANNING IN SE WISCONSIN

- Initial 1979 Regionwide Plan
- 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 (sewer service areas, environmental corridor protection, etc.)
- **2003-2007 RWQMPU for Greater Milwaukee Watersheds**



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

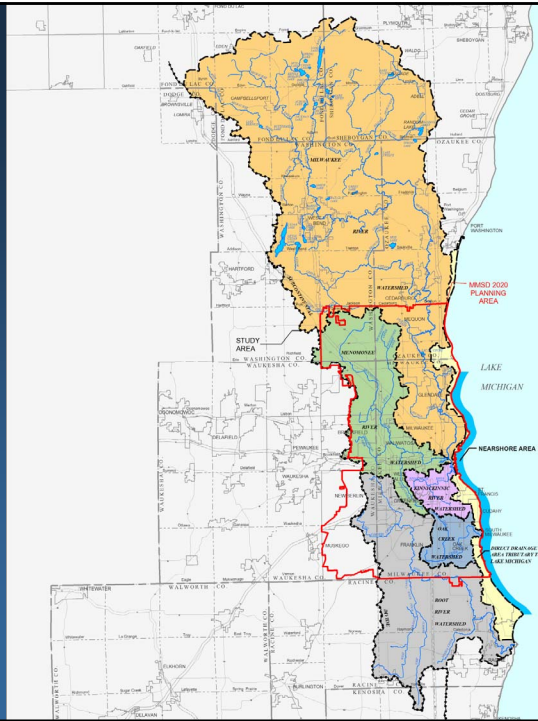


SEWRPC Regional Water Quality Management Plan Update / MMSD 2020 Facilities Plan (2020 FP)

- Parallel, coordinated planning processes
 - Both utilize the same watershed-based water quality models
 - Joint Citizens Advisory Council and Watershed Officials Forum
- SEWRPC RWQMPU also has:
 - Technical Advisory Committee
 - Modeling Subcommittee

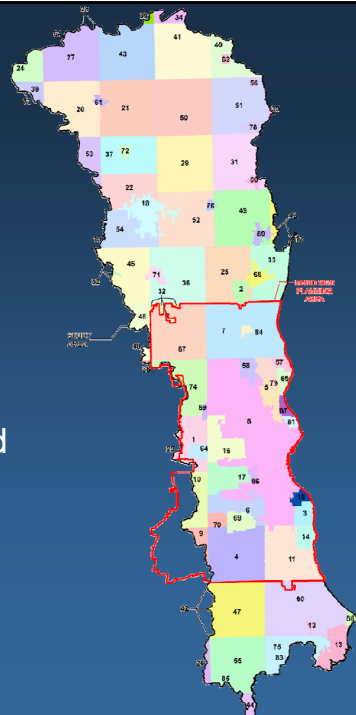


SEWRPC Regional Water Quality Management Plan Update Study Area



Civil Divisions

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





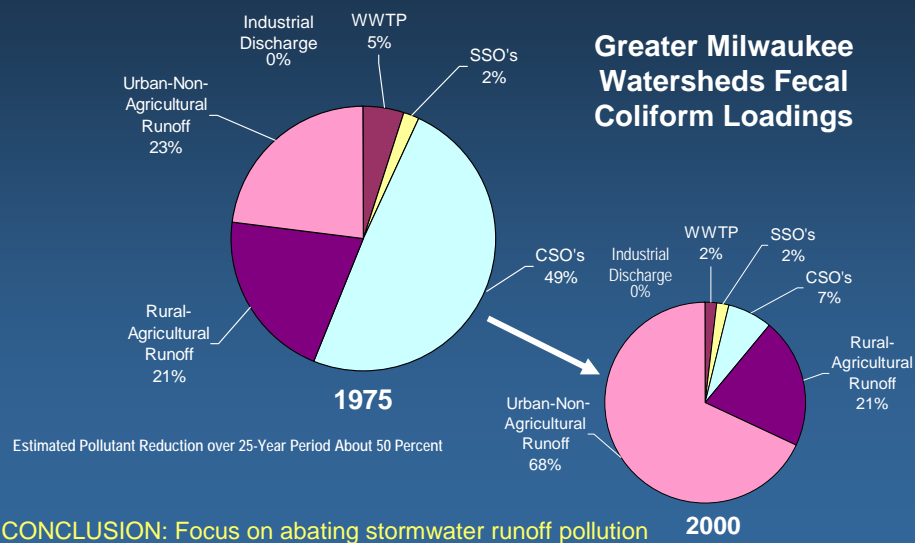
SEWRPC Regional Water Quality Management Plan Update

➤ SEWRPC is Preparing Two Reports:

- Planning Report No. 50, *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds*
- Technical Report No. 39, *Water Quality Conditions and Sources of Pollution in the Greater Milwaukee Watersheds*
- View preliminary draft chapters at sewrpc.org under “Water Quality Management Plan” and “Plan Chapters”



Pollution Sources Summary





Conditions Simulated in Water Quality Models

- Existing Year 2000
- Planned Year 2020

SCENARIOS: "BOOKEND" CONDITIONS BUILT ON THE FUTURE SITUATION

- 1A: No Sanitary Sewer Overflows (SSO) and No Combined Sewer Overflows (CSO) with Sewer Separation in MMSD Combined Sewer Service Area (CSSA).

CAPITAL COST=\$5.1 BILLION

- 1B: No SSOs and No CSOs – No Sewer Separation in CSSA.

CAPITAL COST=\$5.8 BILLION

- 1C: No SSO with Increased Level of Protection (LOP) for CSO.

CAPITAL COST=\$2.2 BILLION

- 1D: No SSO based on I/I Reduction with Increased LOP for CSO.

CAPITAL COST=\$7.7 BILLION

- 2: High Level of Best Management Practices. **CAPITAL COST=\$2.0 BILLION**



CONCEPTUAL ALTERNATIVE PLANS

- No Action – Future 2020 Condition

- Regulatory Alternatives

- B1 - Meet Point and Nonpoint Source Discharge Regulations
- B2 – Operate MMSD System to Minimize Overflows, Meet Nonpoint Source Discharge Regulations
- **BOTH HAVE CAPITAL COST OF \$2.0 BILLION**

- Watershed-Based Alternatives

- C1 – Goal is Compliance with Receiving Water Quality Standards. **CAPITAL COST OF \$2.6 BILLION**
- C2 – Goal is Compliance with Receiving Water Quality Standards Plus "Green" Components Directed Toward Water Quality Improvement. **CAPITAL COST OF \$2.2 BILLION**

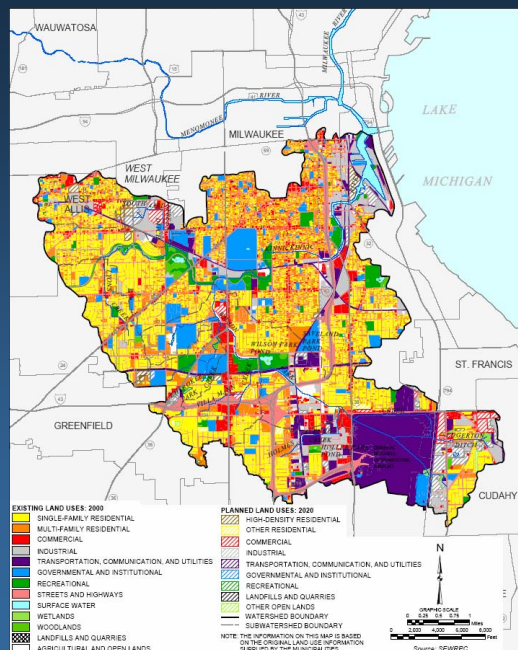


Recommended Plan Components

- Land Use Plan Element
- Surface Water Quality Element
 - Urban and rural nonpoint source pollution abatement
 - Point source pollution abatement measures in areas outside the MMSD planning area
 - Includes 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

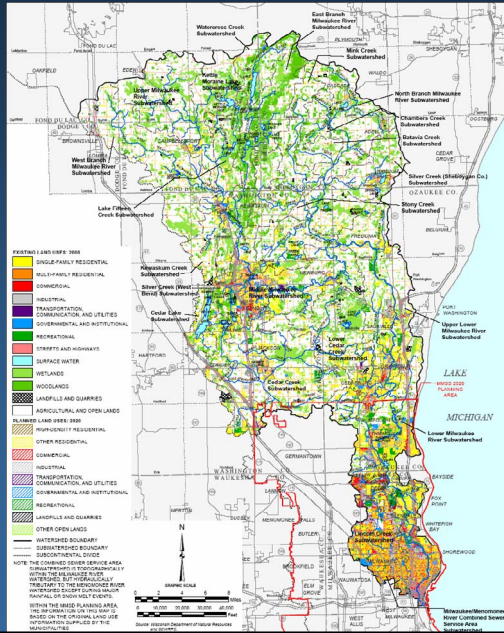
Land Use Plan Element: Kinnickinnic River Watershed

- Conveyance facilities sized using year 2020 population and land use based on community-supplied information and
- MMSD regional storage and treatment facilities sized using 2020 population and land use based on 2035 regional land use plan

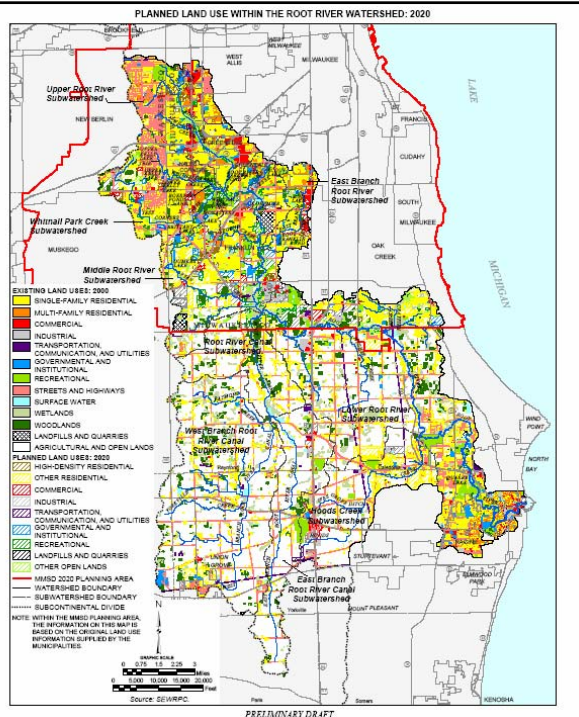


Land Use Plan Element: Milwaukee River Watershed

- Conveyance facilities sized using year 2020 population and land use based on community-sourced information and
- MMSD regional storage and treatment facilities sized using 2020 population and land use based on 2035 regional land use plan



- Land Use Plan Element: Root River Watershed



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



Urban and Rural Runoff Control

- Nonpoint Source Control Component
 - Address urban and rural stormwater runoff pollution
 - Incorporate environmental restoration measures
 - Recognize Federal and State rules regarding urban and rural stormwater management



Rural Runoff Control Plan - Overview

➤ Rural

- Realistic level of implementation of Chapter NR 151 rules
- Manure and nutrient management
- Controls on barnyard runoff
- Riparian buffers
- Wetland and prairie restoration
- Restrict livestock access to streams
- Manage milking center wastewater
- Manage private onsite waste treatment systems



Urban Runoff Control Plan - Overview

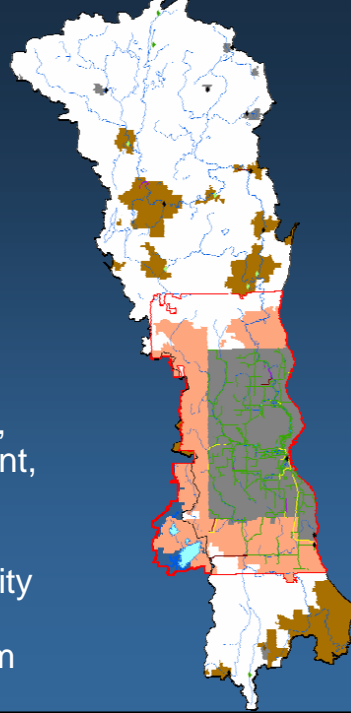
➤ Urban

- Full implementation of Chapter NR 151 rules
- Enhanced program to detect and eliminate illicit discharges to the stormwater management system and to control urban-sourced pathogens
- Fertilizer management (low phosphorus fertilizer)
- Chloride reduction (roads and water softeners)
- Green features such as rain barrels, rain gardens, and stormwater trees
- Management of pet litter, marina waste
- Control of non-migratory waterfowl
- Litter control



Point Source Pollution Abatement Measures in Areas Outside the MMSD Planning Area

- Refinement of Sewer Service Areas
- Facilities planning: Cedarburg/Grafton, Caledonia, Fredonia, Jackson, Mt. Pleasant, Newburg, Racine, Raymond, Sturtevant, and Yorkville
- Programs similar to the Capacity Management, Operations, and Maintenance (CMOM) Program



Instream Water Quality Measures

- Consistent with flood control needs, restore or rehabilitate selected degraded stream channels
- Evaluate condition of MMSD Kinnickinnic River flushing station
- Develop dam abandonment and associated riverine area restoration plans
- Design stream crossings to allow passage of aquatic organisms
- Fisheries
 - Protect remaining natural channels
 - Minimize number of stream crossings
 - As opportunities arise, remove or retrofit obstructions to fish passage





Other Surface Water Quality Measures

- Identify and address local sources of beach contamination
- Conduct household hazardous waste collection programs
- Conduct pharmaceutical and personal care product collection programs
- Identify and address exotic invasive species in lakes and riverine areas



Other Surface Water Quality Measures

- Water quality monitoring recommendations:
 - Continue current MMSD, WDNR, and USGS monitoring programs
 - Continue to upgrade Citizen-based programs
 - Modify, or expand, existing programs to include monitoring on tributaries
 - Add fishery and macroinvertebrate monitoring at long-term stations
 - Add habitat monitoring stations
 - Monitoring organizations should standardize 1) quality assurance and control and 2) sampling protocols and analyses





Recommended Plan

- **Does not call for** upgrading MMSD's South Shore WWTP through provision of physical chemical treatment
 - Potential capital cost saving of \$97 to \$152 million (Might apply cost saving to additional, targeted nonpoint source controls)
- **Calls for**
 - Studies of system capacities at Jones Island and South Shore WWTPs
 - Monitoring actual population and land use changes
 - Evaluating the success of the recommended efforts to “hold the line” on I/I
 - Continued efforts to improve and refine the MMSD real-time control strategy for the deep tunnel (variable VRSSI), including the effect of upgraded pumping capacity from the tunnel to Jones Island
 - **Demonstration project for physical-chemical treatment at South Shore**
 - Continued study of blending at South Shore
- **MMSD and customer communities attempt to obtain regulatory recognition of the integrated nature of the MMSD system**
 - Possible elimination of the distinction between tunnel-related SSOs and CSOs
- **Depending on outcome of these activities, provision of additional capacity at South Shore may not be needed**



Recommended Plan

- If, in the future, results of variable VRSSI and capacity analyses, future population trends, and I/I efforts indicate that a capacity upgrade is needed at the South Shore WWTP, and physical-chemical treatment with chemical flocculation is found to be feasible:
 - Implementation of physical-chemical treatment with chemical flocculation would be recommended at South Shore



Integrated Watershed-Based Recommended Plan

- If, in the future, a capacity upgrade is needed at the South Shore WWTP, and physical-chemical treatment with chemical flocculation is found to not be feasible:
 - Blending would be recommended at South Shore



Cost Analysis

- Estimated **capital cost of new measures** recommended under the RWQMPS: **\$1.5 billion**, annual O&M cost is \$28.5 million
- Additional, estimated capital cost of associated existing, committed, and regulatory programs: \$1.2 billion, annual O&M cost is \$33.0 million. Those costs would be incurred regardless of whether full plan is implemented
- Estimated total capital cost of both components : \$2.7 billion, annual O&M cost is \$61.5 million



Summary of Plan Costs

Plan Category	Estimated Capital Cost	Average Annual Operation and Maintenance Cost
Urban runoff pollution abatement	\$239.0 million	\$34.7 million
Rural runoff pollution abatement	\$244.0 million	\$21.9 million
MMSD & member communities sewerage system	\$1,962.0 million	\$1.5 million
Instream measures	\$180.4 million	\$0.6 million
Other sewerage systems	\$70.1 million	\$0.8 million
Monitoring and Other	\$1.0 million	\$1.9 million
Total	\$2.70 billion	\$61.5 million

Note: Of the total capital cost, \$1.470 billion, or 54 percent, represent new expenditures, of the total Operation and Maintenance cost, \$28.5 million, or 46 percent, represent new expenditures.

Source: MMSD, HNTB, and SEWRPC.

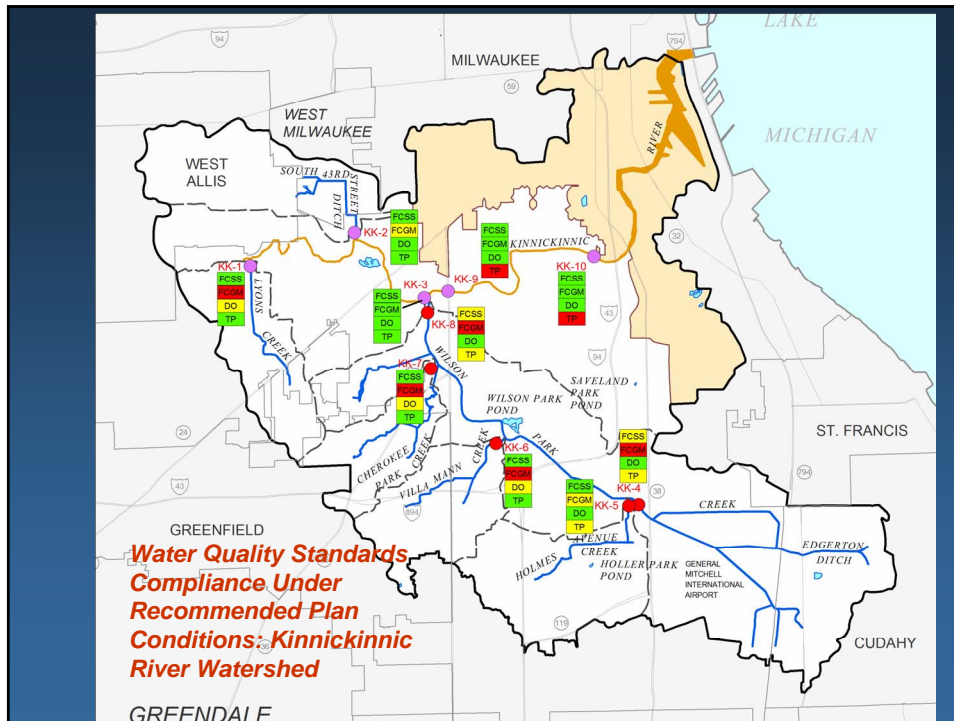
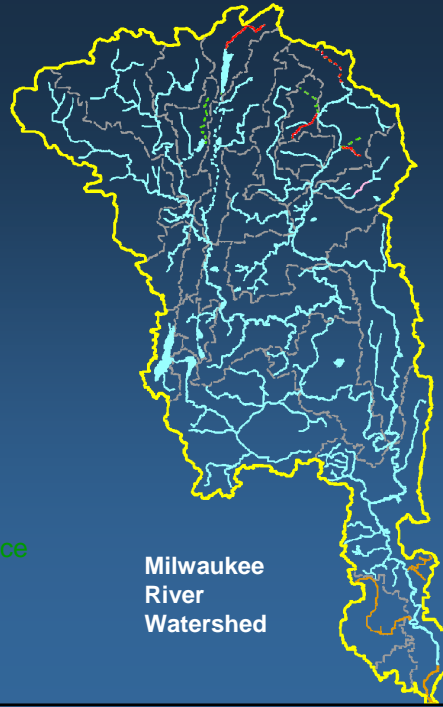


Ability of Recommended Plan to Meet Water Use Objectives and Water Quality Standards

- 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

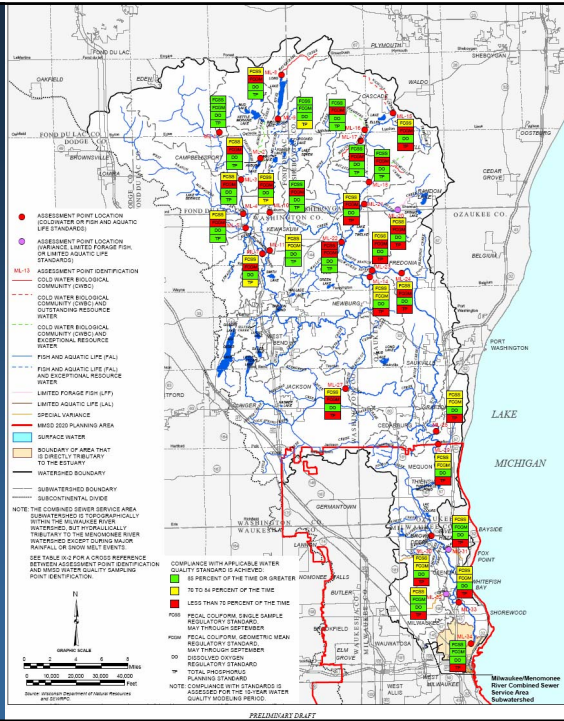
Conformance with Water Quality Standards at Given Locations in Streams

- Water Use Objectives
 - Coldwater Biological Community (CWBC)
 - Fish and Aquatic Life (FAL)
 - Limited Forage Fish
 - Limited Aquatic Life
 - Special Variance (Fecal coliform and DO Standards)
 - CWBC & Outstanding Resource Water (Dashed)
 - CWBC & Exceptional Resource Water (Dashed)
 - FAL & Exceptional Resource Water (Dashed)

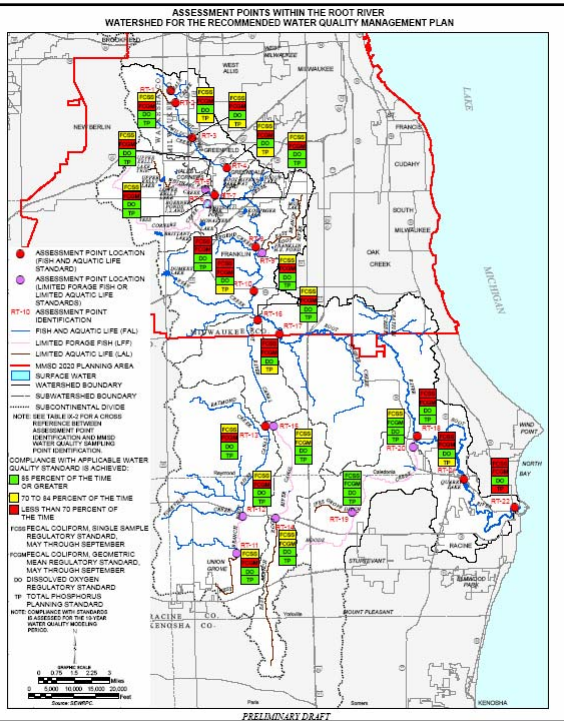




Water Quality Standards Compliance Under Recommended Plan Conditions: Milwaukee River Watershed



Water Quality Standards Compliance Under Recommended Plan Conditions: Root River Watershed





Implementation Plan

- Assignment of implementation responsibilities
- Costs apportioned between public and private sectors and estimated by community
- Information on grant funding programs



Implementation Plan

- Watershed-based permit will be considered
 - Incorporate existing WPDES permits for WWTP, municipal separate storm sewer systems, and Concentrated Animal Feeding Operations (CAFOs)
 - Expanded State cost-share funding and/or water quality credit trading to provide incentives to address unpermitted agricultural/rural nonpoint sources



Next Steps for the Regional Water Quality Management Plan Update

- Completion of Technical Advisory Committee review of planning report
- Public informational meetings
- Adoption of the plan by the Regional Planning Commission – Anticipated in December 2007
- WDNR approval and Governor's certification of plan to USEPA
- USEPA approval of plan
- Endorsement of plan by counties and other local units of government

Exhibit B-1

Table IV-13

DAILY AVERAGE POLLUTANT LOADS AT WATER QUALITY SAMPLING STATIONS IN THE GREATER MILWAUKEE WATERSHEDS: 1998-2004^a

Sampling Station	Water Quality Parameter	Dry Weather			Wet Weather		
		Minimum	Maximum	Mean	Minimum	Maximum	Mean
Kinnickinnic River at S. 7th Street	Biochemical Oxygen Demand (pounds)	4.1	655.5	167.5	187.3	31,096.6	4,281.2
	Copper (pounds)	0.2	1.0	0.4	1.3	102.0	12.0
	Fecal coliform bacteria (trillions of cells)	<0.1	11.4	1.1	0.3	434.5	60.4
	Total nitrogen (pounds)	18.6	168.9	69.2	148.4	15,548.3	1,525.5
	Total phosphorus (pounds)	1.4	13.1	5.4	7.0	1,172.5	159.1
	Total suspended solids (pounds)	28.6	1,884.5	397.9	730.4	764,643.0	85,060.1
Menomonee River at 70th Street	Biochemical Oxygen Demand (pounds)	16.7	2,589.0	408.4	97.6	85,680.2	15,825.9
	Copper (pounds)	0.3	6.0	2.4	4.9	538.5	66.6
	Fecal coliform bacteria (trillions of cells)	<0.1	405.2	18.8	2.1	3,972.8	303.8
	Total nitrogen (pounds)	41.5	975.1	341.8	1,140.8	51,598.5	9,002.6
	Total phosphorus (pounds)	1.2	85.8	22.0	56.0	5,712.0	963.7
	Total suspended solids (pounds)	129.4	17,723.30	3,024.4	7,371.9	3,617,470.0	400,346.0
Milwaukee River at Pioneer Road	Biochemical Oxygen Demand (pounds)	79.0	12,492.6	2,420.4	611.6	45,103.2	19,972.7
	Copper (pounds)	2.3	27.8	11.1	19.3	472.7	74.5
	Fecal coliform bacteria (trillions of cells)	<0.1	356.4	9.1	1.6	675.8	128.0
	Total nitrogen (pounds)	717.6	10,547.0	4,091.9	6,390.0	49,025.7	22,339.8
	Total phosphorus (pounds)	9.4	874.5	207.6	126.1	5,819.6	1,644.1
	Total suspended solids (pounds)	927.7	148,118.0	20,240.7	10,692.2	2,174,690.0	415,419.0
Milwaukee River at Port Washington Road	Biochemical Oxygen Demand (pounds)	96.5	20,660.1	4,169.2	663.4	82,249.7	23,574.9
	Copper (pounds)	1.8	38.8	13.2	21.0	149.9	64.2
	Fecal coliform bacteria (trillions of cells)	<0.1	3,467.3	82.6	1.4	680.3	134.9
	Total nitrogen (pounds)	706.0	9,279.8	3,983.2	9,295.6	68,330.5	23,367.6
	Total phosphorus (pounds)	21.4	957.9	230.4	276.6	6,116.0	1,862.5
	Total suspended solids (pounds)	1,889.9	225,236.0	35,126.0	71,243.8	3,828,360.0	761,321.0

PRELIMINARY DRAFT

Table IV-13 (continued)

Sampling Station	Water Quality Parameter	Dry Weather			Wet Weather		
		Minimum	Maximum	Mean	Minimum	Maximum	Mean
Oak Creek at 15th Avenue	Biochemical Oxygen Demand (pounds)	2.3	385.1	60.0	14.0	15,147.9	3,079.4
	Copper (pounds)	0.2	9.5	2.4	1.8	151.5	46.7
	Fecal coliform bacteria (trillions of cells)	<0.1	4.6	0.3	<0.1	82.9	9.8
	Total nitrogen (pounds)	3.4	150.6	57.0	176.8	5,856.4	1,555.6
	Total phosphorus (pounds)	<0.1	8.6	2.9	7.0	1,013.4	164.5
	Total suspended solids (pounds)	19.9	3,117.5	552.1	1,823.0	824,193.0	17,205.5
Root River at W. Ryan Road	Biochemical Oxygen Demand (pounds)	3.8	830.6	83.4	442.3	16,638.7	4,417.3
	Copper (pounds)	0.1	1.3	0.5	1.7	41.6	13.3
	Fecal coliform bacteria (trillions of cells)	<0.1	25.8	1.2	0.3	176.9	35.8
	Total nitrogen (pounds)	7.2	574.8	113.8	521.8	8,371.3	2,809.7
	Total phosphorus (pounds)	0.5	35.6	5.9	36.8	494.0	155.8
	Total suspended solids (pounds)	58.9	10,204.7	1,418.2	11,499.1	727,918.0	122,046.0
Root River at Johnson Park	Biochemical Oxygen Demand (pounds)	_ _ ^b	_ _ ^b	_ _ ^b	_ _ ^b	_ _ ^b	_ _ ^b
	Copper (pounds)	<0.1	1.33	0.3	_ _ ^b	_ _ ^b	_ _ ^b
	Fecal coliform bacteria (trillions of cells)	<0.1	0.3	0.1	0.3	8.0	2.6
	Total nitrogen (pounds)	23.7	3,971.5	1,045.2	2,657.5	20,955.0	8,366.6
	Total phosphorus (pounds)	0.5	118.5	22.8	80.3	512.9	257.5
	Total suspended solids (pounds)	125.5	31,506.3	3,728.7	12,673.6	99,052.1	53,059.1

^aThe baseline period for the study was originally set as 1998-2001. During the course of the study, more recent data were incorporated into analyses as they became available. Thus, the period used for these assessments for the Menomonee River, Kinnickinnic River, and Oak Creek watersheds was 1998-2001. Because more recent data were available when the analyses were conducted, the period used for the Milwaukee River and Root River watersheds and the Lake Michigan direct drainage area was 1998-2004.

^bInsufficient data were available for calculating daily average pollutant load for this pollutant.

Source: U.S. Environmental Protection Agency, Wisconsin Department of Natural Resources, Milwaukee Metropolitan Sewerage District, City of Racine Health Department, and SEWRPC.

Exhibit B-1a

Table IX-1

PRINCIPAL FEATURES AND COSTS OF THE SCREENING ALTERNATIVES USED TO AID IN THE DEVELOPMENT OF THE WATER QUALITY MANAGEMENT PLAN ALTERNATIVES

Screening Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^d
Designation	Name	Description	Component					
1A	Elimination of SSOs and CSOs Using Sewer Separation	Assumes future year 2020 planned land use conditions ^c	Future baseline condition components ^d	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	--
		Includes all components of the future baseline condition alternative ^d	Sewer Separation	2,740,000	0	2,740,000	173,716	--
		Separate combined sewers in 89 percent of combined sewer service area	200 million gallons per day (MGD) additional treatment capacity at South Shore WWTP	193,000	3,700	300,090	19,026	--
		Additional conveyance, storage, and treatment (CST) measures for elimination of SSOs	100 MGD additional treatment capacity at Jones Island WWTP	124,000	2,300	184,849	11,719	--
			100 MGD additional pumping capacity from ISS to Jones Island	115,000	921	144,791	9,180	--
			234 million gallons (MG) additional storage in ISS	580,000	0	569,502	36,106	--
			MIS relief sewers at 42 locations	350,000	0	350,000	22,190	--
		Total Cost		\$5,136,624	\$ 74,966	\$6,407,940	\$406,289	
1B	Eliminate SSOs and CSOs Using Enhanced Treatment and Storage	Assumes future year 2020 planned land use conditions ^c	Future baseline condition components ^d	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	--
		Includes all components of the future baseline condition alternative ^d	200 MGD additional treatment capacity at South Shore WWTP	193,000	3,700	300,090	19,026	--
		Additional conveyance, storage, and treatment (CST) measures for elimination of SSOs and CSOs	100 MGD additional treatment capacity at Jones Island WWTP	124,000	2,300	184,849	11,719	--
			100 MGD additional pumping capacity from ISS to Jones Island	115,000	921	144,791	9,180	--
			1,622 MG additional storage in ISS	3,990,000	0	3,917,781	248,387	--
			MIS relief sewers at 42 locations	350,000	0	350,000	22,190	--
		Total Cost		\$5,806,624	\$ 74,966	\$7,016,219	\$444,854	

Table IX-1 (continued)

Screening Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Designation	Name	Description	Component					
1C	Eliminate SSOs Using Enhanced Treatment and Storage	Assumes future year 2020 planned land use conditions ^c	Future baseline condition components ^d	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	--
		Includes all components of the future baseline condition alternative ^d	200 MGD additional treatment capacity at South Shore WWTP	193,000	3,700	300,090	19,026	--
		Additional conveyance, storage, and treatment (CST) measures for elimination of SSOs only	100 MGD additional treatment capacity at Jones Island WWTP	124,000	2,300	184,849	11,719	--
		Provides some incidental CSO volume reduction benefits	100 MGD additional pumping capacity from ISS to Jones Island	115,000	921	144,791	9,180	--
			153 MG additional storage in ISS	400,000	0	392,760	24,901	--
			MIS relief sewers at 42 locations	350,000	0	350,000	22,190	--
			Total Cost	\$2,216,624	\$ 74,966	\$3,491,198	\$221,368	
1D	Eliminate SSOs through Infiltration and Inflow (I/I) Reduction	Assumes future year 2020 planned land use conditions ^c	Future baseline condition components ^d	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	--
		Includes all components of the future baseline condition alternative ^d	I/I reduction in 90 percent of separate sewer system area	6,670,000	0	6,670,000	422,878	--
		Reduce I/I within sanitary sewer system area (MMSD service area) so as to limit the five-year recurrence interval wastewater inflow rate to 2,000 gallons per acre per day						--
		Provides some incidental CSO volume reduction benefits						--
			Total Cost	\$7,704,624	\$ 68,045	\$8,788,708	\$577,230	
2	High Level of Implementation of BMPs to Control Nonpoint Source Pollution	Assumes future year 2020 planned land use conditions ^c	Future baseline condition components ^d	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	--
		Includes selected components of the future baseline condition alternative ^d	Rural nonpoint source measures:					
		Assumes full compliance with Chapter NR 151 rules for control of both urban and rural nonpoint source pollution	1. Manure management for all livestock operations	245,995	16,060	499,137	31,645	--
		Expanded level of nonpoint source pollution control beyond that required for Chapter NR 151, including expanded control of runoff volumes in urban areas	2. Fencing along 50 percent of pastures adjacent to waterways	330	16	590	37	--
	3. Expand buffers to 50 feet for all cropland and pasture adjacent to streams	1,654	368	7,425	471	X		

Table IX-1 (continued)

Screening Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b		
Designation	Name	Description	Component							
2 (continued)	Implement High Level of Stormwater BMPs (continued)		4. Expand level of septic system inspections	\$ 109,800	\$ 641	\$ 119,898	\$ 7,601	X		
			5. Fertilizer management education program	40	8	166	10	--		
			Additional urban nonpoint source measures in separate sewer areas:							
			1. Extend infiltration to include all existing institutional and commercial development and redeveloped well-drained institutional and commercial land. Provide enhanced infiltration for all new institutional, commercial, and residential development and for redeveloped, poorly-drained institutional and commercial development	107,037	5,215	230,104	14,589	X		
			2. Double implementation of end-of-pipe water quality treatment devices over levels assumed for NR 151 implementation	259,679	7,095	371,513	23,554	X		
			3. Downspout disconnection with rain barrels at 15 percent of homes in study area	38,207	723	49,601	3,145	--		
			4. Downspout disconnection with rain gardens at 15 percent of homes in study area. (different homes than Item 3)	97,967	3,711	156,458	9,919	--		
			5. Stormwater trees	--e	--e	--e	--e	--		
			6. Chloride reduction program modeled after programs in Cities of Brookfield and Madison (apply to 50 percent of roads, 25 percent of existing water softeners, 100 percent of new water softeners)	394	1,183	19,186	1,216	--		
			7. Pet litter management programs	--f	--f	--f	--f	X		
8. Waterfowl control programs for all Lake Michigan beaches	0	125	1,966	125	--					
9. Litter control programs	0	6,204	97,787	6,204	--					

Table IX-1 (continued)

Screening Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Designation	Name	Description	Component					
2 (continued)	Implement High Level of Stormwater BMPs (continued)	Urban nonpoint source measures in combined sewer service area:	1. Extend infiltration to all existing and redeveloped institutional and commercial land. Provide enhanced infiltration for all new industrial, commercial, and institutional development.	\$ 4,671	\$ 255	\$ 10,475	\$ 664	X
			2. Downspout disconnection with rain barrels at 15 percent of homes in study area.	10,618	201	13,784	874	--
			3. Downspout disconnection with rain gardens at 15 percent of homes in study area. (different homes than Item 2)	27,225	1,031	43,479	2,757	--
			4. Stormwater trees	--e	--e	--e	--e	--
			5. Rooftop storage equaling 14 MG to 50 percent of buildings from MMSD downspout disconnection study.	24,800	0	34,270	2,173	--
			6. Storm sewer inlet restrictors to provide 15 MG of street storage	32,500	650	42,745	2,710	--
			7. Sewer separation for seven parking lots identified in MMSD stormwater disconnection study	7,330	0	7,330	465	--
			8. Pet litter management programs	--f	--f	--f	--f	X
			9. Waterfowl control programs for all Lake Michigan beaches	--g	--g	--g	--g	--
			10. Litter control programs	--g	--g	--g	--g	--
			11. Skimmer boat operation within inner and outer harbor	1,000	150	3,364	213	--
		Total Cost	\$2,003,871	\$111,681	\$3,827,986	\$242,724		

Table IX-1 (continued)

^aCosts are based on an annual interest rate of 6 percent and a 50-year amortization period.

^bThe mechanism for implementing components that may require new or modified regulations or changes in enforcement would be established at the Federal, State, or local government levels. Many of those components might also be implemented voluntarily.

^cOriginal 2020 land use and population projections based on information provided by communities served by the MMSD and on the SEWRPC land use plan in areas outside the MMSD planning area. See Chapter VIII of this report for additional information.

^dComponents of the future baseline condition alternative are presented under Alternative A in Table IX-3.

^eIncluded in costs for downspout disconnection.

^fNo cost assigned. Assumed to be covered under cost of compliance with Chapter NR 151 rules.

^gIncluded above in cost for separate sewer area.

Source: Milwaukee Metropolitan Sewerage District, HNTB, and SEWRPC.

Table IX-3

PRINCIPAL FEATURES AND COSTS OF THE ALTERNATIVE WATER QUALITY MANAGEMENT PLANS

Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^d
Designation	Name	Description	Component					
A	Future Baseline Condition	Assumes future year 2020 planned land use conditions ^c	MMSD committed facilities ^d	\$ 842,000	\$ 0	\$ 842,000	\$ 53,383	--
		MMSD committed facilities as reflected in MMSD 2006 Capital Budget	Maintain current levels of I/I for MMSD and community sewer systems	0	36,493	575,198	36,493	--
		Implementation of <i>Wisconsin Administrative Code</i> Chapter NR 151 rules governing urban nonpoint source runoff and partial implementation of rules governing rural nonpoint source runoff	Rural nonpoint source measures: 1. Conservation tillage	0	0	0	0	--
		Implementation of MMSD Chapter 13 rules governing stormwater runoff volume from new development	Urban nonpoint source measures: 1. Infiltration systems	8,970	439	19,318	1,225	--
		Assumes increase in WWTP discharge based on future development while maintaining current effluent characteristics	2. Stormwater treatment systems	86,560	26,813	509,175	32,282	--
		Assumes current level of industrial source discharges ^e	3. Wet detention basins	75,767	3,788	135,479	8,589	--
		Assumes current level of pollutant loadings from POWTs	4. Vacuum sweeping of roadways	21,327	512	37,538	2,380	--
			Total Cost	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	
B1	Regulatory-Based	Assumes future year 2020 planned land use conditions ^c	Future baseline condition components	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	--
		Includes components of the future baseline condition alternative	185 MGD additional treatment capacity at South Shore WWTP	182,200	3,437	282,062	17,883	--
		Maintain current MMSD operating procedures to limit occurrence of CSOs and SSOs	100 MGD additional pumping capacity from ISS to Jones Island	115,000	921	144,791	9,180	--
		Additional conveyance, storage, and treatment (CST) measures to provide a five-year level of protection (LOP) for SSOs	40 MG additional storage in ISS	100,000	0	98,190	6,225	--
			Upgrade MIS conveyance capacity at identified hydraulic restrictions	115,000	0	115,000	7,291	--

Table IX-3 (continued)

Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Designation	Name	Description	Component					
B1 (continued)	Regulatory-Based (continued)	Additional stormwater volume controls for the combined sewer service area Full implementation of Chapter NR 151 urban and rural nonpoint source rules	Rural nonpoint source measures:					
			1. Manure management for all livestock operations	\$ 245,995	\$ 16,060	\$ 499,137	\$ 31,645	--
			2. Fencing along 50 percent of pastures adjacent to waterways	330	16	590	37	--
			3. Expand buffers to 50 feet for all cropland and pasture adjacent to streams	1,654	368	7,425	471	X
			4. Expand level of septic system inspections, and, if necessary, replacement	109,800	641	119,898	7,601	X
			5. Fertilizer management education program	40	8	166	10	--
			Urban nonpoint source measures in combined sewer service area:					
			1. Downspout disconnection with rain barrels at 15 percent of homes in study area	9,900	165	12,501	793	--
			2. Downspout disconnection with rain gardens at 15 percent of homes in study area. (different homes than Item 1)	27,225	1,031	43,479	2,757	--
			3. Rooftop storage equaling 14 MG to 50 percent of buildings from MMSD downspout disconnection study	24,800	0	34,270	2,173	--
			4. Storm sewer inlet restrictors to provide 15 MG of street storage	32,500	650	42,745	2,710	--
					Total Cost	\$1,999,068	\$ 91,342	\$3,518,962
B2	Regulatory-Based, with Revised ISS Operating Procedure ^f	Assumes future year 2020 planned land use conditions ^c	Future baseline condition components	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	--
		Includes components of the future baseline condition alternative	185 MGD additional treatment capacity at South Shore WWTP	182,200	3,437	282,062	17,883	--
		Revise MMSD operating procedures to provide zero reserve storage in ISS for SSO control, thereby maximizing use of available storage	100 MGD additional pumping capacity from ISS to Jones Island	115,000	921	144,791	9,180	--
		Additional conveyance, storage, and treatment (CST) measures to provide a five-year level of protection (LOP) for SSOs	40 MG additional storage in ISS	100,000	0	98,190	6,225	--
			Upgrade MIS conveyance capacity at identified hydraulic restrictions	115,000	0	115,000	7,291	--

Table IX-3 (continued)

Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Designation	Name	Description	Component					
B2 (continued)	Regulatory-Based, with Revised ISS Operating Procedure ^f (continued)	Additional stormwater volume controls for the combined sewer service area Full implementation of Chapter NR 151 urban and rural nonpoint source rules	Rural nonpoint source measures:					
			1. Manure management for all livestock operations	\$ 245,995	\$ 16,060	\$ 499,137	\$ 31,645	--
			2. Fencing along 50 percent of pastures adjacent to waterways	330	16	590	37	--
			3. Expand buffers to 50 feet for all cropland and pasture adjacent to streams	1,654	368	7,425	471	X
			4. Expand level of septic system inspections, and, if necessary, replacement	109,800	641	119,898	7,601	X
			5. Fertilizer management education program	40	8	166	10	--
			Urban nonpoint source measures in combined sewer service area:					
			1. Downspout disconnection with rain barrels at 15 percent of homes in study area	9,900	165	12,501	793	--
			2. Downspout disconnection with rain gardens at 15 percent of homes in study area. (different homes than Item 1)	27,225	1,031	43,479	2,757	--
			3. Rooftop storage equaling 14 MG to 50 percent of buildings from MMSD downspout disconnection study	24,800	0	34,270	2,173	--
			4. Storm sewer inlet restrictors to provide 15 MG of street storage	32,500	650	42,745	2,710	--
		Total Cost	\$1,999,068	\$ 91,342	\$3,518,962	\$223,128		
C1	Water Quality-Based	Assumes future year 2020 planned land use conditions ^c Includes components of the future baseline condition alternative Maintain current MMSD operating procedures to limit occurrence of CSOs and SSOs Expanded level of nonpoint source pollutant control beyond that required for Chapter NR 151, including expanded control of runoff volumes in urban areas	Future baseline condition components Rural nonpoint source measures:	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	--
			1. Manure management for all livestock operations	245,995	16,060	499,137	31,645	--
			2. Fencing along 50 percent of pastures adjacent to waterways	330	16	590	37	--
			3. Expand buffers to 50 feet for all cropland and pasture adjacent to streams	1,654	368	7,425	471	X

Table IX-3 (continued)

Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b		
Designation	Name	Description	Component							
C1 (continued)	Water Quality-Based (continued)		4. Expand level of septic system inspections	\$ 109,800	\$ 641	\$ 119,898	\$ 7,601	X		
			5. Fertilizer management education program	40	8	166	10	--		
			Urban nonpoint source measures in separate sewer areas:							
			1. Extend infiltration to include all existing institutional and commercial development. Provide enhanced infiltration for all redeveloped institutional and commercial development and all new residential development	57,725	2,826	124,320	7,882	X		
			2. Double implementation of end-of-pipe water quality treatment devices over levels assumed for NR 151 implementation (100 percent of parking lots)	259,679	7,095	371,513	23,554	X		
			3. Targeted stormwater disinfection (high rate chlorination (bleach) and dechlorination units at storm sewer outfalls)	616,941	7,652	926,011	58,709	X		
			4. Downspout disconnection with rain barrels at 15 percent of homes in study area	35,625	594	44,983	2,852	--		
			5. Downspout disconnection with rain gardens at 15 percent of homes in study area. (different homes than Item 4)	97,967	3,711	156,458	9,919	--		
			6. Chloride reduction program modeled after Madison and Brookfield programs. (apply to 25 percent of roads, 25 percent of existing water softeners, 100 percent of new water softeners)	394	1,183	19,186	1,216	--		
			7. Pet litter management programs	--9	--9	--9	--9	X		
8. Waterfowl control programs for all Lake Michigan beaches	0	125	1,966	125	--					
9. Litter control programs	0	6,204	97,787	6,204	--					

Table IX-3 (continued)

Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Designation	Name	Description	Component					
C1 (continued)	Water Quality-Based (continued)		Urban nonpoint source measures in combined sewer service area:					
			1. Provide enhanced infiltration for new well-drained industrial, commercial, and institutional development	\$ 400	\$ 20	\$ 861	\$ 55	X
			2. Downspout disconnection with rain barrels at 15 percent of homes in study area	9,900	165	12,501	793	--
			3. Downspout disconnection with rain gardens at 15 percent of homes in study area. (different homes than Item 2)	27,225	1,031	43,479	2,757	--
			4. Sewer separation for seven parking lots identified in MMSD stormwater disconnection study	7,330	0	7,330	465	--
			5. Stormwater trees	--h	--h	--h	--h	--
			6. Rooftop storage equaling 14 MG to 50 percent of buildings from MMSD downspout disconnection study	24,800	0	34,270	2,173	--
			7. Storm sewer inlet restrictors to provide 15 MG of street storage	32,500	650	42,745	2,710	--
			8. Pet litter management programs	--g	--g	--g	--g	X
			9. Waterfowl control programs for all Lake Michigan beaches	--i	--i	--i	--i	--
			10. Litter control programs	--j	--j	--j	--j	--
			11. Skimmer boat operation within inner and outer harbor	1,000	150	3,364	213	--
			Total Cost	\$2,563,929	\$116,544	\$4,632,698	\$293,743	
C2	Water Quality-Based, with Green Measures	Assumes future year 2020 planned land use conditions ^c	Future baseline condition components	\$1,034,624	\$ 68,045	\$2,118,708	\$134,352	--
		Includes components of the future baseline condition alternative	Rural nonpoint source measures:					
		Maintain current MMSD operating procedures to limit occurrence of CSOs and SSOs	1. Manure management for all livestock operations	245,995	16,060	499,137	31,645	--
		Expanded level of nonpoint source pollutant control beyond that required for Chapter NR 151, including expanded control of runoff volumes in urban areas	2. Fencing along 50 percent of pastures adjacent to waterways	330	16	590	37	--

Table IX-3 (continued)

Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b			
Designation	Name	Description	Component								
C2	Water Quality-Based, with Green Measures (continued)	Incorporate "green" best management practices	3. Expand buffers to 50 feet for all cropland and pasture adjacent to streams	\$ 1,654	\$ 368	\$ 7,425	\$ 471	X			
			4. Expand level of septic system inspections	109,800	641	119,898	7,601	X			
			5. Fertilizer management education program	40	8	166	10	--			
			6. Convert 5 percent of existing cropland and pasture to wetland (target less productive lands)	104,454	10,443	267,159	16,938	--			
			7. Convert 5 percent of existing cropland and pasture to prairie vegetation (target less productive lands)	23,331	6,957	132,568	8,405	--			
			Urban nonpoint source measures in separate sewer areas:								
			1. Extend infiltration to include all existing institutional and commercial development. Provide enhanced infiltration for all redeveloped institutional and commercial development and all new residential development	57,725	2,826	124,320	7,882	X			
			2. Double implementation of end-of-pipe water quality treatment devices over levels assumed for NR 151 implementation (100 percent of parking lots)	259,679	7,095	371,513	23,554	X			
			3. Targeted stormwater disinfection (ultraviolet light treatment units at storm sewer outfalls)	152,100	6,868	306,814	19,452	X			
			4. Downspout disconnection with rain barrels at 15 percent of homes in study area	35,625	594	44,983	2,852	--			
			5. Downspout disconnection with rain gardens at 15 percent of homes in study area. (different homes than Item 4)	97,967	3,711	156,458	9,919	--			
			6. Chloride reduction program modeled after Madison and Brookfield programs. (apply to 25 percent of roads, 25 percent of existing water softeners, 100 percent of new water softeners)	394	1,183	19,186	1,216	--			

Table IX-3 (continued)

Alternative				Capital Cost (thousands)	Annual Operation and Maintenance Cost (thousands)	Present Worth Cost ^a (thousands)	Equivalent Annual Cost ^a (thousands)	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b		
Designation	Name	Description	Component							
C2 (continued)	Water Quality-Based, with Green Measures (continued)		7. Pet litter management programs	- -g	- -g	- -g	- -g	X		
			8. Waterfowl control programs for all Lake Michigan beaches	\$ 0	\$ 125	\$ 1,966	\$ 125	--		
			9. Litter control programs	0	6,204	97,787	6,204	--		
			10. LEED development for 50 percent of new commercial and industrial development in areas with suitable soils	- j	- j	- j	- j	--		
			Urban nonpoint source measures in combined sewer service area:							
			1. Provide enhanced infiltration for new well-drained industrial, commercial, and institutional development	400	20	861	55	X		
			2. Downspout disconnection with rain barrels at 15 percent of homes in study area	9,900	165	12,501	793	--		
			3. Downspout disconnection with rain gardens at 15 percent of homes in study area. (different homes than Item 2)	27,225	1,031	43,479	2,757	--		
			4. Sewer separation for seven parking lots identified in MMSD stormwater disconnection study	7,330	0	7,330	465	--		
			5. Stormwater trees	- h	- h	- h	- h	--		
			6. Rooftop storage equaling 14 MG to 50 percent of buildings from MMSD downspout disconnection study	24,800	0	34,270	2,173	--		
			7. Storm sewer inlet restrictors to provide 15 MG of street storage	32,500	650	42,745	2,710	--		
			8. Pet litter management programs	- g	- g	- g	- g	X		
			9. Waterfowl control programs for all Lake Michigan beaches	- i	- i	- i	- i	--		
			10. Litter control programs	- i	- i	- i	- i	--		
11. Skimmer boat operation within inner and outer harbor	1,000	150	3,364	213	--					
			Total Cost	\$2,226,873	\$133,160	\$4,413,228	\$279,829			

Table IX-3 Footnotes

^aCosts are based on an annual interest rate of 6 percent and a 50-year amortization period.

^bThe mechanism for implementing components that may require new or modified regulations or changes in enforcement would be established at the Federal, State, or local government levels. Many of those components might also be implemented voluntarily.

^cOriginal 2020 land use and population projections based on information provided by communities served by the MMSD and on the SEWRPC land use plan in areas outside the MMSD planning area. See Chapter VIII of this report for additional information.

^dIncludes facilities as reported in MMSD 2006 Capital Budget. The facilities and costs are for a six-year period, beginning in 2006, as reflected in the six-year capital improvements program. Capital costs account for inflation over six-year period. No operation and maintenance costs were provided in the budget report.

^eDoes not include discharge from LeSaffre Yeast plant in City of Milwaukee. That plant closed in 2005.

^fImplementation of this alternative plan would require a change in Federal law with regard to sanitary sewer overflows.

^gNo costs assigned. Assumed to be covered under cost of compliance with Chapter NR 151 rules.

^hIncluded in costs for downspout disconnection.

ⁱIncluded above in cost for separate sewer area.

^jNo cost assigned. Assumed higher initial capital costs compensated for in long-term energy savings.

Source: Milwaukee Metropolitan Sewerage District, HNTB, and SEWRPC.

Table X-2

COMPONENTS OF THE RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS

Plan Element	Plan Subelement	Description	Component	Capital Cost (thousands) ^a	Annual Operation and Maintenance Cost (thousands) ^a	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Land Use Plan Element ^c	Population and Land Use Subelement	--	1. Develop water quality plan components on the basis of planned year 2020 population and land use estimates	--	--	--
	Environmentally Significant Lands Subelement	Recommendations Regarding Environmentally Significant Lands	1. Maintain primary environmental corridors in essentially natural, open uses	--	--	--
			2. Consider maintaining secondary environmental corridors and isolated natural resource areas in essentially natural, open uses	--	--	--
			3. Preserve all identified natural areas and critical species habitat sites	--	--	--
			4. Acquire identified natural areas and critical species habitat sites not in existing public or public-interest ownership	--	--	--
	Highly Productive Agricultural Land Subelement	--	1. Preserve to the extent practicable farmland covered by agricultural capacity Class I and Class II soils as classified by the U.S. Natural Resources Conservation Service	--	--	--
	Subtotal		--	--		
Surface Water Quality Plan Element	Point Source Pollution Abatement Plan Subelement	Public Wastewater Treatment Plants and Associated Sewer Service Areas	1. Refine sanitary sewer service areas for the MMSD, City of South Milwaukee, Villages of Adell, Campbellsport, Cascade, Lomira, and Random Lake, and Town of Yorkville Sanitary District No. 1	--	--	--
			2. Continue assessment of sewage conveyance and treatment systems for communities outside of the MMSD planning area	-- ^d	-- ^d	--
			3. Implementation of the Village of Kewaskum WWTP Facilities Plan	\$3,440	\$97	--
			4. Prepare facilities plans for the Villages of Jackson and Newburg	\$200	--	--

Table X-2 (continued)

Plan Element	Plan Subelement	Description	Component	Capital Cost (thousands) ^a	Annual Operation and Maintenance Cost (thousands) ^a	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Surface Water Quality Plan Element (continued)	Point Source Pollution Abatement Plan Subelement (continued)	Public Wastewater Treatment Plants and Associated Sewer Service Areas (continued)	5. Prepare facilities plans for the City of Cedarburg and Village of Grafton, including consideration of merging operations into a single, regional treatment facility	\$175	--	--
			6. Prepare facilities plan for City of Racine and environs upon completion of amendment to sewer service area	\$250	--	--
			7. Capacity, Management, Operations, and Maintenance (CMOM) programs for municipalities outside of the MMSD service area	\$1,425	--	--
			8. City of West Bend Northwest Interceptor	\$4,091	\$3	--
			9. Force main from Waubeka in the Town of Fredonia to the Village of Fredonia sewerage system	\$1,549	\$11	--
			10. Ryan Creek interceptor sewer	\$51,386	\$70	--
			11. Implementation of MMSD 2020 Facilities Plan as Recommended under the RWQMPE	\$954,900 ^f	\$9009	X
			12. Implementation of wastewater treatment plant upgrades for City of South Milwaukee	\$4,298	\$575 ^g	--
		Private Wastewater Treatment Facilities	1. Continue operation of the private treatment facilities at Long Lake Recreational Area, Kettle Moraine Correctional Institute, and Fonks Mobile Home Park	-- ^h	-- ^h	--
		Regulation of Wastewater Treatment Facilities and Industrial Discharges	1. Continue regulation of discharges through the WPDES permitting program	--	--	--
			2. Consider change in method of applying corrosion control in municipal water treatment systems to limit phosphorus loading	--	--	--

Table X-2 (continued)

Plan Element	Plan Subelement	Description	Component	Capital Cost (thousands) ^a	Annual Operation and Maintenance Cost (thousands) ^a	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Surface Water Quality Plan Element (continued)	Nonpoint Source Pollution Abatement Plan Subelement	Recommended Rural Nonpoint Source Pollution Control Measures	1. Reduce soil erosion from cropland	--i	--i	--
			2. Provide six months of manure storage for livestock operations	\$47,050	\$3,072	X
			3. Prepare and/or implement nutrient management plans	\$1,526	\$1,308	--
			4. As required by WPDES permit, all CAFOs to follow a nutrient management plan	--j	--j	--
			5. Control barnyard runoff	\$2,280	--	--
			6. Expand riparian buffers	\$1,747	\$389	X
			7. Convert marginal cropland and pasture to wetlands and prairies	\$72,253	\$16,250	--
			8. Restrict livestock access to streams	\$969	\$48	--
			9. Manage milking center wastewater	\$3,799	\$83	X
			10. Expand oversight and maintenance of private onsite wastewater treatment systems (POWTS)	\$113,660	\$663	X
		Recommended Urban Nonpoint Source Pollution Control Measures	1. Implementation of the nonagricultural (urban) performance standards of Chapter NR 151	--k	--k	--
			2. Programs to detect and eliminate illicit discharges and control pathogens that are harmful to human health	\$19,524 ^l	--	X
			3. Chloride reduction programs	\$499	\$1,496	--
			4. Implement fertilizer management programs	\$160	--	X
			5. Disconnect residential roof drains from sanitary and combined sewers and infiltrate roof runoff	\$22,171	\$350	X
			6. Manage pet litter	--m	--m	X
			7. Beach and riparian litter and debris control	--	\$596	--
			8. Marina waste management facilities	--	--	--
			9. Research and implementation projects	--n	--n	--

Table X-2 (continued)

Plan Element	Plan Subelement	Description	Component	Capital Cost (thousands) ^a	Annual Operation and Maintenance Cost (thousands) ^a	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Surface Water Quality Plan Element (continued)	Instream Water Quality Measures Plan Subelement	Hydrologic and Hydraulic Management	1. Concrete channel renovation and rehabilitation	\$175,200	--	--
			2. Renovation of the MMSD Kinnickinnic River flushing station	\$3,400	\$600	--
			3. Dam abandonment and restoration plans	\$1,800	--	X
			4. Limit number of culverts, bridges, drop structures, and channelized stream segments and incorporate design measures to allow for passage of aquatic life	--	--	--
			5. Remove abandoned bridges and culverts	--d	--d	--
		Restoration and Remediation Programs	1. Manage contaminated sediment sites	--d	--d	--
			2. Extend Milwaukee Harbor Estuary Area of Concern to include contaminated portions of Cedar Creek in Cedarburg and Little Menomonee River in Milwaukee	--	--	--
			3. Continue implementation and support of the Milwaukee Estuary Remedial Action Plan	--	--	--
			4. Continue navigational dredging in the inner and outer harbors	--h	--h	--
			5. Increase the dredged material storage volume of the Jones Island Confined Disposal Facility	\$3,500	\$12	--
		Fisheries Protection and Enhancement	1. To the extent practicable, protect remaining natural stream channels including small tributaries and shoreland wetlands	--d	--d	X
			2. Restore wetlands, woodlands, and grasslands adjacent to the stream channels and establish riparian buffers	--j	--j	X
			3. Restore, enhance, and rehabilitate stream channels to provide increased water quality and quantity of available fisheries habitat	--d	--d	--

Table X-2 (continued)

Plan Element	Plan Subelement	Description	Component	Capital Cost (thousands) ^a	Annual Operation and Maintenance Cost (thousands) ^a	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Surface Water Quality Plan Element (continued)	Instream Water Quality Measures Plan Subelement (continued)	Fisheries Protection and Enhancement (continued)	4. Monitor fish and macroinvertebrate populations	--j	--j	--
			5. Consider more intensive fisheries manipulation measures where warranted	--d	--d	--
	Inland Lakes Water Quality Measures Plan Subelement		1. Lake management plans for 17 major lakes	\$850	--	--
			2. Implement trophic state monitoring programs for 20 major lakes	--	\$120	--
			3. Milwaukee County pond and lagoon management plan implementation	--	--	--
	Auxiliary Water Quality Management Plan Subelement	Public Beaches	1. Continue current public health monitoring programs and expand to all public beaches in the study area	--	\$31	--
			2. Evaluate beaches with high frequencies of closings for local sources of contamination and remediate	--d	--d	--
			3. Continue and expand current beach grooming programs	--	\$710	--
		Waterfowl Control	1. Implement programs to discourage unacceptably high numbers of waterfowl from congregating near beaches and other water features	--	\$165	--
		Coastal Zone Management	1. Continue implementation and refinement of the Lake Michigan Lakewide Management Plan	--	--	--
			2. Maintain liaison and linkage between local, State, and Federal Great Lakes programs	--	--	--
			3. Coordinate shipping and harbor management programs and activities with environmental management programs and activities	--	--	X
		Water Pollution Control	1. Continue collection programs for household hazardous wastes and expand such programs to communities that currently do not have them	--	\$374	--

Table X-2 (continued)

Plan Element	Plan Subelement	Description	Component	Capital Cost (thousands) ^a	Annual Operation and Maintenance Cost (thousands) ^a	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Surface Water Quality Plan Element (continued)	Auxiliary Water Quality Management Plan Subelement (continued)	Emerging Issues	1. Conduct assessments and evaluations of the significance for human health and aquatic and terrestrial wildlife of the presence of pharmaceuticals and personal care products in surface waters	- .d	- .d	--
			2. Implement collection programs for expired and unused household pharmaceuticals	--	\$40	--
			3. Continue and support programs to reduce the spread of exotic invasive species, including public education programs	--	--	X
		Water Quality Monitoring	1. Continue and possibly expand current MMSD, WDNR, and USGS water quality monitoring programs, including Phases II and III of the MMSD corridor study	--	--	--
			2. Continue and possibly expand USGS stream gauging program	\$145	\$126	--
			3. Establish long-term water quality monitoring programs for areas outside of MMSD service area	--	\$156	--
			4. Establish long-term fisheries and macroinvertebrate monitoring stations	--	\$100	--
			5. Establish long-term aquatic habitat monitoring stations	--	\$59	--
			6. Conduct aquatic plant surveys for areas where plant management measures are being implemented	- .d	- .d	--
			7. Monitor exotic and invasive species	- .d	- .d	--
			8. Continue citizen-based monitoring efforts	--	--	--

Table X-2 (continued)

Plan Element	Plan Subelement	Description	Component	Capital Cost (thousands) ^a	Annual Operation and Maintenance Cost (thousands) ^a	Implementation of Component May Require New or Modified Regulations or Changes in Enforcement ^b
Surface Water Quality Plan Element (continued)	Auxiliary Water Quality Management Plan Subelement (continued)	Maintenance of the Regional Water MMSD 2020 Facilities Plan Modeling System	1. Continue maintenance of MMSD conveyance system modeling tools	--	\$15	--
			2. Continue maintenance of watershed-wide riverine water quality models (LSPC) and Milwaukee Harbor estuary/nearshore Lake Michigan hydrodynamic (ECOMSED) and water quality (RCA) models	--	\$15	--
		Subtotal		\$1,492,248	\$28,435	
Groundwater Management Plan Element	Plan Recommendations Related to Groundwater	Groundwater Recharge Areas	1. Extend groundwater recharge area mapping to those portions of the study area located outside of the Southeastern Wisconsin Region	\$25	--	--
			2. Follow recommendations of the regional water supply plan regarding maintenance of groundwater recharge areas	-- ^o	-- ^o	X
		Groundwater Sustainability	1. Utilize groundwater sustainability guidance results in evaluating the sustainability of proposed developments and in conduct of local land use planning	-- ^d	-- ^d	X
		Mapping Groundwater Contamination Potential	1. Extend mapping of groundwater contamination potential for shallow aquifers to those portions of the study area located outside of the Southeastern Wisconsin Region	\$25	--	--
		Stormwater Management Measures Affecting Groundwater Quality	1. Design of stormwater management facilities that directly or indirectly involve infiltration to consider the potential impacts on groundwater quality	--	--	--
		Groundwater Issues Related to Disposal of Emergency and Unregulated Contaminants	1. Reduce disposal of pharmaceuticals and personal care products in onsite waste disposal systems through expanding household waste collection programs	--	--	--
		Water Conservation	1. Utility- or community-specific water conservation programs	--	--	X
		Subtotal		\$50	--	
		--	--	Total		\$1,492,298

Table X-2 (continued)

^aCosts represent 2007 conditions. 2007 Engineering New-Record Construction Cost Index = 10,000. In general, where not qualified by another footnote, double dashes indicate that either it is not appropriate to assign a cost to a component, a cost is already incurred under another program or plan, or it is not possible to reasonably estimate the cost of a component because it is affected by future actions whose scope cannot be determined at this time.

^bThe mechanism for implementing components that may require new or modified regulations or changes in enforcement would be established at the Federal, State, or local government levels. Many of those components might also be implemented voluntarily.

^cThe costs associated with implementation of the components of the regional land use plan that are incorporated in this plan are determined by many different, variable factors, such as fluctuations in the real estate market and changing Federal and State programs, making realistic estimation of those costs highly speculative. Thus, the overall costs of implementing a regional land use plan element are traditionally not estimated.

^dCase- or project-specific.

^eA detailed breakdown of the MMSD 2020 Facilities Plan components and associated costs is presented in Tables X-3 and X-3a. The costs presented here reflect only those shown in Table X-3 which represent proposed new facilities, programs, operational improvements, and policies, including an estimated \$400 million for management of sanitary sewer infiltration and inflow by the MMSD member and contract communities and Milwaukee County. The total capital cost presented under this item is \$152 million less than the total in Table X-3, and the total annual operation and maintenance cost is \$1.7 million less than the amount in Table X-3. Those differences reflect the regional water quality management plan update recommendation that the addition of physical-chemical treatment at the MMSD South Shore wastewater treatment plant not be implemented, pending 1) further development by MMSD of the variable volume reserved for sanitary sewer inflow operating strategy for the Inline Storage System, 2) the results of capacity analyses for the Jones Island and South Shore plants, 3) determination of actual population and land use changes, and 4) determination of the success of the wet weather peak flow management program undertaken by MMSD and the communities that it serves.

^fThis cost includes \$46.8 million for installation of a 48-inch-diameter sewer for the Ryan Road MIS relief sewer to convey anticipated sewage flows under original 2020 baseline conditions. The cost could be up to \$17.1 million more if a 72-inch-diameter relief sewer were required to convey anticipated flows under buildout conditions. The determination of which size sewer to install will be made at a future date when growth trends are reviewed.

^gIncremental cost.

^hNo cost assigned to this component since no new measures are recommended that would affect current facilities or operating costs.

ⁱNo cost assigned to this component. Assumed nutrient management plan include measures to control soil loss.

^jCosts are already included as part of other plan elements.

^kNo costs have been assigned to the regional water quality management plan update as these measures are already mandated by State code. Estimated costs of carrying out these measures within the study area are presented in Table X-5.

^lCost only reflects program to detect locations of illicit discharges. Costs of elimination are case specific and therefore not included here.

^mPrograms assumed to be self-supporting through collection of fines.

ⁿThese projects are ongoing with committed costs and thus no additional cost is assigned to the regional water quality management plan update. The cost of these projects is presented in Table X-5 for informational purposes.

^oCertain groundwater management plan costs are assigned to the regional water supply plan and, thus, no costs are assigned under the regional water quality management plan update.

Source: SEWRPC.

Exhibit B-2

Table X-3

**COMPONENTS OF THE MILWAUKEE METROPOLITAN SEWERAGE DISTRICT 2020 FACILITIES PLAN
NEW FACILITIES, PROGRAMS, OPERATIONS, AND POLICIES TO BE IMPLEMENTED**

Plan Element	Component	Capital Cost (thousands) ^a	Annual Operation and Maintenance Cost ^a (thousands)
Wet Weather Control Plan: Facilities	1. Perform Capacity Analysis of South Shore WWTP	-- ^b	--
	2. Increase ISS Pump Station Capacity to Jones Island WWTP to 180 MGD	\$108,000	\$900
	3. Increase South Shore WWTP Treatment Capacity with Physical-Chemical Treatment Methods	\$97,000-\$152,000 ^c	\$1,400-\$1,700 ^c
	4. Improvements to MMSD Flow Monitoring and Rain Gauge System	\$25,000-\$37,000	--
	5. Add MIS Capacity as Necessary		
	– N. 91st Street	\$5,900	--
	– Milwaukee River	18,100	--
	– Range Line Road	1,100	--
	– River Hills	500	--
	– Green Bay Avenue and Mill Road	16,000	--
– Menomonee River	1,300	--	
– S. 81st Street	3,500	--	
– S. Howell Avenue	8,300	--	
– W. Ryan Road	46,800 ^d	--	
– Franklin-Muskego Force Main (Ryan Creek interceptor)	-- ^e	--	
– Real Time Control Strategy Improvements	400	--	
Total of MIS Capacity Projects	\$0-\$101,900 ^f	--	
Subtotal	\$230,000-\$398,900	\$2,300-\$2,600	
Wet Weather Control Plan: Programs, Operational Improvements and Policies	1. Evaluate Need for Control System Refinements at S. 6th Street and W. Oklahoma Avenue Drop Structure	-- ^g	-- ^g
	Subtotal	--	--
Plan for Existing Milwaukee Metropolitan Sewerage District Facilities	1. Rehabilitate Dewatering and Drying at Jones Island WWTP	-- ^h	--
	2. Additional Force Main	\$0-\$23,000 ⁱ	--
	3. Evaluation of Jones Island WWTP Aeration System	\$0-\$15,000 ^j	-- ^j
	Subtotal	\$0-\$38,000	--
Interim Biosolids Management Plan	1. Maintenance of Jones Island Dewatering and Drying Facility	\$115,000	--
	2. New Biosolids/Energy System	20,000	--
	3. Interplant Solids Pumping and Pipeline Improvements	3,000	--
	4. New Gravity Belt Thickeners for South Shore Waste Sludge Thickening	7,700	--
	5. Three new two-meter gravity belt thickeners	2,225	--
	6. South Shore Digester Rehabilitation	117,000	--
	7. Maximize Operation of Primary Clarifiers	--	--
	8. Upgrade and Maintain South Shore Plate and Frame Presses	5,000	--
	9. Overall Planning Report on Energy and Energy Management	300	--
	10. Marketing Study for Lower Percent Nitrogen Milorganite®	--	--
	11. Evaluation of Milorganite® Nitrogen Balance	--	--
Subtotal	\$270,000 ^k	--	

Table X-2 (continued)

Plan Element	Component	Capital Cost (thousands) ^a	Annual Operation and Maintenance Cost ^a (thousands)
New Milwaukee Metropolitan Sewerage District Programs and Policies	1. Watershed Approach Implementation Tactics	--	--
	2. Policies to Support RWQMPS	--	--
	3. MMSD Chapter 13 Revisions	--	--
	4. Sewer Separation	--	--
	5. Educational Outreach Program	--	--
	Subtotal	--	--
Community-Based Components of the Recommended Plan ^l	1. I/I Management- Communities Hold I/I at 2020 FP Assumptions	\$400,000	--
	Subtotal	\$400,000	--
--	Total	\$900,000- \$1,106,900	\$2,300-\$2,600

^aCosts reflect projected June 2007 dollars. Engineering News Record Construction Cost Index (CCI) = 10,000. In general, where not qualified by another footnote, double dashes indicate that either it is not appropriate to assign a cost to a component, a cost is already incurred under another program or plan, or a cost was not provided in the MMSD 2020 facilities plan.

^bNo capital cost was assigned in the 2020 Facilities Plan. A cost of \$0.3 million was assigned to cover preliminary engineering.

^cThe 2020 Facilities Plan also included a cost estimate of \$1.5 million to conduct a pilot project to determine the feasibility of this technology. The capital and annual operation and maintenance costs listed in this table are not included in Table X-2, which sets forth the costs for the recommended regional water quality management plan update. That recommendation calls for possibly avoiding the addition of physical-chemical treatment at the MMSD South Shore wastewater treatment plant, pending 1) further development by MMSD of the variable volume reserved for sanitary sewer inflow operating strategy for the Inline Storage System, 2) the results of capacity analyses for the Jones Island and South Shore plants, 3) determination of actual population and land use changes, and 4) determination of the success of the wet weather peak flow management program undertaken by MMSD and the communities that it serves.

^dThis cost reflects installation of a 48-inch-diameter sewer for the Ryan Road MLS relief sewer to convey anticipated sewage flows under original 2020 baseline conditions. The cost could be up to \$17.1 million more if a 72-inch-diameter relief sewer were required to convey anticipated flows under buildout conditions. The determination of which size sewer to install will be made at a future date when growth trends are reviewed.

^eThe Ryan Creek interceptor costs for the MMSD and affected communities are set forth in Table X-2.

^fThe need for these upgrades will be evaluated over time based on flow monitoring and assessments of growth in population and land use. There would be no cost if it were found that none of the upgrades was required.

^gCost was not determined for this component under the facilities plan, but was expected to be minimal, and, therefore, could be included in ongoing annual budget.

^hCost of this component is included under the Interim Biosolids Management Plan element.

ⁱThe 2020 Facilities Plan also included a cost estimate of \$0.3 million to cover preliminary engineering.

^jA potential savings of \$1.0 million per year in operation and maintenance costs could possibly be achieved if aeration system energy costs can be reduced.

^kRounded.

^lThe MMSD 2020 Facilities Plan also included costs for compliance with the urban performance standards in Chapter NR 151. These costs have not been assigned to the regional water quality management plan update, but are identified separately in Table X-4.

Source: Milwaukee Metropolitan Sewerage District and SEWRPC.

Exhibit B-3

Compliance with Adopted Water Quality Standards

For purposes of assessing compliance with water quality standards under this regional water quality management plan update, it was assumed that a stream reach would meet the water quality standard and attain its designated use objective if the modeled water quality results indicate compliance with the standard at least 85 percent of the time.

The data on compliance with standards as set forth in Tables M-1 through M-6 are summarized in Figures X-1 through X-6a. For a given pollutant and standard, a pair of figures indicate the degree of compliance with applicable standards among the existing, revised 2020 baseline, recommended plan, and extreme measures conditions for each watershed in the study area, the Milwaukee harbor estuary, the outer harbor, and the nearshore Lake Michigan area. The first figure in each pair presents a set of three graphical comparisons. These comparisons consist of:

- The percent of assessment points achieving or exceeding 85 percent compliance with the standard over the 10-year water quality simulation period,
- The percent of assessment points achieving or exceeding 70 to 84 percent compliance with the standard over the 10-year simulation period, and
- The percent of assessment points achieving less than 70 percent compliance with the standard over the 10-year simulation period.

Thus, for the four conditions represented, these graphs facilitate determination of the degree to which 1) a water quality standard is complied with in a given watershed (defined as compliance 85 percent of the time or greater), 2) a standard is close to being complied with (compliance 70 to 84 percent of the time), and 3) a standard is unlikely to be complied with (compliance less than 70 percent of the time). The second figure in each pair presents a pair of graphical comparisons of cumulative levels of compliance for each of the conditions indicated above. The two graphical comparisons consist of:

- The percent of assessment points achieving or exceeding 85 percent compliance with the standard over the 10-year water quality simulation period.
- The percent of assessment points achieving or exceeding 70 percent compliance with the standard over the 10-year water quality simulation period.

The assessments in Figures X-1 through X-6a are evaluated below.

- **Figures X-1 and X-1a: Achievement of the Single Sample Fecal Coliform Bacteria Standard Assessed on an Annual Basis**

Compliance with this standard 85 percent of the time would not be expected under existing, revised 2020 baseline, or recommended plan conditions at the assessment points in the Kinnickinnic River, Menomonee River, Oak Creek, or Root River watersheds. In the Kinnickinnic River watershed, 30 percent or less of the assessment points would be expected to achieve compliance 85 percent of the time under the extreme measures condition. In the Menomonee River, Oak Creek and Root River watersheds, none of the assessment points would be expected to achieve 85 percent compliance even under the extreme measures condition. In the Milwaukee River watershed less than 10 percent of the assessment points would be expected to achieve 85 percent compliance, or better, under all four conditions.

In the Milwaukee outer harbor and nearshore Lake Michigan area, compliance with standards was evaluated through comparison of modeled water quality results with the standards for the fish and aquatic life water use objective with full recreational use. In the Harbor estuary, compliance with the

standard would be expected 85 percent of the time or more at more than 80 percent of the assessment points under the revised 2020 baseline, recommended plan, and extreme measures conditions. In the Outer harbor and nearshore Lake Michigan area compliance with the standard would be expected at all locations all of the time.

Substantial proportions of the total numbers of assessment points in the Kinnickinnic and Menomonee River watersheds, and to a lesser degree the Root River watershed, would be expected to achieve compliance in the 70 to 84 percent range. Large proportions of the total numbers of assessment points in the Milwaukee River, Oak Creek, and Root River watersheds, would be expected to achieve compliance less than 70 percent of the time.

Overall, in all riverine reaches, a low degree of compliance with this standard would be expected under all conditions considered. However, a high degree of compliance would be expected in the estuary, outer harbor, and nearshore Lake Michigan area.

- **Figures X-2 and X-2a: Achievement of the Geometric Mean Fecal Coliform Bacteria Standard Assessed on an Annual Basis**

Compliance with this standard 85 percent of the time would not be expected at a large number of assessment points in any of the watersheds under the four conditions analyzed, although, somewhat greater compliance would be expected under the extreme measures condition in the Kinnickinnic River watershed. That indicates that, if expenditures on additional point source controls could be foregone as might be possible under the recommended plan, additional resources directed toward control of nonpoint source pollution could achieve measurable improvements in water quality in that watershed.

In the Oak Creek and Root River watersheds, none of the assessment points would be expected to achieve compliance 85 percent of the time under any of the four conditions. With the exceptions of the Kinnickinnic River watershed under the extreme measures conditions only, compliance with this standard would be expected less than 70 percent of the time at a large proportion of the assessment points in all of the watersheds. In the estuary, the majority of assessment points would be expected to achieve 85 percent compliance, or better, under the revised 2020 baseline, recommended plan, and extreme measures conditions. All assessment points in the outer harbor and nearshore Lake Michigan area would be expected to achieve at least 85 percent compliance under all four conditions.

Overall, in all riverine reaches, a low degree of compliance with this standard would be expected under all conditions considered. However, a relatively high degree of compliance would be expected in the estuary and a high degree of compliance would be expected in the outer harbor, and nearshore Lake Michigan area.

- **Figures X-3 and X-3a: Achievement of the Single Sample Fecal Coliform Bacteria Standard Assessed on a May to September Basis**

In comparison to the previously-evaluated single sample standard assessed on an annual basis, much better compliance with this standard would be expected at assessment points in the Kinnickinnic and Menomonee River watersheds, and somewhat better compliance would be expected in the Milwaukee River watershed where implementation of the recommended plan would be expected to achieve a significant improvement relative to the revised 2020 baseline condition. For all four cases in the Root River watershed, 10 percent or fewer of the assessment points would be expected to achieve compliance 85 percent, or more, of the time. In the Oak Creek watershed, none of the assessment points would be expected to achieve compliance 85 percent of the time under any conditions extreme the extreme measures case, when about the 10 percent of the assessment points would achieve 85 percent compliance. In the estuary all assessment points would be expected to achieve 85 percent compliance, or better, under the revised 2020 baseline, recommended plan, and extreme measures conditions. In the outer harbor, and nearshore Lake Michigan area, all assessment points would be expected to achieve 85 percent compliance, or better, under all four conditions.

Overall, a relatively high degree of compliance with this standard would be expected in the Kinnickinnic and Menomonee River watersheds under the recommended plan and extreme measures conditions. In comparison to the single sample standard assessed on an annual basis that was evaluated above, assessment points in the Milwaukee and Root River watersheds would achieve higher levels of compliance with the standard under the recommended plan and extreme measures conditions, although those levels fall well short of what would be considered substantial compliance. Once again, the Oak Creek watershed would not be expected to achieve compliance 85 percent of the time under any conditions analyzed, except at 10 percent of the sites under the extreme measures condition. A high degree of compliance would be expected in the estuary, outer harbor, and nearshore Lake Michigan area under all conditions considered.

- **Figures X-4 and X-4a: Achievement of the Geometric Mean Fecal Coliform Bacteria Standard Assessed on a May to September Basis**

In comparison to the previously-evaluated geometric mean standard assessed on an annual basis, much better compliance with this standard would be expected in the Kinnickinnic and Menomonee River watersheds, and somewhat better compliance would be expected in the Milwaukee River watershed. In the Menomonee and Milwaukee River watersheds, implementation of the recommended plan would be expected to result in improved water quality relative to the revised 2020 baseline condition. While not quite as pronounced as for the geometric mean standard assessed on an annual basis, for this condition there are still large percentages of assessment points in the Kinnickinnic River, Menomonee river, Milwaukee River, Root River, and Oak Creek watersheds that would be expected to achieve less than 70 percent compliance with the standard under recommended plan conditions. In the estuary, outer harbor, and nearshore Lake Michigan area, all assessment points would be expected to achieve 85 percent compliance, or better, under all four conditions.

Overall, a relatively high degree of compliance with this standard would be expected at assessment points in the Kinnickinnic River watershed under the extreme measures condition and in the Menomonee River watershed under the recommended plan and extreme measures conditions. In comparison to the geometric mean standard assessed on an annual basis that was evaluated above, assessment points in the Milwaukee and Root River watersheds would be expected to achieve higher levels of compliance with the standard under the recommended plan and extreme measures conditions, although those levels fall well short of what would be considered substantial compliance. No assessment points in the Oak Creek watershed achieve compliance 85 percent of the time except under the extreme measures condition where 30 percent of the points would be expected to achieve compliance. A high degree of compliance would be expected in the estuary, outer harbor, and nearshore Lake Michigan area under all conditions considered.

- **Figures X-5 and X5a: Achievement of the Dissolved Oxygen Standard**

In general, 85 percent compliance with this standard, or better, would be expected under existing, revised 2020 baseline, recommended plan, and extreme measures conditions at the assessment points in the Menomonee, Milwaukee, and Root River watersheds, as well as the estuary, outer harbor, and nearshore Lake Michigan area. A somewhat lesser, but relatively high, degree of compliance would be expected in the Kinnickinnic River watershed, and a lower level of compliance would be anticipated in the Oak Creek watershed. However, at the assessment points in the Kinnickinnic River and Oak Creek watersheds, general compliance with the standard would be expected 70 percent or more of the time. Many of the assessment points in the Oak Creek watershed that are in the 70 to 84 percent of time compliance range fall in the higher end of that range.

Overall, a high degree of compliance with this standard would be expected under all conditions considered. As noted above, compliance within the Oak Creek watershed is somewhat better than indicated by Figure X-5, because, although significant percentages of the Oak Creek watershed assessment points fall in the 70 to 84 percent of time compliance range, many of the points fall in the higher end of that range.

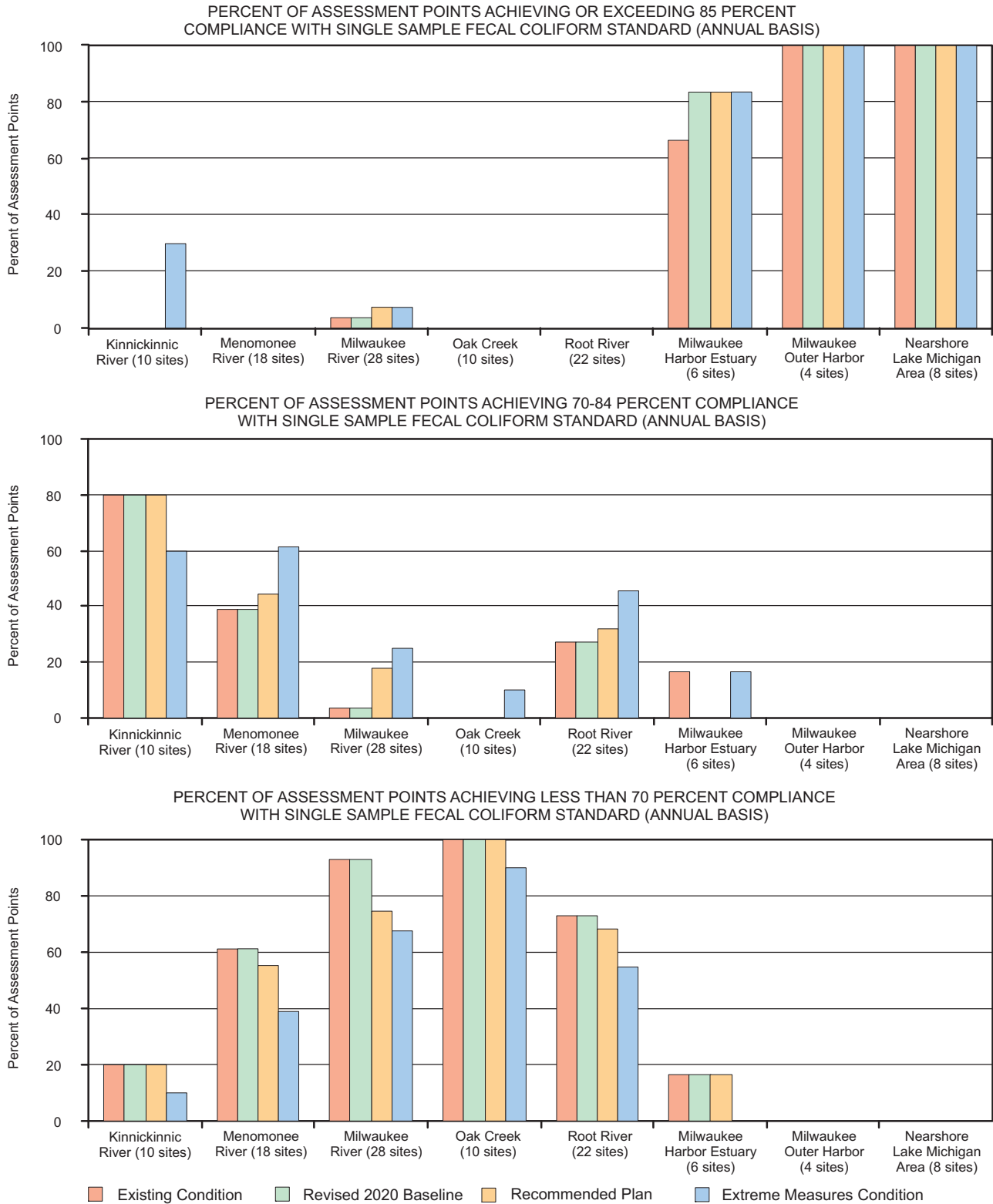
- **Figures X-6 and X-6a: Achievement of the Recommended Total Phosphorus Standard**
The assessment points in the Kinnickinnic, Menomonee, and Root River watersheds would generally be expected to be in compliance with the recommended total phosphorus planning standard about 50 percent, or more, of the time. A lesser degree of compliance with this standard would be expected in the Milwaukee River and Oak Creek watersheds; however, the Oak Creek watershed is the only one where all of the assessment points would be expected to meet the planning standard 70 percent, or more, of the time. With limited exceptions, the Root River watershed would generally meet the planning standard 70 percent or more of the time. Even under the extreme measures condition, a significant percentage of the assessment points in the Milwaukee River watershed would be expected to meet the planning standard less than 70 percent of the time, as would smaller percentages of the points in the Kinnickinnic and Menomonee River watersheds.

In the estuary, the majority of assessment points would be expected to achieve 85 percent compliance, or better, under existing and revised 2020 baseline conditions. All assessment points would be expected to achieve 85 percent compliance, or better, under recommended plan and extreme measures conditions. All assessment points in the outer harbor and nearshore Lake Michigan area would be expected to achieve at least 85 percent compliance under all four conditions.

Overall, with respect to the 85 percent of time bench mark, a relatively high degree of compliance with this standard would be expected in the Menomonee and Root River watersheds under recommended plan and extreme measures conditions. A moderate level of compliance would be expected in the Kinnickinnic River watershed under all four conditions. The assessment points in the Oak Creek watershed would be expected to achieve a lower degree of compliance relative to the 85 percent bench mark, but they all could achieve compliance 70 percent or more of the time. Lesser overall levels of compliance would be expected in the Milwaukee River watershed. A high degree of compliance would be expected in the estuary, outer harbor, and nearshore Lake Michigan area.

Figure X-1

ACHIEVEMENT OF THE SINGLE SAMPLE FECAL COLIFORM BACTERIA STANDARD ASSESSED ON AN ANNUAL BASIS

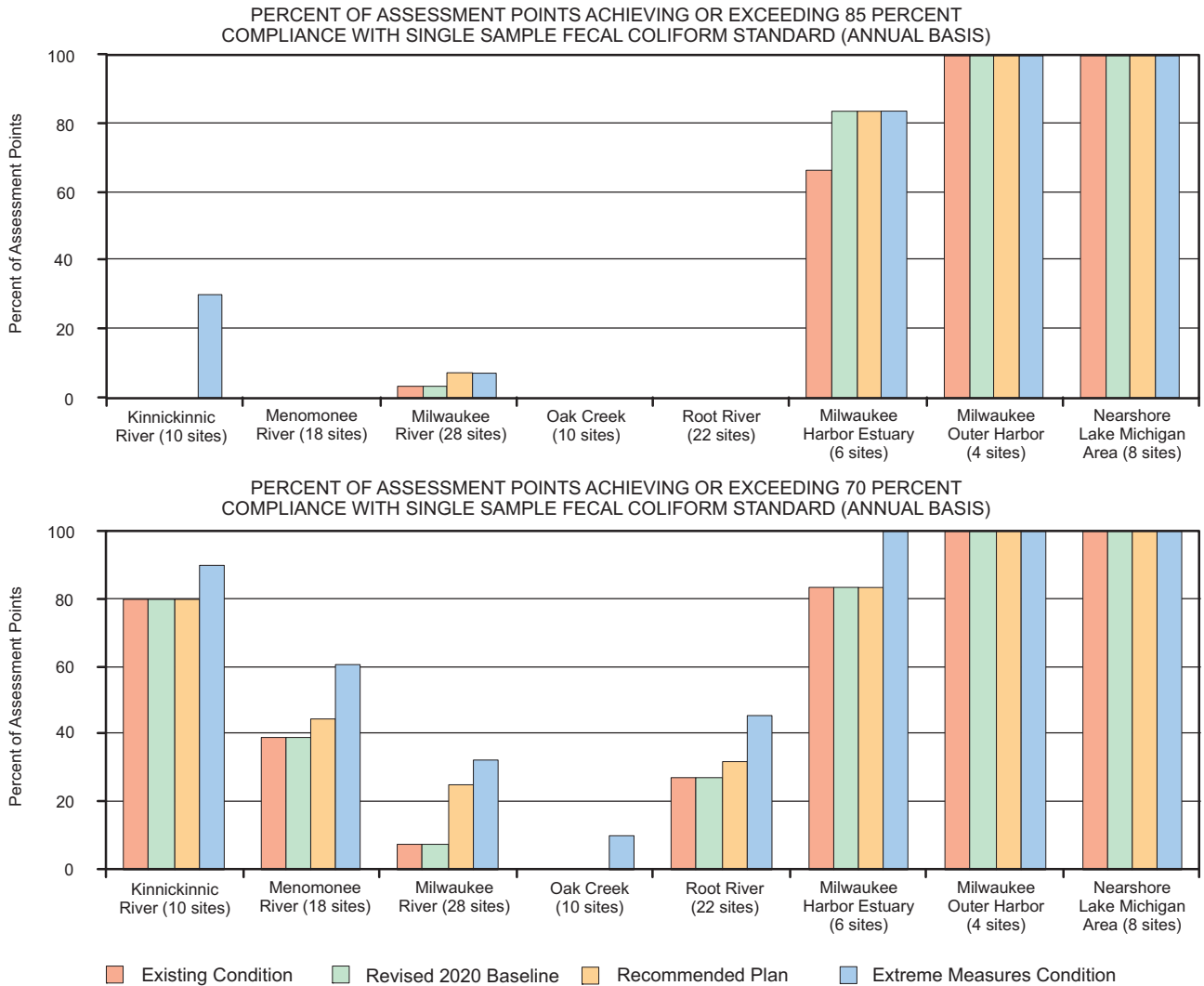


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-1a

ACHIEVEMENT OF THE SINGLE SAMPLE FECAL COLIFORM BACTERIA STANDARD ASSESSED ON AN ANNUAL BASIS

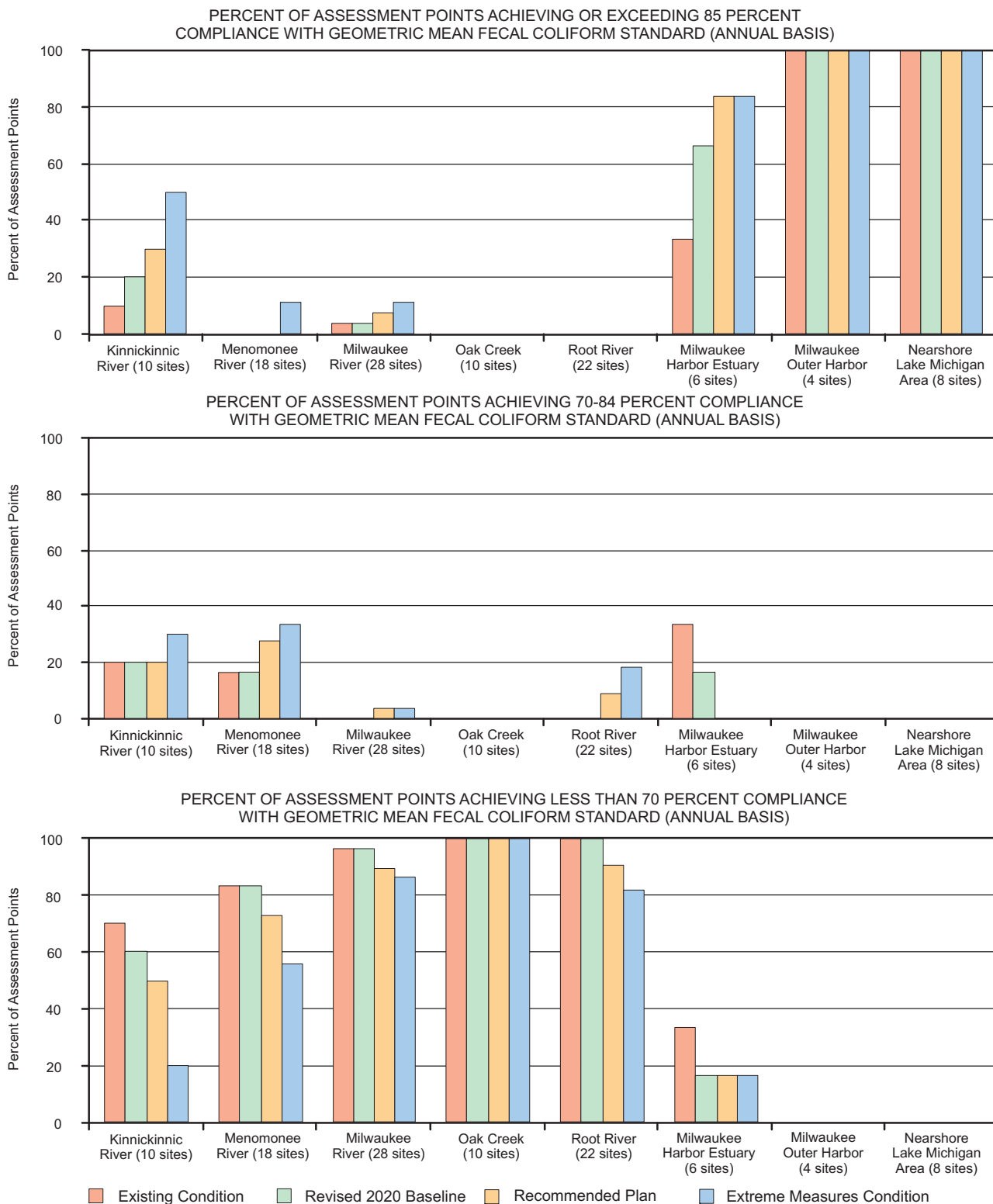


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-2

ACHIEVEMENT OF THE GEOMETRIC MEAN FECAL COLIFORM BACTERIA STANDARD ASSESSED ON AN ANNUAL BASIS

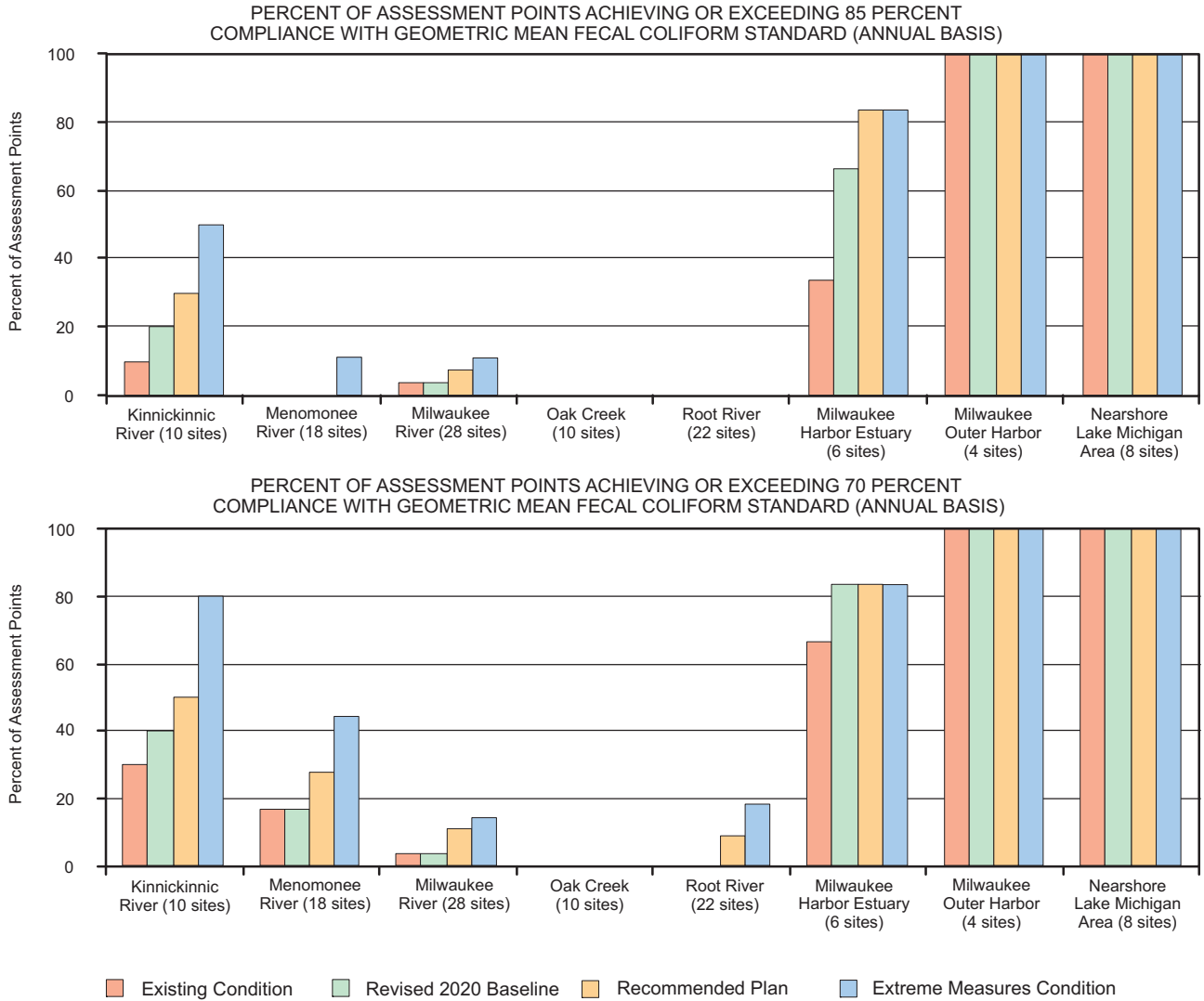


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc.; and SEWRPC.

Figure X-2a

ACHIEVEMENT OF THE GEOMETRIC MEAN FECAL COLIFORM BACTERIA STANDARD ASSESSED ON AN ANNUAL BASIS

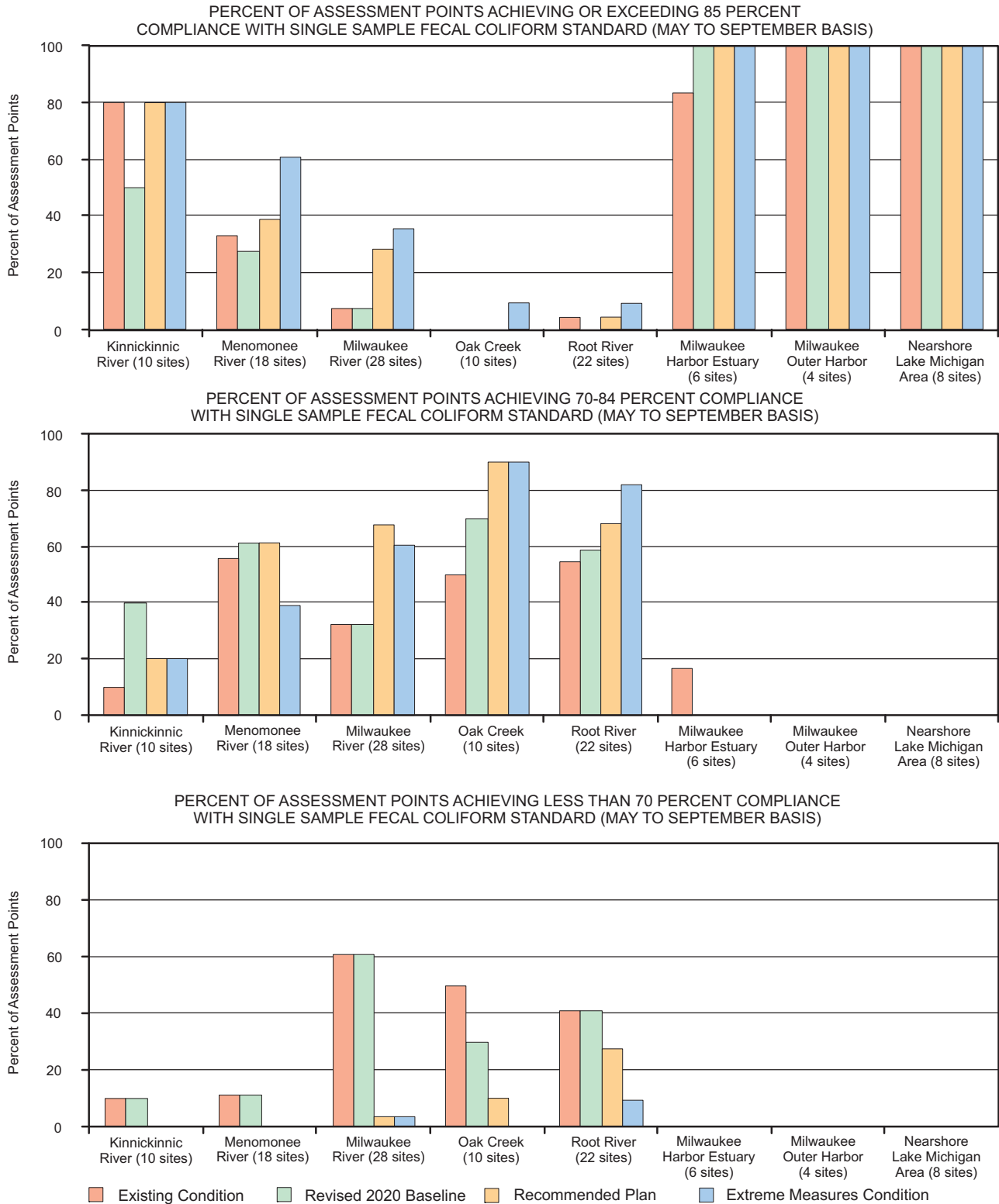


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-3

ACHIEVEMENT OF THE SINGLE SAMPLE FECAL COLIFORM BACTERIA STANDARD ASSESSED ON A MAY TO SEPTEMBER BASIS

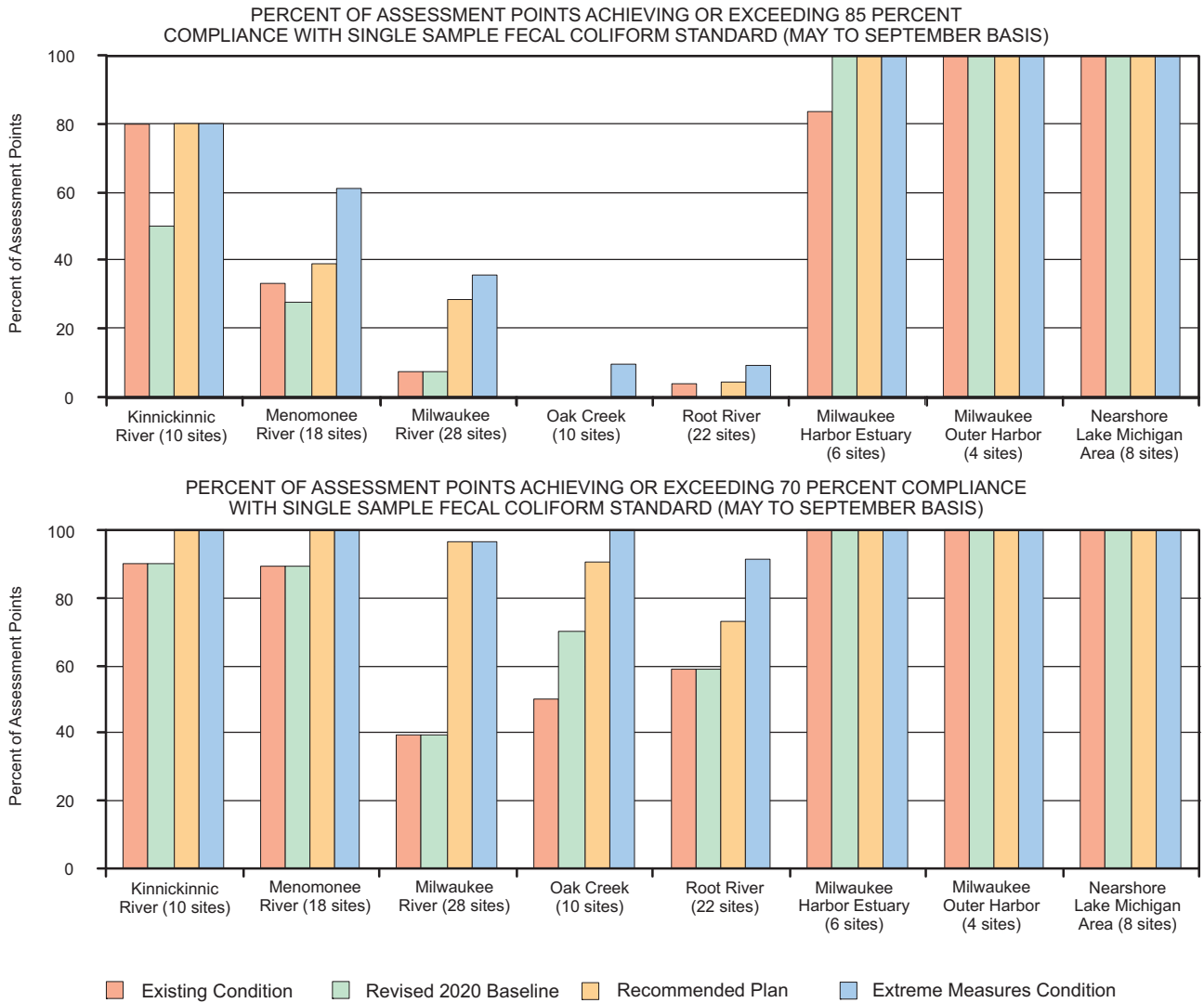


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-3a

ACHIEVEMENT OF THE SINGLE SAMPLE FECAL COLIFORM BACTERIA STANDARD ASSESSED ON A MAY TO SEPTEMBER BASIS

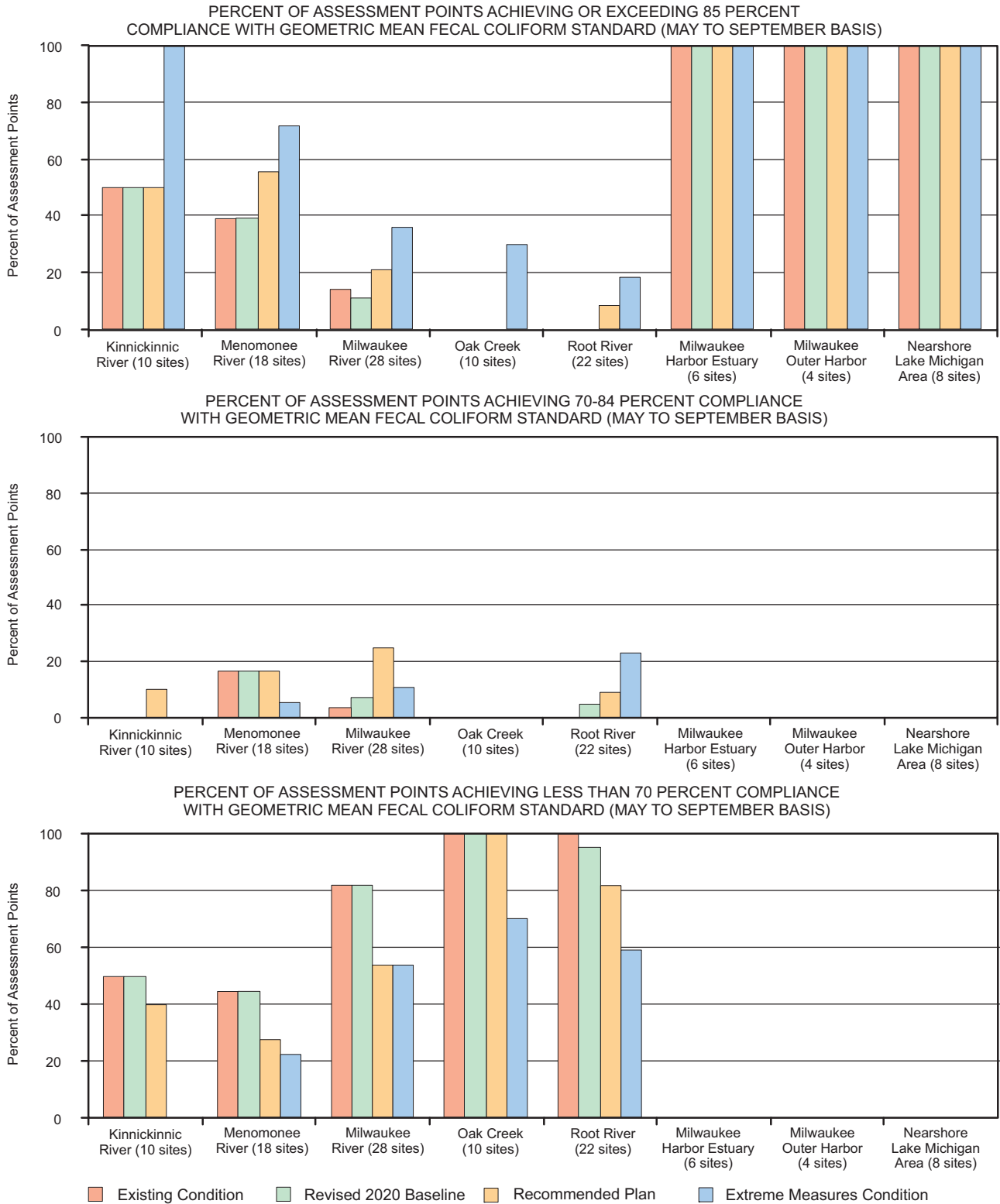


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-4

ACHIEVEMENT OF THE GEOMETRIC MEAN FECAL COLIFORM BACTERIA STANDARD ASSESSED ON A MAY TO SEPTEMBER BASIS

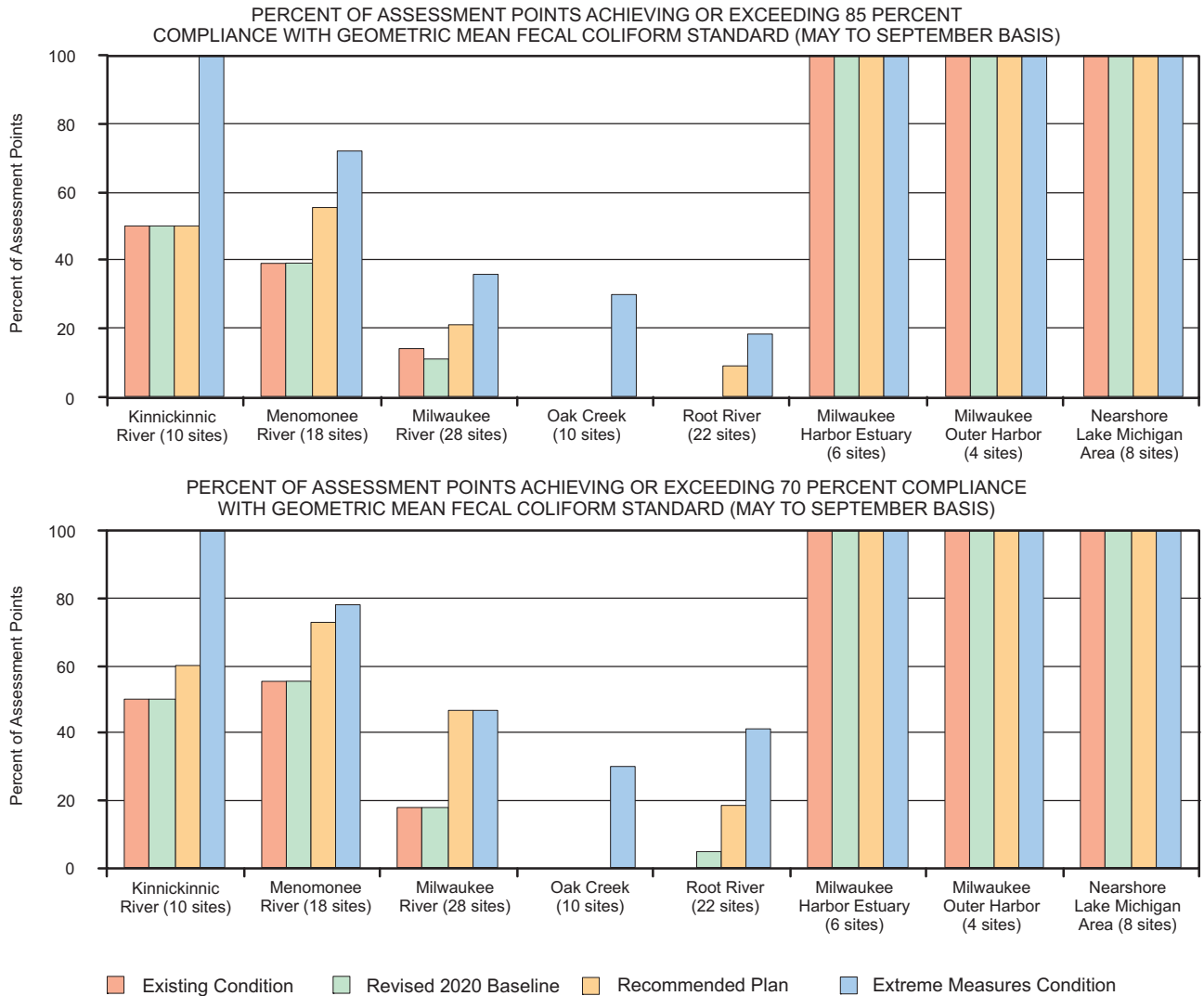


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-4a

ACHIEVEMENT OF THE GEOMETRIC MEAN FECAL COLIFORM BACTERIA STANDARD ASSESSED ON A MAY TO SEPTEMBER BASIS

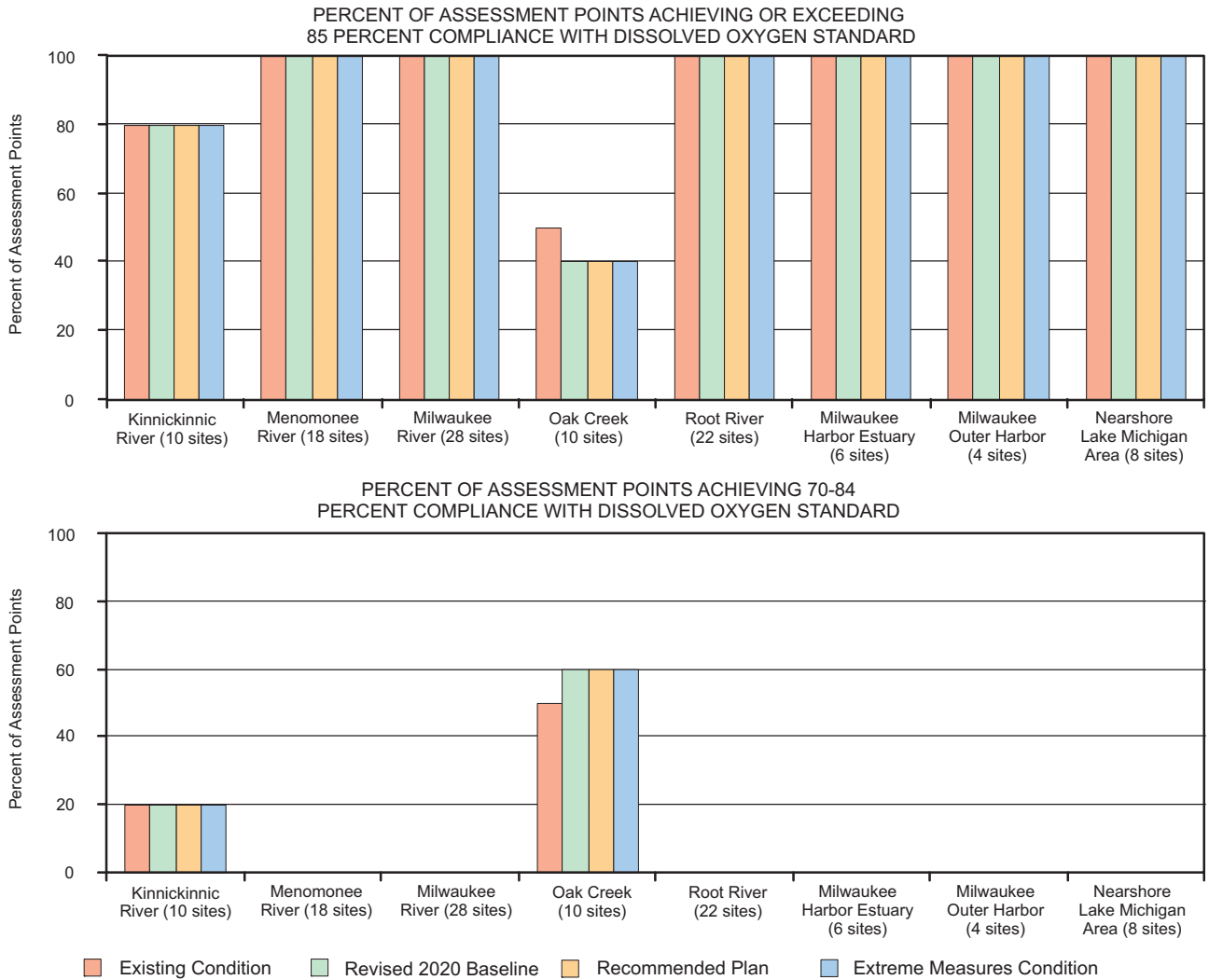


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-5

ACHIEVEMENT OF THE DISSOLVED OXYGEN STANDARD

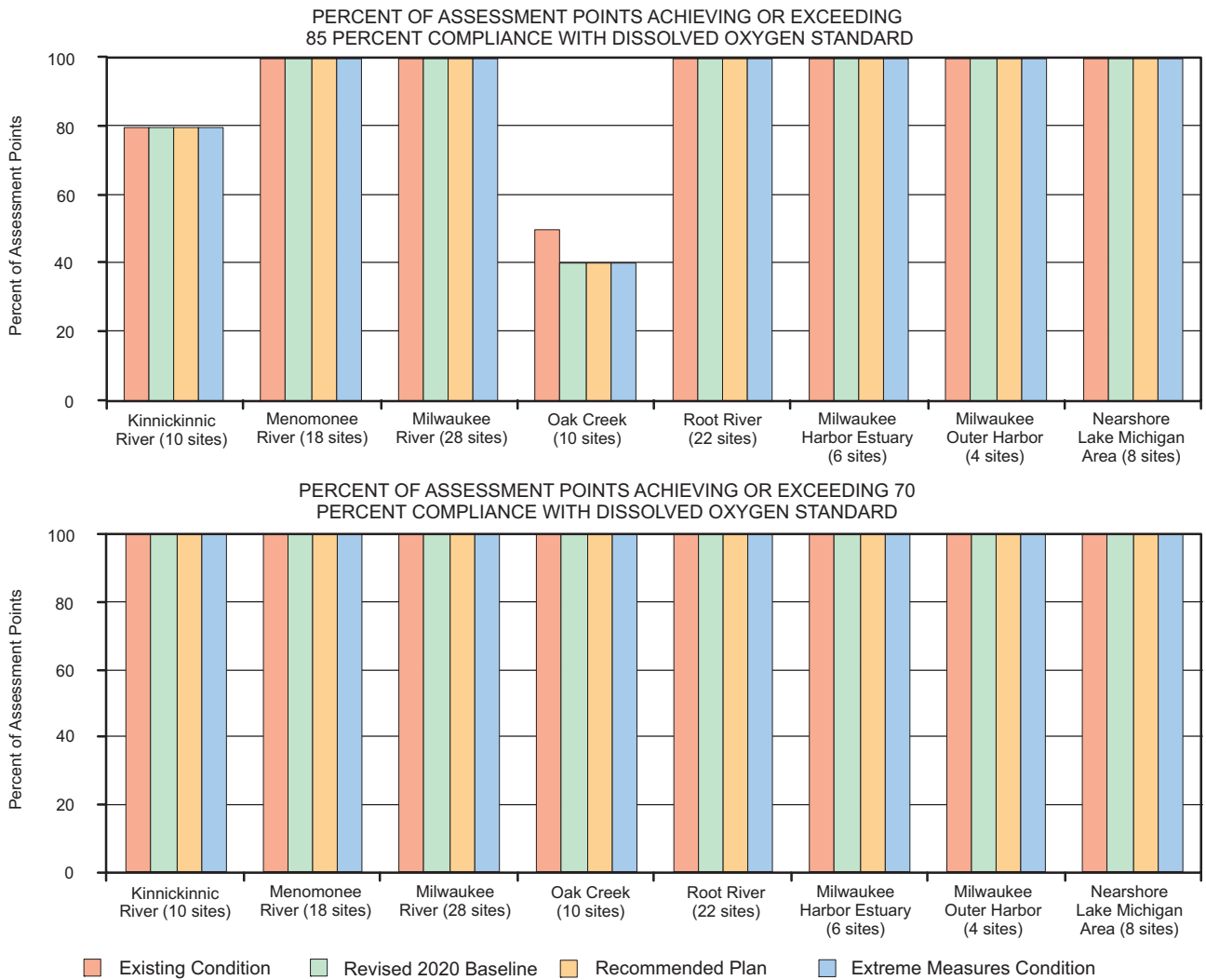


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-5a

ACHIEVEMENT OF THE DISSOLVED OXYGEN STANDARD

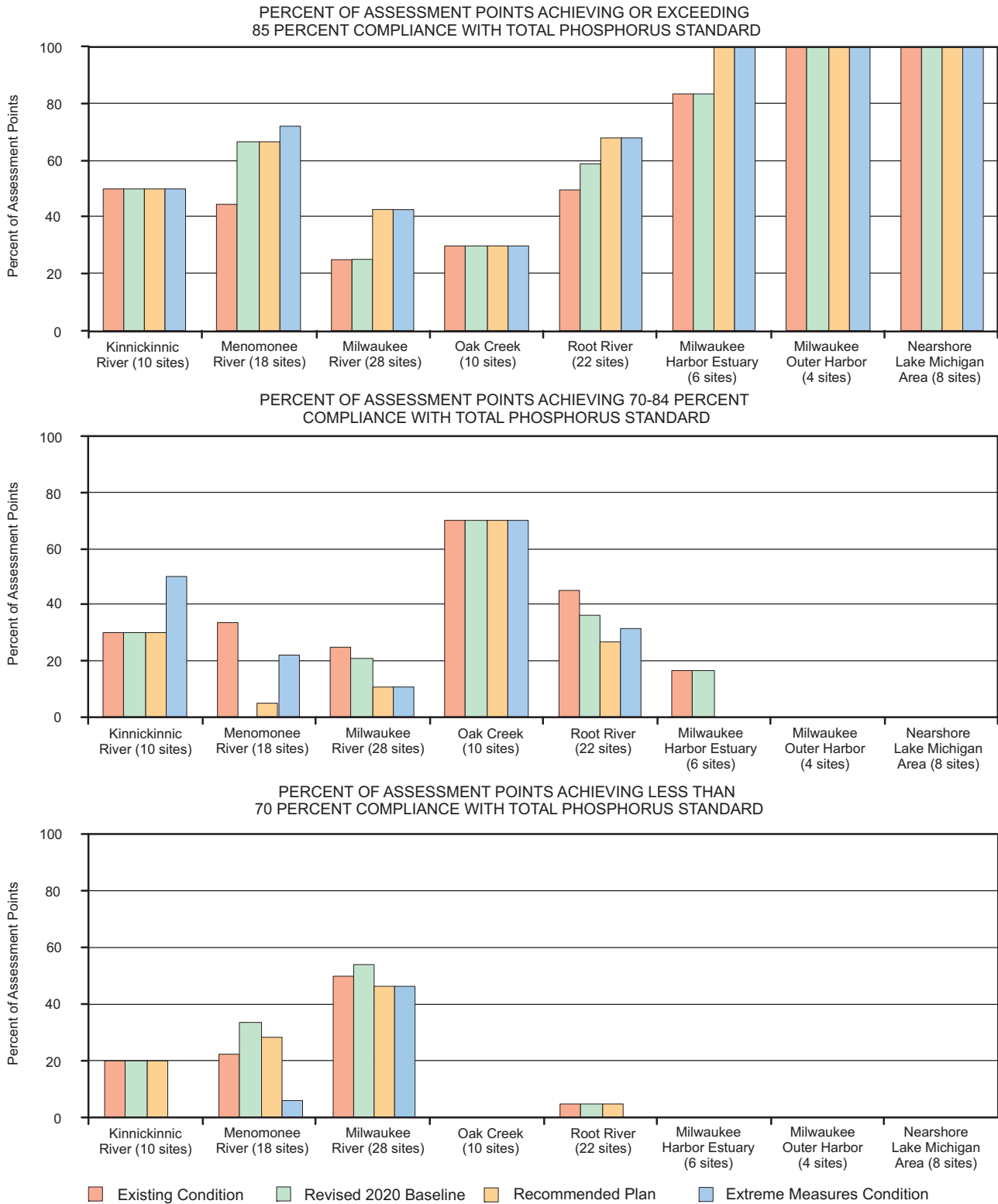


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-6

ACHIEVEMENT OF THE RECOMMENDED TOTAL PHOSPHORUS PLANNING STANDARD

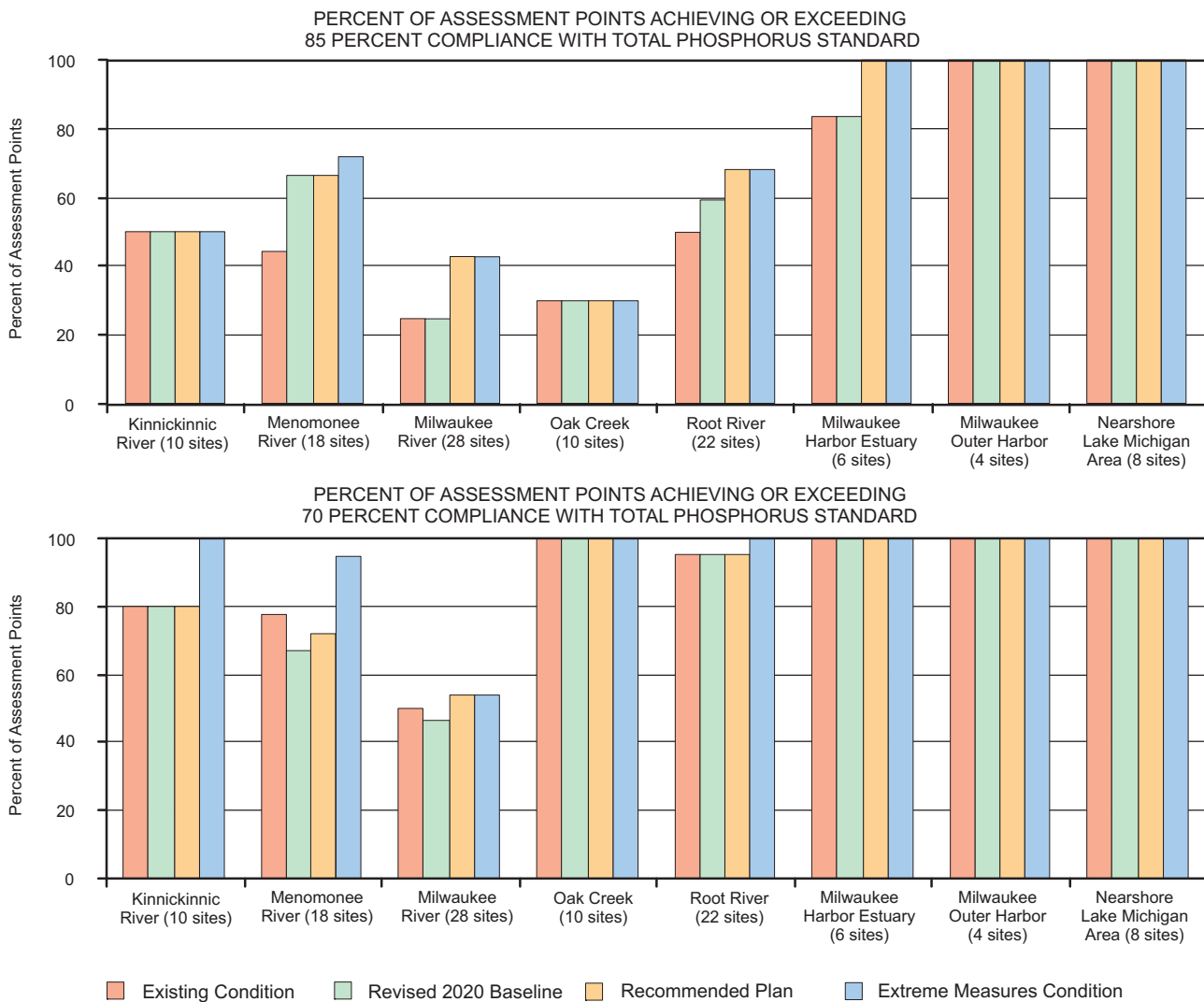


NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

Figure X-6a

ACHIEVEMENT OF THE RECOMMENDED TOTAL PHOSPHORUS PLANNING STANDARD



NOTE: The numerical water quality standards that were applied to assess compliance are set forth in Tables M-1 through M-6 of Appendix M of this report.

Source: Brown and Caldwell; HydroQual, Inc.; Tetra Tech, Inc; and SEWRPC.

EXHIBIT B-4

Map X-11e

RECOMMENDED DREDGING ELEMENT OF THE
REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE

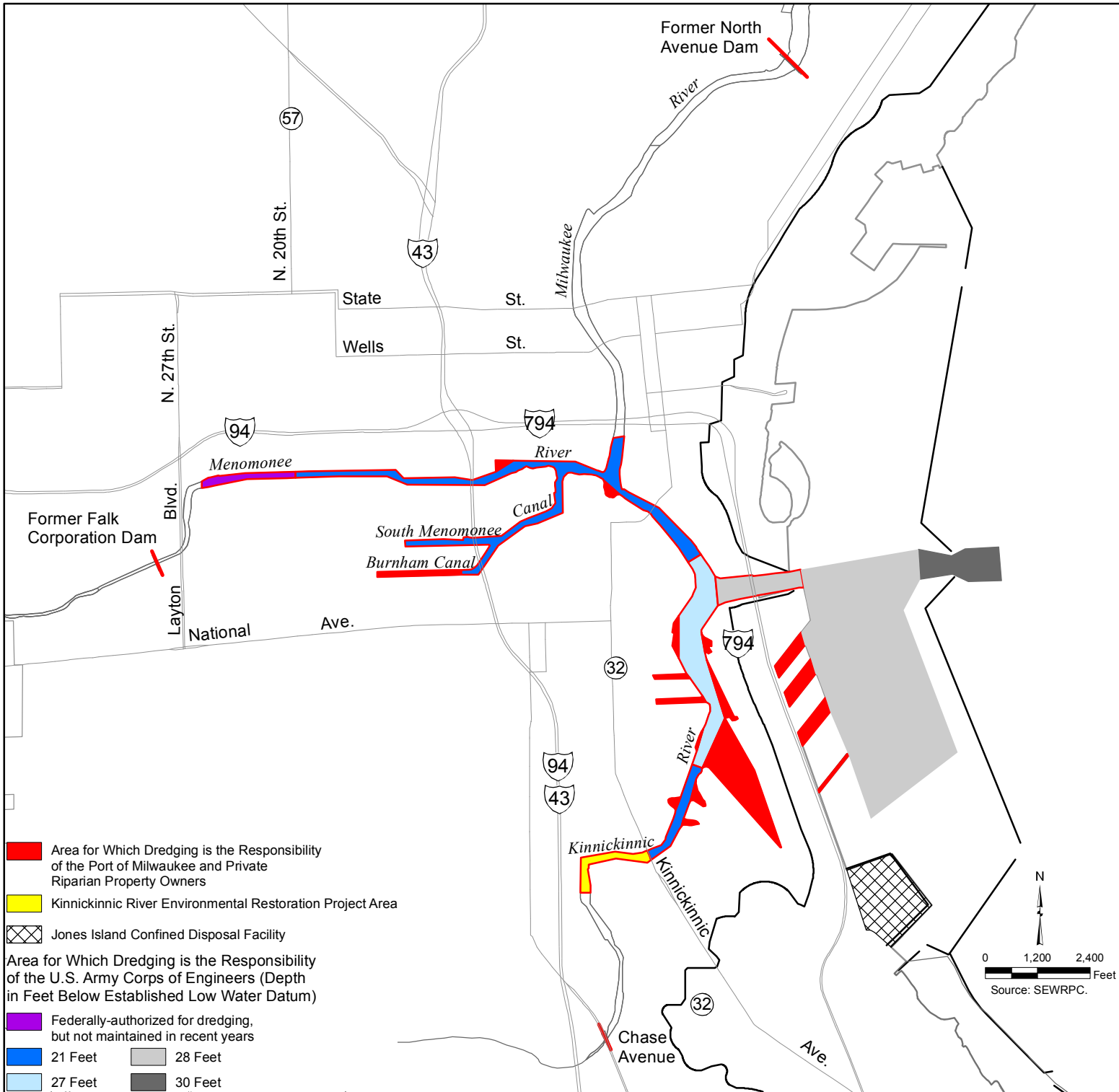


Exhibit C

Table XI-2

LOCAL GOVERNMENTAL MANAGEMENT AGENCY DESIGNATIONS AND SELECTED RESPONSIBILITIES AND PRIORITIZATION FOR THE POINT SOURCE POLLUTION ABATEMENT ELEMENT OF THE RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS

Point Source Management Agency	Refine and Detail Sewer Service Area [Low Priority] ^a	Maintain and Operate Wastewater Treatment Plant [High Priority] ^a	Upgrade Wastewater Treatment Plant According to Recent Site Study or Facilities Plan [High Priority] ^a	Construct and Maintain Intercommunity Trunk Sewer [High Priority] ^a	Construct and Maintain Local Sewer System [High Priority] ^a	Abate Combined Sewer Overflow [Medium Priority] ^a	Evaluate the Need to Reduce Clearwater Infiltration and Inflow [High Priority] ^a	Eliminate Discharges from All Points of Sewage Flow Relief [High Priority] ^a	Implement CMOM Program [High Priority] ^a	Prepare Facilities Plans [Medium Priority] ^a
Dodge County^b	--	--	--	--	--	--	--	--	--	--
Village of Lomira	X	X	--	--	X	--	X	--	X	--
Fond du Lac County^b	--	--	--	--	--	--	--	--	--	--
Village of Campbellsport	X	X	--	--	X	--	X	--	X	--
Village of Eden	--	--	--	--	X	--	X	--	X	--
Kenosha County										
None	--	--	--	--	--	--	--	--	--	--
Milwaukee County	--	--	--	--	--	--	--	--	--	--
Milwaukee Metropolitan Sewerage District	X	X	X	X	--	X	X	X	--	--
City of Cudahy	--	--	--	--	X	--	X	--	X	--
City of Franklin	--	--	--	X	X	--	X	--	X	--
City of Glendale	--	--	--	--	X	--	X	--	X	--
City of Greenfield	--	--	--	--	X	--	X	--	X	--
City of Milwaukee	--	--	--	--	X	--	X	--	X	--
City of Oak Creek	--	--	--	--	X	--	X	--	X	--
City of St. Francis	--	--	--	--	X	--	X	--	X	--
City of South Milwaukee	X	X	X	--	X	--	X	X	X	--
City of Wauwatosa	--	--	--	--	X	--	X	--	X	--
City of West Allis	--	--	--	--	X	--	X	X	X	--
Village of Bayside	--	--	--	--	X	--	X	--	X	--
Village of Brown Deer	--	--	--	--	X	--	X	X	X	--
Village of Fox Point	--	--	--	--	X	--	X	X	X	--
Village of Greendale	--	--	--	--	X	--	X	--	X	--
Village of Hales Corners	--	--	--	--	X	--	X	--	X	--
Village of River Hills	--	--	--	--	X	--	X	X	X	--
Village of Shorewood	--	--	--	--	X	--	X	--	X	--
Village of West Milwaukee	--	--	--	--	X	--	X	--	X	--
Village of Whitefish Bay	--	--	--	--	X	--	X	--	X	--

Table XI-2 (continued)

Point Source Management Agency	Refine and Detail Sewer Service Area [Low Priority] ^a	Maintain and Operate Wastewater Treatment Plant [High Priority] ^a	Upgrade Wastewater Treatment Plant According to Recent Site Study or Facilities Plan [High Priority] ^a	Construct and Maintain Intercommunity Trunk Sewer [High Priority] ^a	Construct and Maintain Local Sewer System [High Priority] ^a	Abate Combined Sewer Overflow [Medium Priority] ^a	Evaluate the Need to Reduce Clearwater Infiltration and Inflow [High Priority] ^a	Eliminate Discharges from All Points of Sewage Flow Relief [High Priority] ^a	Implement CMOM Program [High Priority] ^a	Prepare Facilities Plans [Medium Priority] ^a
Ozaukee County	--	--	--	--	--	--	--	--	--	--
City of Cedarburg.....	--	X	--	--	X	--	X	X	X	X
City of Mequon.....	--	--	--	--	X	--	X	--	X	--
City of Port Washington	--	X	--	--	X	--	X	--	X	--
Village of Fredonia	--	X	X	--	X	--	X	X	X	--
Village of Grafton	--	X	--	--	X	--	X	X	X	X
Village of Newburg.....	--	X	--	--	X	--	X	--	X	X
Village of Saukville.....	--	X	--	--	X	--	X	X	X	--
Village of Thiensville	--	--	--	--	X	--	X	X	X	--
Town of Fredonia–Waubeka Area Sanitary District.....	--	--	--	X	X	--	--	--	X	--
Racine County	--	--	--	--	--	--	--	--	--	--
City of Racine	--	X	--	--	X	--	X	X	X	X
Village of Caledonia	--	--	--	--	--	--	--	--	--	--
Caledonia West Utility District.....	--	--	--	--	X	--	X	X	X	X
Caledonia East Utility District ^c	--	--	--	--	X	--	X	X	X	X
Village of Mt. Pleasant	--	--	--	--	X	--	X	X	X	X
Mt. Pleasant Utility District No. 1.....	--	--	--	--	X	--	X	X	X	X
Village of North Bay	--	--	--	--	X	--	X	X	X	--
Village of Sturtevant	--	--	--	--	X	--	--	X	X	X
Village of Union Grove	--	X	--	--	X	--	X	X	X	--
Village of Wind Point.....	--	--	--	--	X	--	--	--	--	--
Town of Raymond.....	--	--	--	--	--	--	--	--	--	X
Town of Yorkville Sewer Utility District No. 1	X	X	--	--	X	--	X	--	X	X
Sheboygan County^b	--	--	--	--	--	--	--	--	--	--
Village of Adell	X	X	--	--	X	--	X	X	X	--
Onion River Sewerage Commission	X	X	--	--	--	--	X	--	--	--
Village of Cascade.....	X	X	--	--	X	--	X	--	X	--
Village of Random Lake.....	X	X	--	--	X	--	X	--	X	--
Town of Lyndon–Lake Ellen Sanitary District.....	--	--	--	--	X	--	--	--	--	--
Town of Scott Sanitary District No. 1	X	X	--	--	X	--	X	--	X	--

Table XI-2 (continued)

Point Source Management Agency	Refine and Detail Sewer Service Area [Low Priority] ^a	Maintain and Operate Wastewater Treatment Plant [High Priority] ^a	Upgrade Wastewater Treatment Plant According to Recent Site Study or Facilities Plan [High Priority] ^a	Construct and Maintain Intercommunity Trunk Sewer [High Priority] ^a	Construct and Maintain Local Sewer System [High Priority] ^a	Abate Combined Sewer Overflow [Medium Priority] ^a	Evaluate the Need to Reduce Clearwater Infiltration and Inflow [High Priority] ^a	Eliminate Discharges from All Points of Sewage Flow Relief [High Priority] ^a	Implement CMOM Program [High Priority] ^a	Prepare Facilities Plans [Medium Priority] ^a
Washington County	--	--	--	--	--	--	--	--	--	--
City of West Bend	--	X	--	X	X	--	X	X	X	--
Village of Germantown.....	--	--	--	--	X	--	X	--	X	--
Village of Jackson.....	--	X	--	--	X	--	X	X	X	X
Village of Kewaskum.....	--	X	X	--	X	--	X	X	X	--
Village of Newburg.....	--	X	--	--	X	--	X	X	X	--
Town of Trenton-Wallace Lake Sanitary District.....	--	--	--	--	X	--	X	--	X	--
Town of West Bend-Silver Lake Sanitary District.....	--	--	--	--	X	--	--	--	X	--
Waukesha County	--	--	--	--	--	--	--	--	--	--
City of Brookfield.....	--	X	--	--	X	--	X	X	X	--
City of Muskego	--	--	--	X	X	--	X	--	X	--
City of New Berlin	--	--	--	X	X	--	X	--	X	--
Village of Butler.....	--	--	--	--	X	--	X	--	X	--
Village of Elm Grove	--	--	--	--	X	--	X	X	X	--
Village of Menomonee Falls.....	--	--	--	--	X	--	X	X	X	--
Town of Brookfield	--	--	--	--	X	--	--	--	X	--

^aGeneralized priorities are assigned by recommendation. For certain municipalities or agencies, the priority for implementing a given recommendation may be higher or lower than the assigned priority, depending on specific circumstances and changed conditions over time.

^bFor those municipalities located outside the Southeastern Wisconsin Region, the management agency designation is advisory only.

^cThe Caledonia East Utility District also serves the Village of Wind Point.

^dThe Wallace Lake Sanitary District also serves part of the Town of Barton.

Source: SEWRPC.

Exhibit D

Table XI-3

GOVERNMENTAL MANAGEMENT AGENCY DESIGNATIONS AND SELECTED RESPONSIBILITIES AND PRIORITIZATION FOR THE RURAL NONPOINT SOURCE POLLUTION ABATEMENT SUBELEMENT OF THE RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS

Rural Nonpoint Source Management Agency	Implement Practices to Reduce Cropland Soil Erosion to "T" or Below [Medium Priority] ^a	Manure and Nutrient Management [High Priority] ^a	Control Barnyard Runoff [High Priority] ^a	Establish Riparian Buffers [High Priority] ^a	Convert Marginal Cropland and Pasture to Wetlands and Prairies [High Priority] ^a	Restricting Livestock Access to Streams [Medium Priority] ^a	Managing Milking Center Wastewater [Medium Priority] ^a	Expanded Oversight of Private Onsite Wastewater Treatment Systems, Including Establishment of Utility Districts ^b [Medium Priority] ^a
Dodge County^c	X	X	X	X	X	X	X	X
Dodge County Drainage Board.....	--	--	--	X	--	--	--	--
Town of Lomira.....	--	--	--	--	--	--	--	X
Fond du Lac County^c	X	X	X	X	X	X	X	X
Fond du Lac County Drainage Board.....	--	--	--	X	--	--	--	--
Town of Ashford.....	--	--	--	--	--	--	--	X
Town of Auburn.....	--	--	--	--	--	--	--	X
Town of Byron.....	--	--	--	--	--	--	--	X
Town of Eden.....	--	--	--	--	--	--	--	X
Town of Osceola.....	--	--	--	--	--	--	--	X
Kenosha County	X	X	X	X	X	X	X	X
Kenosha County Drainage Board ^d	--	--	--	X	--	--	--	--
Town of Paris.....	--	--	--	--	--	--	--	X
Milwaukee County	X	--	--	X	X	--	--	--
Milwaukee Metropolitan Sewerage District.....	--	--	--	X	X	--	--	--
City of Franklin.....	--	--	--	--	--	--	--	X
Ozaukee County	X	X	X	X	X	X	X	X
Ozaukee County Drainage Board.....	--	--	--	X	--	--	--	--
Town of Cedarburg.....	--	--	--	--	--	--	--	X
Town of Fredonia.....	--	--	--	--	--	--	--	X
Town of Fredonia–Waubeka Area Sanitary District.....	--	--	--	--	--	--	--	X
Town of Grafton.....	--	--	--	--	--	--	--	X
Town of Port Washington.....	--	--	--	--	--	--	--	X
Town of Saukville.....	--	--	--	--	--	--	--	X

Table XI-3 (continued)

Rural Nonpoint Source Management Agency	Implement Practices to Reduce Cropland Soil Erosion to "T" or Below [Medium Priority] ^a	Manure and Nutrient Management [High Priority] ^a	Control Barnyard Runoff [High Priority] ^a	Establish Riparian Buffers [High Priority] ^a	Convert Marginal Cropland and Pasture to Wetlands and Prairies [High Priority] ^a	Restricting Livestock Access to Streams [Medium Priority] ^a	Managing Milking Center Wastewater [Medium Priority] ^a	Expanded Oversight of Private Onsite Wastewater Treatment Systems, Including Establishment of Utility Districts ^b [Medium Priority] ^a
Racine County	X	X	X	X	X	X	X	X
Racine County Drainage Board	--	--	--	X	--	--	--	--
Town of Dover	--	--	--	--	--	--	--	X
Town of Raymond.....	--	--	--	--	--	--	--	X
Town of Yorkville	--	--	--	--	--	--	--	X
Town of Yorkville Sewer Utility District No. 1.....	--	--	--	--	--	--	--	X
Sheboygan County^c	X	X	X	X	X	X	X	X
Sheboygan County Drainage Board	--	--	--	X	--	--	--	--
Town of Greenbush	--	--	--	X	--	--	--	X
Town of Lyndon	--	--	--	--	--	--	--	X
Town of Lyndon–Lake Ellen Sanitary District.....	--	--	--	--	--	--	--	X
Town of Mitchell.....	--	--	--	X	--	--	--	X
Town of Scott.....	--	--	--	--	--	--	--	X
Town of Scott Sanitary District	--	--	--	--	--	--	--	X
Town of Sherman	--	--	--	--	--	--	--	X
Washington County	X	X	X	X	X	X	X	X
Washington County Drainage Board	--	--	--	X	--	--	--	--
Town of Barton	--	--	--	--	--	--	--	X
Towns of Barton and Trenton–Wallace Lake Sanitary District.....	--	--	--	--	--	--	--	X
Town of Farmington.....	--	--	--	--	--	--	--	X
Town of Germantown.....	--	--	--	--	--	--	--	X
Town of Jackson.....	--	--	--	--	--	--	--	X
Town of Kewaskum	--	--	--	--	--	--	--	X
Town of Polk.....	--	--	--	--	--	--	--	X
Town of Richfield	--	--	--	--	--	--	--	X
Town of Trenton.....	--	--	--	--	--	--	--	X
Town of Wayne.....	--	--	--	--	--	--	--	X
Town of West Bend	--	--	--	--	--	--	--	X
Waukesha County	X	X	X	X	X	X	X	X
Waukesha County Drainage Board	--	--	--	X	--	--	--	--
Town of Lisbon	--	--	--	--	--	--	--	X

Table XI-3 (continued)

Rural Nonpoint Source Management Agency	Implement Practices to Reduce Cropland Soil Erosion to "T" or Below [Medium Priority] ^a	Manure and Nutrient Management [High Priority] ^a	Control Barnyard Runoff [High Priority] ^a	Establish Riparian Buffers [High Priority] ^a	Convert Marginal Cropland and Pasture to Wetlands and Prairies [High Priority] ^a	Restricting Livestock Access to Streams [Medium Priority] ^a	Managing Milking Center Wastewater [Medium Priority] ^a	Expanded Oversight of Private Onsite Wastewater Treatment Systems, Including Establishment of Utility Districts ^b [Medium Priority] ^a
State of Wisconsin								
Department of Agriculture, Trade and Consumer Protection.....	X	X	X	X	--	X	X	--
Department of Commerce.....	--	--	--	--	--	--	--	X
Department of Natural Resources	X	X	X	X	X	X	--	--
Federal Agencies								
U.S. Department of Agriculture	--	X	X	--	X	--	--	--
Farm Services Agency.....	--	--	--	X	--	--	--	--
Natural Resources Conservation Service	X	--	--	X	--	--	--	--
Land Trusts^e								
Kenosha/Racine Land Trust	--	--	--	X	X	--	--	--
Milwaukee Area Land Conservancy	--	--	--	X	X	--	--	--
Ozaukee-Washington Land Trust	--	--	--	X	X	--	--	--
Waukesha County Land Conservancy.....	--	--	--	X	X	--	--	--

^aGeneralized priorities are assigned by recommendation. For certain municipalities or agencies, the priority for implementing a given recommendation may be higher or lower than the assigned priority, depending on specific circumstances and changed conditions over time.

^bIn some counties, existing county programs may be providing the additional oversight of POWTS recommended for town utility districts to perform. In these instances, it may not be necessary to form town utility districts for the sole purpose of providing supplemental oversight of POWTS.

^cFor those municipalities located outside the Southeastern Wisconsin Region, the management agency designation is advisory only.

^dAs of the date of publication of this report, Kenosha County did not have an active drainage board.

^eWhile land trusts are not governmental agencies, they could play a significant role in implementing certain recommendations.

Source: SEWRPC.

Exhibit E

Table XI-4

GOVERNMENTAL MANAGEMENT AGENCY DESIGNATIONS AND SELECTED RESPONSIBILITIES AND PRIORITIZATION FOR THE URBAN NONPOINT SOURCE POLLUTION ABATEMENT SUBELEMENT OF THE RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS

Urban Nonpoint Source Management Agency	Implementation of Construction Erosion Control Requirements and Nonagricultural (Urban) Performance Standards of Chapter NR 151 [High Priority] ^a	Programs to Detect Illicit Discharges to Storm Sewer Systems and Control Urban-Sourced Pathogens [High Priority] ^a	Human Health and Ecological Risk Assessments to Address Pathogens in Stormwater Runoff [High Priority] ^a	Chloride Reduction Programs [High Priority] ^a	Fertilizer Management and Information and Education [Medium Priority] ^a	Residential Roof Drain Disconnection [Medium Priority] ^a	Beach and Riparian Debris and Litter Control [High Priority] ^a	Pet Litter Management [Medium Priority] ^a	Bacteria and Pathogen Research and Implementation Projects [High Priority] ^a
Dodge County^b	X	X	--	X	X	--	--	X	--
Village of Lomira	X	X	--	X	--	X	--	X	--
Town of Lomira	X	--	--	--	--	--	--	--	--
Fond du Lac County^b	X	X	--	X	X	--	X	X	--
Village of Campbellsport	X	X	--	X	--	X	X	X	--
Village of Eden.....	X	X	--	X	--	X	X	X	--
Town of Ashford.....	X	--	--	--	--	--	--	--	--
Town of Auburn	X	--	--	--	X	--	--	--	--
Town of Auburn–Forest Lake Improvement Association	--	--	--	--	X	--	X	--	--
Town of Byron.....	X	--	--	--	--	--	--	--	--
Town of Eden.....	X	--	--	--	--	--	--	--	--
Town of Empire.....	X	--	--	--	--	--	--	--	--
Town of Forest.....	X	--	--	--	--	--	--	--	--
Town of Osceola	X	--	--	--	X	--	--	--	--
Town of Osceola–Mud Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	--	--	--	--	X	--	X	--	--
Town of Osceola–Kettle Moraine Lake Association	--	--	--	--	X	--	X	--	--
Town of Osceola–Long Lake Fishing Club, Inc.	--	--	--	--	X	--	X	--	--
Kenosha County	X	--	--	X	X	--	X	--	--
Town of Paris.....	X	--	--	--	--	--	--	--	--
Milwaukee County	X	X	--	X	X	--	X	X	--
Milwaukee Metropolitan Sewerage District	X	X	X	--	X	X	X	--	X
City of Cudahy	X	X	--	X	X	X	X	X	--
City of Franklin.....	X	X	--	X	X	X	X	X	--
City of Glendale	X	X	--	X	X	X	X	X	--
City of Greenfield.....	X	X	--	X	X	X	X	X	--
City of Milwaukee.....	X	X	--	X	X	X	X	X	--

Table XI-4 (continued)

Urban Nonpoint Source Management Agency	Implementation of Construction Erosion Control Requirements and Nonagricultural (Urban) Performance Standards of Chapter NR 151 [High Priority] ^a	Programs to Detect Illicit Discharges to Storm Sewer Systems and Control Urban-Sourced Pathogens [High Priority] ^a	Human Health and Ecological Risk Assessments to Address Pathogens in Stormwater Runoff [High Priority] ^a	Chloride Reduction Programs [High Priority] ^a	Fertilizer Management and Information and Education [Medium Priority] ^a	Residential Roof Drain Disconnection [Medium Priority] ^a	Beach and Riparian Debris and Litter Control [High Priority] ^a	Pet Litter Management [Medium Priority] ^a	Bacteria and Pathogen Research and Implementation Projects [High Priority] ^a
Milwaukee County (continued)									
City of Oak Creek	X	X	--	X	X	X	X	X	--
City of St. Francis	X	X	--	X	X	X	X	X	--
City of South Milwaukee	X	X	--	X	X	X	X	X	--
City of Wauwatosa	X	X	--	X	X	X	X	X	--
City of West Allis	X	X	--	X	X	X	X	X	--
Village of Bayside	X	X	--	X	X	X	X	X	--
Village of Brown Deer	X	X	--	X	X	X	X	X	--
Village of Fox Point	X	X	--	X	X	X	X	X	--
Village of Greendale	X	X	--	X	X	X	X	X	--
Village of Hales Corners	X	X	--	X	X	X	X	X	--
Village of River Hills	X	X	--	X	X	X	X	X	--
Village of Shorewood	X	X	--	X	X	X	X	X	--
Village of West Milwaukee	X	X	--	X	X	X	X	X	--
Village of Whitefish Bay	X	X	--	X	X	X	X	X	--
Ozaukee County	X	X	--	X	X	--	X	X	--
City of Cedarburg	X	X	--	X	X	X	X	X	--
City of Mequon	X	X	--	X	X	X	X	X	--
City of Port Washington	X	X	--	X	X	X	X	X	--
Village of Fredonia	X	X	--	X	--	X	X	X	--
Village of Grafton	X	X	--	X	X	X	X	X	--
Village of Newburg	X	X	--	X		X	X	X	--
Village of Saukville	X	X	--	X	X	X	X	X	--
Village of Thiensville	X	X	--	X	X	X	X	X	--
Town of Cedarburg	X	--	--	--	--	--	--	--	--
Town of Fredonia	X	--	--	--	X	--	X	--	--
Town of Fredonia–Spring Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	--	--	--	--	X	--	X	--	--
Town of Grafton	X	--	--	--	X	--	--	--	--
Town of Port Washington	X	--	--	--	--	--	X	--	--

Table XI-4 (continued)

Urban Nonpoint Source Management Agency	Implementation of Construction Erosion Control Requirements and Nonagricultural (Urban) Performance Standards of Chapter NR 151 [High Priority] ^a	Programs to Detect Illicit Discharges to Storm Sewer Systems and Control Urban-Sourced Pathogens [High Priority] ^a	Human Health and Ecological Risk Assessments to Address Pathogens in Stormwater Runoff [High Priority] ^a	Chloride Reduction Programs [High Priority] ^a	Fertilizer Management and Information and Education [Medium Priority] ^a	Residential Roof Drain Disconnection [Medium Priority] ^a	Beach and Riparian Debris and Litter Control [High Priority] ^a	Pet Litter Management [Medium Priority] ^a	Bacteria and Pathogen Research and Implementation Projects [High Priority] ^a
Ozaukee County (continued)									
Town of Saukville.....	X	--	--	--	X	--	--	--	--
Town of Saukville–Mud Lake Protection and Rehabilitation District (P&RD) or Lake Association.....	--	--	--	--	X	--	X	--	--
Racine County	X	X	--	X	X	--	X	X	--
City of Racine.....	X	X	--	X	X	X	X	X	X
Village of Caledonia.....	X	X	--	X	X	X	X	X	--
Village of Mt. Pleasant.....	X	X	--	X	X	X	X	X	--
Village of North Bay.....	X	X	--	X	--	X	X	X	--
Village of Sturtevant.....	X	X	--	X	X	X	X	X	--
Village of Union Grove.....	X	X	--	X		X	X	X	--
Village of Wind Point.....	X	X	--	X	X	X	X	X	--
Town of Dover.....	X	--	--	--	--	--	--	--	--
Town of Norway.....	X	--	--	--	--	--	--	--	--
Town of Raymond.....	X	--	--	--	--	--	--	--	--
Town of Yorkville.....	X	--	--	--	--	--	--	--	--
Sheboygan County^b	X	X	--	X	X	--	X	X	--
Village of Adell.....	X	X	--	X		X	X	X	--
Village of Cascade.....	X	X	--	X		X	X	X	--
Village of Random Lake.....	X	X	--	X	X	X	X	X	--
Village of Random Lake–Random Lake Association, Inc.....	--	--	--	--	X	--	X	--	--
Town of Greenbush.....	X	--	--	--	--	--	--	--	--
Town of Holland.....	X	--	--	--	--	--	--	--	--
Town of Lyndon.....	X	--	--	--	X	--	--	--	--
Town of Lyndon–Lake Ellen Sanitary District No. 1.....	--	--	--	--	X	--	X	--	--
Town of Mitchell.....	X	--	--	--	--	--	--	--	--
Town of Scott.....	X	--	--	--	--	--	--	--	--
Town of Sherman.....	X	--	--	--	--	--	--	--	--

Table XI-4 (continued)

Urban Nonpoint Source Management Agency	Implementation of Construction Erosion Control Requirements and Nonagricultural (Urban) Performance Standards of Chapter NR 151 [High Priority] ^a	Programs to Detect Illicit Discharges to Storm Sewer Systems and Control Urban-Sourced Pathogens [High Priority] ^a	Human Health and Ecological Risk Assessments to Address Pathogens in Stormwater Runoff [High Priority] ^a	Chloride Reduction Programs [High Priority] ^a	Fertilizer Management and Information and Education [Medium Priority] ^a	Residential Roof Drain Disconnection [Medium Priority] ^a	Beach and Riparian Debris and Litter Control [High Priority] ^a	Pet Litter Management [Medium Priority] ^a	Bacteria and Pathogen Research and Implementation Projects [High Priority] ^a
Washington County	X	X	--	X	X	--	X	X	--
City of West Bend	X	X	--	X	X	X	X	X	--
City of West Bend–Barton Pond Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	--	--	--	--	X	--	X	--	--
Village of Germantown.....	X	X	--	X	X	X	X	X	--
Village of Jackson.....	X	X	--	X	--	X	X	X	--
Village of Kewaskum.....	X	X	--	X	--	X	X	X	--
Village of Newburg.....	X	X	--	X	--	X	X	X	--
Town of Addison	X	--	--	--	--	--	--	--	--
Town of Barton	X	--	--	--	X	--	X	--	--
Town of Barton–Smith Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	--	--	--	--	X	--	X	--	--
Town of Barton–Wallace Lake Sanitary District	--	--	--	--	X	--	X	--	--
Town of Farmington.....	X	--	--	--	X	--	X	--	--
Town of Farmington–Lake Twelve Protection and Rehabilitation District (P&RD) or Lake Association ^c	--	--	--	--	X	--	X	--	--
Town of Farmington–Green Lake Property Owners of Washington County.....	--	--	--	--	X	--	X	--	--
Town of Germantown.....	X	--	--	--	--	--	--	--	--
Town of Jackson.....	X	--	--	--	--	--	--	--	--
Town of Kewaskum	X	--	--	--	--	--	--	--	--
Town of Polk.....	X	--	--	--	--	--	--	--	--
Town of Richfield	X	--	--	--	--	--	--	--	--
Town of Trenton.....	X	--	--	--	--	--	--	--	--
Town of Wayne.....	X	--	--	--	--	--	--	--	--
Town of West Bend	X	--	--	--	X	--	X	--	--
Town of West Bend–Big Cedar Lake Protection and Rehabilitation District.....	--	--	--	--	X	--	X	--	--
Town of West Bend–Little Cedar Lake Protection and Rehabilitation District.....	--	--	--	--	--	--	X	--	--

Table XI-4 (continued)

Urban Nonpoint Source Management Agency	Implementation of Construction Erosion Control Requirements and Nonagricultural (Urban) Performance Standards of Chapter NR 151 [High Priority] ^a	Programs to Detect Illicit Discharges to Storm Sewer Systems and Control Urban-Sourced Pathogens [High Priority] ^a	Human Health and Ecological Risk Assessments to Address Pathogens in Stormwater Runoff [High Priority] ^a	Chloride Reduction Programs [High Priority] ^a	Fertilizer Management and Information and Education [Medium Priority] ^a	Residential Roof Drain Disconnection [Medium Priority] ^a	Beach and Riparian Debris and Litter Control [High Priority] ^a	Pet Litter Management [Medium Priority] ^a	Bacteria and Pathogen Research and Implementation Projects [High Priority] ^a
Washington County (continued)									
Town of West Bend–Silver Lake Sanitary District and Silver Lake Protection and Rehabilitation District.....	--	--	--	--	X	--	X	--	--
Town of West Bend –Lucas Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	--	--	--	--	X	--	X	--	--
Waukesha County	X	X	--	X	X	--	X	X	--
City of Brookfield.....	X	X	--	X	X	X	X	X	--
City of Muskego	X	X	--	X	X	X	X	X	--
City of New Berlin	X	X	--	X	X	X	X	X	--
Village of Butler.....	X	X	--	X	X	X	X	X	--
Village of Elm Grove	X	X	--	X	X	X	X	X	--
Village of Menomonee Falls.....	X	X	--	X	X	X	X	X	--
Town of Brookfield	X	--	--	X	X	X	X	--	--
Town of Lisbon	X	--	--	X	X	X	X	--	--
State of Wisconsin									
Department of Commerce.....	X	--	--	--	--	--	--	--	--
Department of Natural Resources	X	--	X	X	X	--	--	--	X
Department of Transportation	X	--	--	X	--	--	--	--	--
University of Wisconsin-Extension	--	--	--	--	X	--	X	X	--
Federal Agencies									
U.S. Department of the Interior, Geological Survey	--	--	X	--	--	--	--	--	X
U.S. Environmental Protection Agency	--	--	--	--	--	--	--	--	X
U.S. Department of Transportation	--	--	--	X	--	--	--	--	--
Nongovernmental Organizations									
Keep Greater Milwaukee Beautiful, Inc.....	--	--	--	--	--	--	X	--	--
Friends of Milwaukee’s Rivers	--	--	--	--	--	--	X	--	--

^aGeneralized priorities are assigned by recommendation. For certain municipalities or agencies, the priority for implementing a given recommendation may be higher or lower than the assigned priority, depending on specific circumstances and changed conditions over time.

^bFor those municipalities located outside the Southeastern Wisconsin Region, the management agency designation is advisory only.

^cThis lake district or association does not currently exist, but is recommended to be established.

Source: SEWRPC.

Exhibit F

Table XI-5

GOVERNMENTAL MANAGEMENT AGENCY DESIGNATIONS AND SELECTED RESPONSIBILITIES AND PRIORITIZATION FOR THE INSTREAM WATER QUALITY MEASURES SUBELEMENT OF THE RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS^a

Management Agency	Stream Rehabilitation [Medium Priority] ^b	Conduct Engineering Studies Related to Possible Renovation of the Kinnickinnic River Flushing Station [Medium Priority] ^b	Require Preparation of Dam Abandonment and Associated Riverine Restoration Plans [Low Priority] ^b	Implement Recommendations Related to Culverts, Bridges, Drop Structures, and Channelized Streams [Medium Priority] ^b	Restoration and Remediation of Contaminated Sediment Sites and Expansion of the Milwaukee Harbor Estuary Area of Concern [High Priority] ^b	Fisheries Protection and Enhancement [Medium Priority] ^b	Navigational Dredging	Dredged Material Disposal	Consider Revisions to Water Use Objectives
Dodge County	--	--	--	X	--	X	--	--	--
Village of Lomira	--	--	--	X	--	X	--	--	--
Town of Lomira	--	--	--	X	--	X	--	--	--
Fond du Lac County	--	--	--	X	--	X	--	--	--
Village of Campbellsport	--	--	--	X	--	X	--	--	--
Village of Eden.....	--	--	--	X	--	X	--	--	--
Town of Ashford.....	--	--	--	X	--	X	--	--	--
Town of Auburn	--	--	--	X	--	X	--	--	--
Town of Byron.....	--	--	--	X	--	X	--	--	--
Town of Eden.....	--	--	--	X	--	X	--	--	--
Town of Empire.....	--	--	--	X	--	X	--	--	--
Town of Forest.....	--	--	--	X	--	X	--	--	--
Town of Osceola.....	--	--	--	X	--	X	--	--	--
Kenosha County	--	--	--	X	--	X	--	--	--
Town of Paris.....	--	--	--	X	--	X	--	--	--
Milwaukee County	X	--	--	X	--	X	--	--	--
Milwaukee Metropolitan Sewerage District	X	X	--	X	--	X	--	--	--
City of Cudahy	--	--	--	X	--	X	--	--	--
City of Franklin.....	--	--	--	X	--	X	--	--	--
City of Glendale	--	--	--	X	--	X	--	--	--
City of Greenfield	--	--	--	X	--	X	--	--	--
City of Milwaukee.....	--	--	--	X	--	X	--	--	--
Port of Milwaukee	--	--	--	--	--	--	X	X	--
City of Oak Creek	--	--	--	X	--	X	--	--	--
City of St. Francis	--	--	--	X	--	X	--	--	--
City of South Milwaukee	--	--	--	X	--	X	--	--	--
City of Wauwatosa	--	--	--	X	--	X	--	--	--
City of West Allis	--	--	--	X	--	X	--	--	--
Village of Bayside	--	--	--	X	--	X	--	--	--
Village of Brown Deer	--	--	--	X	--	X	--	--	--

Table XI-5 (continued)

Management Agency	Stream Rehabilitation [Medium Priority] ^b	Conduct Engineering Studies Related to Possible Renovation of the Kinnickinnic River Flushing Station [Medium Priority] ^b	Require Preparation of Dam Abandonment and Associated Riverine Restoration Plans [Low Priority] ^b	Implement Recommendations Related to Culverts, Bridges, Drop Structures, and Channelized Streams [Medium Priority] ^b	Restoration and Remediation of Contaminated Sediment Sites and Expansion of the Milwaukee Harbor Estuary Area of Concern [High Priority] ^d	Fisheries Protection and Enhancement [Medium Priority] ^d	Navigational Dredging	Dredged Material Disposal	Consider Revisions to Water Use Objectives
Milwaukee County (continued)									
Village of Fox Point.....	--	--	--	X	--	X	--	--	--
Village of Greendale.....	--	--	--	X	--	X	--	--	--
Village of Hales Corners.....	--	--	--	X	--	X	--	--	--
Village of River Hills.....	--	--	--	X	--	X	--	--	--
Village of Shorewood.....	--	--	--	X	--	X	--	--	--
Village of West Milwaukee.....	--	--	--	X	--	X	--	--	--
Village of Whitefish Bay.....	--	--	--	X	--	X	--	--	--
Ozaukee County	--	--	--	X	--	X	--	--	--
City of Cedarburg.....	--	--	--	X	--	X	--	--	--
City of Mequon.....	--	--	--	X	--	X	--	--	--
City of Port Washington.....	--	--	--	X	--	X	--	--	--
Village of Fredonia.....	--	--	--	X	--	X	--	--	--
Village of Grafton.....	--	--	--	X	--	X	--	--	--
Village of Newburg.....	--	--	--	X	--	X	--	--	--
Village of Saukville.....	--	--	--	X	--	X	--	--	--
Village of Thiensville.....	--	--	--	X	--	X	--	--	--
Town of Cedarburg.....	--	--	--	X	--	X	--	--	--
Town of Fredonia.....	--	--	--	X	--	X	--	--	--
Town of Grafton.....	--	--	--	X	--	X	--	--	--
Town of Port Washington.....	--	--	--	X	--	X	--	--	--
Town of Saukville.....	--	--	--	X	--	X	--	--	--
Racine County	--	--	--	X	--	X	--	--	--
City of Racine.....	--	--	--	X	--	X	--	--	--
Village of Caledonia.....	--	--	--	X	--	X	--	--	--
Village of Mt. Pleasant.....	--	--	--	X	--	X	--	--	--
Village of North Bay.....	--	--	--	X	--	X	--	--	--
Village of Sturtevant.....	--	--	--	X	--	X	--	--	--
Village of Union Grove.....	--	--	--	X	--	X	--	--	--
Village of Wind Point.....	--	--	--	X	--	X	--	--	--
Town of Dover.....	--	--	--	X	--	X	--	--	--
Town of Norway.....	--	--	--	X	--	X	--	--	--

Table XI-5 (continued)

Management Agency	Stream Rehabilitation [Medium Priority] ^b	Conduct Engineering Studies Related to Possible Renovation of the Kinnickinnic River Flushing Station [Medium Priority] ^b	Require Preparation of Dam Abandonment and Associated Riverine Restoration Plans [Low Priority] ^b	Implement Recommendations Related to Culverts, Bridges, Drop Structures, and Channelized Streams [Medium Priority] ^b	Restoration and Remediation of Contaminated Sediment Sites and Expansion of the Milwaukee Harbor Estuary Area of Concern [High Priority] ^d	Fisheries Protection and Enhancement [Medium Priority] ^d	Navigational Dredging	Dredged Material Disposal	Consider Revisions to Water Use Objectives
Racine County (continued)									
Town of Raymond.....	--	--	--	X	--	X	--	--	--
Town of Yorkville	--	--	--	X	--	X	--	--	--
Sheboygan County	--	--	--	X	--	X	--	--	--
Village of Adell	--	--	--	X	--	X	--	--	--
Village of Cascade.....	--	--	--	X	--	X	--	--	--
Village of Random Lake.....	--	--	--	X	--	X	--	--	--
Town of Greenbush	--	--	--	X	--	X	--	--	--
Town of Holland.....	--	--	--	X	--	X	--	--	--
Town of Lyndon	--	--	--	X	--	X	--	--	--
Town of Mitchell.....	--	--	--	X	--	X	--	--	--
Town of Scott.....	--	--	--	X	--	X	--	--	--
Town of Sherman	--	--	--	X	--	X	--	--	--
Washington County	--	--	--	X	--	X	--	--	--
City of West Bend	--	--	--	X	--	X	--	--	--
Village of Germantown.....	--	--	--	X	--	X	--	--	--
Village of Jackson.....	--	--	--	X	--	X	--	--	--
Village of Kewaskum.....	--	--	--	X	--	X	--	--	--
Village of Newburg.....	--	--	--	X	--	X	--	--	--
Town of Addison	--	--	--	X	--	X	--	--	--
Town of Barton	--	--	--	X	--	X	--	--	--
Town of Farmington.....	--	--	--	X	--	X	--	--	--
Town of Germantown.....	--	--	--	X	--	X	--	--	--
Town of Jackson.....	--	--	--	X	--	X	--	--	--
Town of Kewaskum	--	--	--	X	--	X	--	--	--
Town of Polk.....	--	--	--	X	--	X	--	--	--
Town of Richfield	--	--	--	X	--	X	--	--	--
Town of Trenton.....	--	--	--	X	--	X	--	--	--
Town of Wayne.....	--	--	--	X	--	X	--	--	--
Town of West Bend	--	--	--	X	--	X	--	--	--

Table XI-5 (continued)

Management Agency	Stream Rehabilitation [Medium Priority] ^b	Conduct Engineering Studies Related to Possible Renovation of the Kinnickinnic River Flushing Station [Medium Priority] ^b	Require Preparation of Dam Abandonment and Associated Riverine Restoration Plans [Low Priority] ^b	Implement Recommendations Related to Culverts, Bridges, Drop Structures, and Channelized Streams [Medium Priority] ^b	Restoration and Remediation of Contaminated Sediment Sites and Expansion of the Milwaukee Harbor Estuary Area of Concern [High Priority] ^b	Fisheries Protection and Enhancement [Medium Priority] ^b	Navigational Dredging	Dredged Material Disposal	Consider Revisions to Water Use Objectives
Waukesha County	--	--	--	X	--	X	--	--	--
City of Brookfield.....	--	--	--	X	--	X	--	--	--
City of Muskego	--	--	--	X	--	X	--	--	--
City of New Berlin	--	--	--	X	--	X	--	--	--
Village of Butler.....	--	--	--	X	--	X	--	--	--
Village of Elm Grove	--	--	--	X	--	X	--	--	--
Village of Menomonee Falls.....	--	--	--	X	--	X	--	--	--
Town of Brookfield	--	--	--	X	--	X	--	--	--
Town of Lisbon	--	--	--	X	--	X	--	--	--
State of Wisconsin									
Department of Natural Resources	--	--	X	X	X	X	--	--	X
Department of Transportation	--	--	--	X	--	X	--	--	--
Federal Agencies									
U.S. Department of the Interior, Fish & Wildlife Service.....	--	--	--	--	--	X	--	--	--
U.S. Environmental Protection Agency	--	--	--	--	X		--	--	--
U.S. Department of Transportation	--	--	--	X	--	X	--	--	--
U.S. Army Corps of Engineers.....	--	--	X	X	--	X	X	X	--

^aDesignation of management agencies is not required under the Federal Clean Water Act. Thus, these designations are advisory only.

^bGeneralized priorities are assigned by recommendation. For certain municipalities or agencies, the priority for implementing a given recommendation may be higher or lower than the assigned priority, depending on specific circumstances and changed conditions over time.

Source: SEWRPC.

Exhibit G

Table XI-5a

GOVERNMENTAL MANAGEMENT AGENCY DESIGNATIONS AND SELECTED RESPONSIBILITIES AND PRIORITIZATION FOR THE INLAND LAKE WATER QUALITY MANAGEMENT SUBELEMENT OF THE RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS^a

Inland Lake Management Agency	Establish a Lake Protection and Rehabilitation District or a Lake Association [High Priority] ^b	Preparation or Updating of Lake Management Plans [High Priority] ^b	Consider Preparation of Detailed Plans for Milwaukee County Lagoons and Implement Recommendations in Milwaukee County Lagoon Management Plan [High Priority] ^b	Implement Washington County Lake and Stream Classification Plan [High Priority] ^b	Implement Waukesha County Lake and Stream Classification Plan [High Priority] ^b	Abate Nonpoint Source Pollution According to Plan Recommendations [High Priority] ^b	Implement a Community-Based Informational Program [High Priority] ^b	Review and Evaluate Proposed Land Use Changes for Lake-Related Impacts [High Priority] ^b
Dodge County	--	--	--	--	--	--	--	--
None	--	--	--	--	--	--	--	--
Fond du Lac County	--	--	--	--	--	X	--	X
Town of Auburn	--	--	--	--	--	--	--	X
Town of Auburn–Forest Lake Improvement Association	--	X	--	--	--	X	X	--
Town of Osceola	--	--	--	--	--	X	--	X
Town of Osceola–Mud Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	X	X	--	--	--	X	X	--
Town of Osceola–Kettle Moraine Lake Association	--	X	--	--	--	X	X	--
Town of Osceola–Long Lake Fishing Club, Inc.....	--	X	--	--	--	X	X	--
Kenosha County	--	--	--	--	--	--	--	--
None	--	--	--	--	--	--	--	--
Milwaukee County	--	--	X	--	--	--	--	--
None	--	--	--	--	--	--	--	--
Ozaukee County	--	--	--	--	--	--	--	X
Town of Fredonia.....	--	--	--	--	--	X	--	X
Town of Fredonia–Spring Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	X	X	--	--	--	X	X	--
Town of Saukville.....	--	--	--	--	--	X	--	X
Town of Saukville–Mud Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	X	X	--	--	--	X	X	--
Racine County	--	--	--	--	--	--	--	--
None	--	--	--	--	--	--	--	--

Table XI-5a (continued)

Inland Lake Management Agency	Establish a Lake Protection and Rehabilitation District or a Lake Association [High Priority] ^b	Preparation or Updating of Lake Management Plans [High Priority] ^b	Consider Preparation of Detailed Plans for Milwaukee County Lagoons and Implement Recommendations in Milwaukee County Lagoon Management Plan [High Priority] ^b	Implement Washington County Lake and Stream Classification Plan [High Priority] ^b	Implement Waukesha County Lake and Stream Classification Plan [High Priority] ^b	Abate Nonpoint Source Pollution According to Plan Recommendations [High Priority] ^b	Implement a Community-Based Informational Program [High Priority] ^b	Review and Evaluate Proposed Land Use Changes for Lake-Related Impacts [High Priority] ^b
Sheboygan County	--	--	--	--	--	--	--	X
Village of Random Lake	--	--	--	--	--	--	--	X
Village of Random Lake–Random Lake Association, Inc.	--	X	--	--	--	X	X	--
Town of Lyndon	--	--	--	--	--	--	--	X
Town of Lyndon–Lake Ellen Sanitary District No. 1	--	X	--	--	--	X	X	--
Washington County	--	--	--	X	--	--	--	X
City of West Bend	--	--	--	--	--	X	--	X
City of West Bend–Barton Pond Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	X	X	--	--	--	X	X	--
Town of Barton	--	--	--	--	--	X	--	X
Town of Barton–Smith Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	X	X	--	--	--	X	X	--
Town of Barton–Wallace Lake Sanitary District	--	X	--	--	--	X	X	--
Town of Farmington	--	--	--	--	--	X	--	X
Town of Farmington–Lake Twelve Protection and Rehabilitation District (P&RD) or Lake Association ^c	X	X	--	--	--	X	X	--
Town of Farmington–Green Lake Property Owners of Washington County	--	X	--	--	--	X	X	--
Town of West Bend	--	--	--	--	--	X	--	X
Town of West Bend–Big Cedar Lake Protection and Rehabilitation District	--	X	--	--	--	X	X	--
Town of West Bend–Little Cedar Lake Protection and Rehabilitation District	--	X	--	--	--	X	X	--
Town of West Bend–Silver Lake Sanitary District and Silver Lake Protection and Rehabilitation District	X	X	--	--	--	X	X	--
Town of West Bend–Lucas Lake Protection and Rehabilitation District (P&RD) or Lake Association ^c	X	X	--	--	--	X	X	--
Waukesha County	--	--	--	--	X	--	--	--
None	--	--	--	--	--	--	--	--
State of Wisconsin								--
Department of Natural Resources ^d	--	X	--	X	X	X	X	--
University of Wisconsin–Extension	X	--	--	--	--	--	X	--

Table XI-5a (continued)

^aDesignation of management agencies is not required under the Federal Clean Water Act. Thus, these designations are advisory only.

^bGeneralized priorities are assigned by recommendation. For certain municipalities or agencies, the priority for implementing a given recommendation may be higher or lower than the assigned priority, depending on specific circumstances and changed conditions over time.

^cThis lake district or association does not currently exist, but is recommended to be established.

^dIt is recommended that the WDNR develop lake management plans for Auburn, Crooked, and Mauthe Lakes, which are located in the Northern Unit of the Kettle Moraine State Forest.

Source: SEWRPC.

Exhibit H

Table XI-6

GOVERNMENTAL MANAGEMENT AGENCY DESIGNATIONS AND SELECTED RESPONSIBILITIES AND PRIORITIZATION FOR THE AUXILIARY WATER QUALITY MANAGEMENT PLAN SUBELEMENT OF THE RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS^a

Management Agency	Maintain and Expand Public Health-Related Monitoring at Beaches [High Priority] ^b	Identify Local Sources of Contamination by Conducting Sanitary Surveys at Beaches with High Bacteria Counts ^c [High Priority] ^b	Implement Remedies at Beaches with High Bacteria Counts ^d [High Priority] ^b	Waterfowl Control Where a Nuisance or Health Hazard [High Priority] ^b	Implement and Refine the Lakewide Management Plan for Lake Michigan [Medium Priority] ^b	Household Hazardous Waste Collection Programs [High Priority] ^b	Pharmaceutical and Personal Care Product Collection Programs [High Priority] ^b	Information and Education Programs Regarding Exotic Invasive Species [Medium Priority] ^b	Develop a Policy Regarding Water Temperatures and Thermal Discharges into Waterbodies [Medium Priority] ^b	Support and Continue Ongoing Water Quality Monitoring Programs [High Priority] ^b
Dodge County	--	--	--	--	--	X	X	--	--	--
None	--	--	--	--	--	--	--	--	--	--
Fond du Lac County	X	X	--	--	--	X	X	--	--	--
Town of Auburn–Forest Lake Improvement Association	--	--	X	X	--	--	--	--	--	--
Town of Osceola–Mud Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	X	X	--	--	--	--	--	--
Town of Osceola–Kettle Moraine Lake Association	--	--	X	X	--	--	--	--	--	--
Town of Osceola–Long Lake Fishing Club, Inc.....	--	--	X	X	--	--	--	--	--	--
Kenosha County	--	--	--	--	--	X	X	--	--	--
None	--	--	--	--	--	--	--	--	--	--
Milwaukee County	--	--	X	X	--	--	--	--	--	X
Milwaukee Metropolitan Sewerage District	--	--	--	--	--	X	X	--	--	X
City of Cudahy	X	X	--	--	--	--	--	--	--	--
City of Milwaukee.....	X	X	X	--	--	--	--	--	--	--
City of South Milwaukee	X	X	X	--	--	--	--	--	--	--
Village of Fox Point.....	--	--	X	--	--	--	--	--	--	--
North Shore Health Department ^f	X	X	--	--	--	--	--	--	--	--
Village of Shorewood	--	--	--	X	--	--	--	--	--	--
Village of Whitefish Bay	--	--	X	X	--	--	--	--	--	--
Shorewood-Whitefish Bay Health Department	X	X	--	--	--	--	--	--	--	--
Ozaukee County	X	X	X	X	--	X	X	--	--	--
Town of Fredonia–Spring Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	X	X	--	--	--	--	--	--
Town of Saukville–Mud Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	X	X	--	--	--	--	--	--

Table XI-6 (continued)

Management Agency	Maintain and Expand Public Health-Related Monitoring at Beaches [High Priority] ^b	Identify Local Sources of Contamination by Conducting Sanitary Surveys at Beaches with High Bacteria Counts ^c [High Priority] ^b	Implement Remedies at Beaches with High Bacteria Counts ^d [High Priority] ^b	Waterfowl Control Where a Nuisance or Health Hazard ^d [High Priority] ^b	Implement and Refine the Lakewide Management Plan for Lake Michigan [Medium Priority] ^d	Household Hazardous Waste Collection Programs [High Priority] ^b	Pharmaceutical and Personal Care Product Collection Programs [High Priority] ^b	Information and Education Programs Regarding Exotic Invasive Species [Medium Priority] ^d	Develop a Policy Regarding Water Temperatures and Thermal Discharges into Waterbodies [Medium Priority] ^d	Support and Continue Ongoing Water Quality Monitoring Programs [High Priority] ^b
Racine County	--	--	--	--	--	X	X	--	--	--
City of Racine	X	X	X	X	--	--	--	--	--	X
Village of North Bay	X	X	X	X	--	--	--	--	--	--
Village of Wind Point.....	X	X	X	X	--	--	--	--	--	--
Sheboygan County	--	--	--	--	--	X	X	--	--	--
Village of Random Lake	X	X	--	--	--	--	--	--	--	--
Village of Random Lake–Random Lake Association, Inc.....	--	--	X	X	--	--	--	--	--	--
Town of Lyndon–Lake Ellen Sanitary District No. 1	X	X	X	X	--	--	--	--	--	--
Washington County	X	X	--	--	--	X	X	--	--	--
City of West Bend	X	X	--	--	--	--	--	--	--	--
City of West Bend–Barton Pond Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	X	X	--	--	--	--	--	--
Town of Barton–Smith Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	X	X	--	--	--	--	--	--
Town of Barton–Wallace Lake Sanitary District	X	X	X	X	--	--	--	--	--	--
Town of Farmington–Lake Twelve Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	X	X	--	--	--	--	--	--
Town of Farmington–Green Lake Property Owners of Washington County.....	--	--	X	X	--	--	--	--	--	--
Town of West Bend–Big Cedar Lake Protection and Rehabilitation District.....	--	--	X	X	--	--	--	--	--	--
Town of West Bend–Little Cedar Lake Protection and Rehabilitation District.....	--	--	X	X	--	--	--	--	--	--
Town of West Bend–Silver Lake Sanitary District and Silver Lake Protection and Rehabilitation District.....	--	--	X	X	--	--	--	--	--	--
Town of West Bend–Lucas Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	X	X	--	--	--	--	--	--
Waukesha County	--	--	--	--	--	--	X	--	--	X
None	--	--	--	--	--	--	--	--	--	--
Regional Agency	--	--	--	--	--	--	--	--	--	--
Southeastern Wisconsin Regional Planning Commission.....	--	--	--	--	--	--	--	--	--	--

Table XI-6 (continued)

Management Agency	Maintain and Expand Public Health-Related Monitoring at Beaches [High Priority] ^b	Identify Local Sources of Contamination by Conducting Sanitary Surveys at Beaches with High Bacteria Counts ^c [High Priority] ^b	Implement Remedies at Beaches with High Bacteria Counts ^d [High Priority] ^b	Waterfowl Control Where a Nuisance or Health Hazard ^d [High Priority] ^b	Implement and Refine the Lakewide Management Plan for Lake Michigan [Medium Priority] ^b	Household Hazardous Waste Collection Programs [High Priority] ^b	Pharmaceutical and Personal Care Product Collection Programs [High Priority] ^b	Information and Education Programs Regarding Exotic Invasive Species [Medium Priority] ^b	Develop a Policy Regarding Water Temperatures and Thermal Discharges into Waterbodies [Medium Priority] ^b	Support and Continue Ongoing Water Quality Monitoring Programs [High Priority] ^b
State of Wisconsin										
Department of Administration, Coastal Zone Management Program.....	--	--	--	--	X	--	--	--	--	--
Department of Natural Resources	X	X	X	--	X	--	--	X	X	X
University of Wisconsin-Extension.....	--	--	--	--	--	--	--	X	--	--
University of Wisconsin Sea Grant Program.....	--	--	--	--	X	--	--	X	--	--
Federal Agencies										
U.S. Department of the Interior, Fish & Wildlife Service.....	--	--	--	X	--	--	--	--	--	--
U.S. Department of the Interior, Geological Survey	--	--	--	--	--	--	--	--	--	X
U.S. Environmental Protection Agency.....	--	--	--	--	--	--	--	--	--	--
National Oceanic and Atmospheric Administration.....	--	--	--	--	--	--	--	--	--	--
Nongovernmental Organizations	--	--	--	--	--	--	--	--	--	--
Riveredge Nature Center.....	--	--	--	--	--	--	--	--	--	--
Friends of Milwaukee's Rivers	--	--	--	--	--	--	--	--	--	--

Management Agency	Expand USGS Stream Gage Network to Include the Nine Short-Term Sites Established for the Regional Water Quality Management Plan Update [High Priority] ^b	Extend Operation of USGS Gages on Wilson Park Creek (3 Gages), Holmes Avenue Creek (1 Gage), Mitchell Field Drainage Ditch (1 Gage), and the Little Menomonee River (1 Gage) [High Priority] ^b	Establish and Maintain Long-Term Fisheries, Macroinvertebrate, and Habitat Monitoring Stations in Streams [Medium Priority] ^b	Continue Consolidation of Water Quality Monitoring Data and Adopt Common Quality Assurance and Control Procedures Along with Standardized Sampling Protocols [High Priority] ^b	Conduct Aquatic Plant Habitat and Fish Survey Assessments in Inland Lakes [Medium Priority] ^b	Establish Long-Term Trend Inland Lake Water Quality Monitoring Stations [Medium Priority] ^b	Continue to Monitor and Document the Occurrence of Exotic Invasive Species [Medium Priority] ^b	Maintain the HSPF, FFS, Streamlined MOUSE, and MACRO Computer Models Developed Under the MMSD 2020 Facilities Plan [Medium Priority] ^b	Maintain the LSPC, ECOMSED, and RCA Computer Models Developed Under the RWQMPSU and the MMSD 2020 Facilities Plan [Medium Priority] ^b
Dodge County	--	--	--	--	--	--	--	--	--
None	--	--	--	--	--	--	--	--	--
Fond du Lac County	--	--	--	--	--	--	--	--	--
Town of Auburn–Forest Lake Improvement Association	--	--	--	--	X	X	--	--	--
Town of Osceola–Mud Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	--	--	X	X	--	--	--

Table XI-6 (continued)

Management Agency	Expand USGS Stream Gage Network to Include the Nine Short-Term Sites Established for the Regional Water Quality Management Plan Update [High Priority]b	Extend Operation of USGS Gages on Wilson Park Creek (3 Gages), Holmes Avenue Creek (1 Gage), Mitchell Field Drainage Ditch (1 Gage), and the Little Menomonee River (1 Gage) [High Priority]b	Establish and Maintain Long-Term Fisheries, Macroinvertebrate, and Habitat Monitoring Stations in Streams [Medium Priority]b	Continue Consolidation of Water Quality Monitoring Data and Adopt Common Quality Assurance and Control Procedures Along with Standardized Sampling Protocols [High Priority]b	Conduct Aquatic Plant Habitat and Fish Survey Assessments in Inland Lakes [Medium Priority]b	Establish Long-Term Trend Inland Lake Water Quality Monitoring Stations [Medium Priority]b	Continue to Monitor and Document the Occurrence of Exotic Invasive Species [Medium Priority]b	Maintain the HSPF, FFS, Streamlined MOUSE, and MACRO Computer Models Developed Under the MMSD 2020 Facilities Plan [Medium Priority]b	Maintain the LSPC, ECOMSED, and RCA Computer Models Developed Under the RWQMPU and the MMSD 2020 Facilities Plan [Medium Priority]b
Fond du Lac County (continued)									
Town of Osceola–Kettle Moraine Lake Association	--	--	--	--	X	X	--	--	--
Town of Osceola–Long Lake Fishing Club, Inc.	--	--	--	--	X	X	--	--	--
Kenosha County	--	--	--	--	--	--	--	--	--
None	--	--	--	--	--	--	--	--	--
Milwaukee County	--	X	--	--	--	--	--	--	--
Milwaukee Metropolitan Sewerage District	--	X	X	X	--	--	--	X	--
City of Cudahy	--	--	--	--	--	--	--	--	--
City of Milwaukee	--	--	--	--	--	--	--	--	--
City of South Milwaukee	--	--	--	--	--	--	--	--	--
Village of Fox Point	--	--	--	--	--	--	--	--	--
North Shore Health Department ^f	--	--	--	--	--	--	--	--	--
Village of Shorewood	--	--	--	--	--	--	--	--	--
Village of Whitefish Bay	--	--	--	--	--	--	--	--	--
Shorewood-Whitefish Bay Health Department	--	--	--	--	--	--	--	--	--
Ozaukee County	--	--	--	--	--	--	--	--	--
Town of Fredonia–Spring Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	--	--	X	X	--	--	--
Town of Saukville–Mud Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	--	--	X	X	--	--	--
Racine County	--	--	--	--	--	--	--	--	--
City of Racine	--	--	--	--	--	--	--	--	--
Village of North Bay	--	--	--	--	--	--	--	--	--
Village of Wind Point	--	--	--	--	--	--	--	--	--
Sheboygan County	--	--	--	--	--	--	--	--	--
Village of Random Lake	--	--	--	--	--	--	--	--	--
Village of Random Lake–Random Lake Association, Inc.	--	--	--	--	X	X	--	--	--
Town of Lyndon–Lake Ellen Sanitary District No. 1	--	--	--	--	X	X	--	--	--

Table XI-6 (continued)

Management Agency	Expand USGS Stream Gage Network to Include the Nine Short-Term Sites Established for the Regional Water Quality Management Plan Update [High Priority]b	Extend Operation of USGS Gages on Wilson Park Creek (3 Gages), Holmes Avenue Creek (1 Gage), Mitchell Field Drainage Ditch (1 Gage), and the Little Menomonee River (1 Gage) [High Priority]b	Establish and Maintain Long-Term Fisheries, Macroinvertebrate, and Habitat Monitoring Stations in Streams [Medium Priority]b	Continue Consolidation of Water Quality Monitoring Data and Adopt Common Quality Assurance and Control Procedures Along with Standardized Sampling Protocols [High Priority]b	Conduct Aquatic Plant Habitat and Fish Survey Assessments in Inland Lakes [Medium Priority]b	Establish Long-Term Trend Inland Lake Water Quality Monitoring Stations [Medium Priority]b	Continue to Monitor and Document the Occurrence of Exotic Invasive Species [Medium Priority]b	Maintain the HSPF, FFS, Streamlined MOUSE, and MACRO Computer Models Developed Under the MMSD 2020 Facilities Plan [Medium Priority]b	Maintain the LSPC, ECOMSED, and RCA Computer Models Developed Under the RWQMPU and the MMSD 2020 Facilities Plan [Medium Priority]b
Washington County	--	--	--	--	--	--	--	--	--
City of West Bend	--	--	--	--	--	--	--	--	--
City of West Bend–Barton Pond Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	--	--	X	X	--	--	--
Town of Barton–Smith Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	--	--	X	X	--	--	--
Town of Barton–Wallace Lake Sanitary District	--	--	--	--	X	X	--	--	--
Town of Farmington–Lake Twelve Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	--	--	X	X	--	--	--
Town of Farmington–Green Lake Property Owners of Washington County	--	--	--	--	X	X	--	--	--
Town of West Bend–Big Cedar Lake Protection and Rehabilitation District	--	--	--	--	X	X	--	--	--
Town of West Bend–Little Cedar Lake Protection and Rehabilitation District	--	--	--	--	X	X	--	--	--
Town of West Bend–Silver Lake Sanitary District and Silver Lake Protection and Rehabilitation District	--	--	--	--	X	X	--	--	--
Town of West Bend–Lucas Lake Protection and Rehabilitation District (P&RD) or Lake Association ^e	--	--	--	--	X	X	--	--	--
Waukesha County	--	--	--	--	--	--	--	--	--
None	--	--	--	--	--	--	--	--	--
Regional Agency	--	--	--	--	--	--	--	--	--
Southeastern Wisconsin Regional Planning Commission	--	--	--	--	--	--	--	--	X
State of Wisconsin									
Department of Administration, Coastal Zone Management Program	--	--	--	--	--	--	--	--	--
Department of Natural Resources	--	X	X	X	X	X	X	--	--
University of Wisconsin–Extension	--	--	--	X	--	--	--	--	--
University of Wisconsin Sea Grant Program	--	--	--	--	--	--	--	--	--

Table XI-6 (continued)

Management Agency	Expand USGS Stream Gage Network to Include the Nine Short-Term Sites Established for the Regional Water Quality Management Plan Update [High Priority] ^b	Extend Operation of USGS Gages on Wilson Park Creek (3 Gages), Holmes Avenue Creek (1 Gage), Mitchell Field Drainage Ditch (1 Gage), and the Little Menomonee River (1 Gage) [High Priority] ^b	Establish and Maintain Long-Term Fisheries, Macroinvertebrate, and Habitat Monitoring Stations in Streams [Medium Priority] ^b	Continue Consolidation of Water Quality Monitoring Data and Adopt Common Quality Assurance and Control Procedures Along with Standardized Sampling Protocols [High Priority] ^b	Conduct Aquatic Plant Habitat and Fish Survey Assessments in Inland Lakes [Medium Priority] ^b	Establish Long-Term Trend Inland Lake Water Quality Monitoring Stations [Medium Priority] ^b	Continue to Monitor and Document the Occurrence of Exotic Invasive Species [Medium Priority] ^b	Maintain the HSPF, FFS, Streamlined MOUSE, and MACRO Computer Models Developed Under the MMSD 2020 Facilities Plan [Medium Priority] ^b	Maintain the LSPC, ECOMSED, and RCA Computer Models Developed Under the RWQMPU and the MMSD 2020 Facilities Plan [Medium Priority] ^b
Federal Agencies									
U.S. Department of the Interior, Fish & Wildlife Service.....	--	--	--	--	--	--	--	--	--
U.S. Department of the Interior, Geological Survey.....	X	X	X	X	--	--	--	--	--
U.S. Environmental Protection Agency.....	--	--	--	X	--	--	--	--	--
National Oceanic and Atmospheric Administration.....	--	--	--	--	--	--	X	--	--
Nongovernmental Organizations	--	--	--	--	--	--	--	--	--
Riveredge Nature Center.....	--	--	--	X	--	--	--	--	--
Friends of Milwaukee's Rivers.....	--	--	--	X	--	--	--	--	--

^aDesignation of management agencies is not required under the Federal Clean Water Act. Thus, these designations are advisory only.

^bGeneralized priorities are assigned by recommendation. For certain municipalities or agencies, the priority for implementing a given recommendation may be higher or lower than the assigned priority, depending on specific circumstances and changed conditions over time.

^cNeed for sanitary survey depends on results of public health monitoring.

^dNeed for remedies depends on results of public health monitoring and sanitary surveys.

^eThis lake district or association does not currently exist, but is recommended to be established.

^fThe North Shore Health Department includes the City of Glendale and the Villages of Brown Deer, Fox Point, and River Hills.

Source: SEWRPC.

Exhibit I

Table XI-7

GOVERNMENTAL MANAGEMENT AGENCY DESIGNATIONS AND SELECTED RESPONSIBILITIES AND PRIORITIZATION FOR THE GROUNDWATER WATER QUALITY MANAGEMENT PLAN SUBELEMENT OF THE RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE FOR THE GREATER MILWAUKEE WATERSHEDS^a

Groundwater Management Agency	Map Groundwater Recharge Areas Outside the Southeastern Wisconsin Region [Low Priority] ^b	Consider the Recommendations of the Regional Water Supply Plan Regarding Maintenance of Groundwater Recharge Areas [Medium Priority] ^b	Consider the Recommendations of the Regional Water Supply Plan in Evaluating Sustainability of Proposed Developments and in Local Land Use Planning [Medium Priority] ^b	Map Groundwater Contamination Potential in Areas Outside the Southeastern Wisconsin Region [Low Priority] ^b	Consider Potential Impacts on Groundwater Quality of Stormwater Infiltration from Proposed Development [High Priority] ^b	Develop and Implement Utility-Specific Water Conservation Programs [Low Priority] ^b
Dodge County	X	X	X	X	X	X
Village of Lomira	--	X	X	--	X	X
Fond du Lac County	X	X	X	X	X	X
Village of Campbellsport	--	X	X	--	X	X
Village of Eden	--	X	X	--	X	X
Town of Ashford	--	X	X	--	X	X
Town of Auburn	--	X	X	--	X	X
Town of Byron	--	X	X	--	X	X
Town of Eden	--	X	X	--	X	X
Town of Empire	--	X	X	--	X	X
Town of Forest	--	X	X	--	X	X
Town of Osceola	--	X	X	--	X	X
Kenosha County	--	X	X	--	X	X
Town of Paris	--	X	X	--	X	X
Milwaukee County	--	X	X	--	X	X
City of Cudahy	--	X	X	--	X	X
City of Franklin	--	X	X	--	X	X
City of Glendale	--	X	X	--	X	X
City of Greenfield	--	X	X	--	X	X
City of Milwaukee	--	X	X	--	X	X
City of Oak Creek	--	X	X	--	X	X
City of St. Francis	--	X	X	--	X	X
City of South Milwaukee	--	X	X	--	X	X
City of Wauwatosa	--	X	X	--	X	X
City of West Allis	--	X	X	--	X	X
Village of Bayside	--	X	X	--	X	X
Village of Brown Deer	--	X	X	--	X	X
Village of Fox Point	--	X	X	--	X	X
Village of Greendale	--	X	X	--	X	X
Village of Hales Corners	--	X	X	--	X	X

Table XI-7 (continued)

Groundwater Management Agency	Map Groundwater Recharge Areas Outside the Southeastern Wisconsin Region [Low Priority] ^b	Consider the Recommendations of the Regional Water Supply Plan Regarding Maintenance of Groundwater Recharge Areas [Medium Priority] ^b	Consider the Recommendations of the Regional Water Supply Plan in Evaluating Sustainability of Proposed Developments and in Local Land Use Planning [Medium Priority] ^b	Map Groundwater Contamination Potential in Areas Outside the Southeastern Wisconsin Region [Low Priority] ^b	Consider Potential Impacts on Groundwater Quality of Stormwater Infiltration from Proposed Development ^b [High Priority] ^b	Develop and Implement Utility-Specific Water Conservation Programs [Low Priority] ^b
Milwaukee County (continued)						
Village of River Hills	--	X	X	--	X	X
Village of Shorewood	--	X	X	--	X	X
Village of West Milwaukee	--	X	X	--	X	X
Village of Whitefish Bay	--	X	X	--	X	X
Ozaukee County	--	X	X	--	X	X
City of Cedarburg	--	X	X	--	X	X
City of Mequon	--	X	X	--	X	X
City of Port Washington	--	X	X	--	X	X
Village of Fredonia	--	X	X	--	X	X
Village of Grafton	--	X	X	--	X	X
Village of Newburg	--	X	X	--	X	X
Village of Saukville	--	X	X	--	X	X
Village of Thiensville	--	X	X	--	X	X
Town of Cedarburg	--	X	X	--	X	X
Town of Fredonia	--	X	X	--	X	X
Town of Grafton	--	X	X	--	X	X
Town of Port Washington	--	X	X	--	X	X
Town of Saukville	--	X	X	--	X	X
Racine County	--	X	X	--	X	X
City of Racine	--	X	X	--	X	X
Village of Caledonia	--	X	X	--	X	X
Village of Mt. Pleasant	--	X	X	--	X	X
Village of North Bay	--	X	X	--	X	X
Village of Sturtevant	--	X	X	--	X	X
Village of Union Grove	--	X	X	--	X	X
Village of Wind Point	--	X	X	--	X	X
Town of Dover	--	X	X	--	X	X
Town of Norway	--	X	X	--	X	X
Town of Raymond	--	X	X	--	X	X
Town of Yorkville	--	X	X	--	X	X

Table XI-7 (continued)

Groundwater Management Agency	Map Groundwater Recharge Areas Outside the Southeastern Wisconsin Region [Low Priority] ^b	Consider the Recommendations of the Regional Water Supply Plan Regarding Maintenance of Groundwater Recharge Areas [Medium Priority] ^b	Consider the Recommendations of the Regional Water Supply Plan in Evaluating Sustainability of Proposed Developments and in Local Land Use Planning [Medium Priority] ^b	Map Groundwater Contamination Potential in Areas Outside the Southeastern Wisconsin Region [Low Priority] ^b	Consider Potential Impacts on Groundwater Quality of Stormwater Infiltration from Proposed Development [High Priority] ^b	Develop and Implement Utility-Specific Water Conservation Programs [Low Priority] ^b
Sheboygan County	X	X	X	X	X	X
Village of Adell.....	--	X	X	--	X	X
Village of Cascade.....	--	X	X	--	X	X
Village of Random Lake.....	--	X	X	--	X	X
Town of Greenbush.....	--	X	X	--	X	X
Town of Holland.....	--	X	X	--	X	X
Town of Lyndon.....	--	X	X	--	X	X
Town of Mitchell.....	--	X	X	--	X	X
Town of Scott.....	--	X	X	--	X	X
Town of Sherman.....	--	X	X	--	X	X
Washington County	--	X	X	--	X	X
City of West Bend.....	--	X	X	--	X	X
Village of Germantown.....	--	X	X	--	X	X
Village of Jackson.....	--	X	X	--	X	X
Village of Kewaskum.....	--	X	X	--	X	X
Village of Newburg.....	--	X	X	--	X	X
Town of Addison.....	--	X	X	--	X	X
Town of Barton.....	--	X	X	--	X	X
Town of Farmington.....	--	X	X	--	X	X
Town of Germantown.....	--	X	X	--	X	X
Town of Jackson.....	--	X	X	--	X	X
Town of Kewaskum.....	--	X	X	--	X	X
Town of Polk.....	--	X	X	--	X	X
Town of Richfield.....	--	X	X	--	X	X
Town of Trenton.....	--	X	X	--	X	X
Town of Wayne.....	--	X	X	--	X	X
Town of West Bend.....	--	X	X	--	X	X
Waukesha County	--	X	X	--	X	X
City of Brookfield.....	--	X	X	--	X	X
City of Muskego.....	--	X	X	--	X	X
City of New Berlin.....	--	X	X	--	X	X
Village of Butler.....	--	X	X	--	X	X
Village of Elm Grove.....	--	X	X	--	X	X

Table XI-7 (continued)

Groundwater Management Agency	Map Groundwater Recharge Areas Outside the Southeastern Wisconsin Region [Low Priority] ^b	Consider the Recommendations of the Regional Water Supply Plan Regarding Maintenance of Groundwater Recharge Areas [Medium Priority] ^b	Consider the Recommendations of the Regional Water Supply Plan in Evaluating Sustainability of Proposed Developments and in Local Land Use Planning [Medium Priority] ^b	Map Groundwater Contamination Potential in Areas Outside the Southeastern Wisconsin Region [Low Priority] ^b	Consider Potential Impacts on Groundwater Quality of Stormwater Infiltration from Proposed Development [High Priority] ^b	Develop and Implement Utility-Specific Water Conservation Programs [Low Priority] ^b
Waukesha County (continued)						
Village of Menomonee Falls.....	--	X	X	--	X	X
Town of Brookfield.....	--	X	X	--	X	X
Town of Lisbon.....	--	X	X	--	X	X

^aDesignation of management agencies is not required under the Federal Clean Water Act. Thus, these designations are advisory only.

^bGeneralized priorities are assigned by recommendation. For certain municipalities or agencies, the priority for implementing a given recommendation may be higher or lower than the assigned priority, depending on specific circumstances and changed conditions over time.

Source: SEWRPC.

Exhibit J

Summary Section of SEWRPC PR No. 50, Chapter XI, “Plan Implementation”

SUMMARY

This chapter has presented the recommended means for implementing the regional water quality management plan update for the greater Milwaukee watersheds. The chapter includes the designation of management agencies, identification of implementation costs and schedules, and assignment of plan implementation responsibilities for point source pollution abatement, rural nonpoint source pollution abatement, urban nonpoint source pollution abatement, instream water quality measures, inland lake water quality measures, auxiliary measures, and groundwater management measures.

Designated Management Agencies

The local, regional, State, and Federal government management agencies, along with certain nongovernmental organizations that would have a role in plan implementation is set forth by plan element, or subelement, in Tables XI-2 through XI-7, and can be summarized as follows:

- Point source pollution abatement (62 agencies),
- Rural nonpoint source pollution abatement (61 agencies and four private land trusts),
- Urban nonpoint source pollution abatement (121 agencies and two nongovernmental organizations),
- Instream water quality measures (104 agencies),
- Inland lake water quality management (35 agencies),
- Auxiliary water quality management (49 agencies and two nongovernmental organizations), and
- Groundwater quality management (95 agencies).

All but 35 of the designated management agencies currently exist. The potential new agencies consist of 28 Town utility districts and seven lake protection and rehabilitation districts. Depending on how many counties in the study have adequate existing programs to provide the additional oversight of private onsite wastewater treatment systems (POWTS) that are recommended to be performed by existing or new town utility districts, those 28 new utility districts would be established to provide additional oversight of POWTS.

Targeting of Financial Resources

Tables XI-2 through XI-7 include prioritization of recommendations as “high,” “medium,” or “low.” Financial resources should generally be targeted according to this prioritization. Because of the broad scope of the recommended plan, it is difficult to more specifically indicate where to target resources at the systems planning level. However, as individual watershed action plans are developed during the plan implementation phase, it is anticipated that resources will be more specifically targeted to implementation actions within the overall context provided by the regional water quality management plan update.

This chapter includes information on the financial and technical assistance available to designated management agencies in carrying out their various assigned responsibilities, and it includes recommendations that:

- To fully meet the substantial costs associated with attaining the plan objectives, the State Legislature significantly increase levels of cost-share funding for key WDNR grant programs, particularly the

Targeted Runoff Management (TRM) Grant Program and the Urban Nonpoint Source Water Pollution Abatement and Storm Water Management Grant Program, and also for DATCP programs to implement agricultural best management practices and

- The WDNR ask the State Legislature to establish direct State funding of all continuing areawide water quality management planning efforts in the State, with that funding supplementing funds obtained by the State from the USEPA. It is proposed that the cost of implementing such planning efforts in the Southeastern Wisconsin Region be divided equally between WDNR (with State and Federal funding) and SEWRPC.

Exhibit K

Table XI-7a

PRIVATE AND PUBLIC SECTOR COSTS FOR COMPONENTS OF THE RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN UPDATE

Plan Element	Plan Subelement	Description	Component	Public Sector Capital Cost (thousands)	Public Sector Annual Operation and Maintenance Cost (thousands)	Private Sector Capital Cost (thousands) ^a	Private Sector Annual Operation and Maintenance Cost (thousands) ^a	Total Capital Cost (thousands)	Total Annual Operation and Maintenance Cost (thousands)
Surface Water Quality Plan Element	Point Source Pollution Abatement Plan Subelement	Public Wastewater Treatment Plants and Associated Sewer Service Areas	3. Implementation of the Village of Kewaskum WWTP Facilities Plan	\$ 3,440	\$ 97	--	--	\$ 3,440	\$ 97
			4. Prepare facilities plans for the Villages of Jackson and Newburg	200	--	--	--	200	--
			5. Prepare facilities plans for the City of Cedarburg and Village of Grafton, including consideration of merging operations into a single, regional treatment facility	175	--	--	--	175	--
			6. Prepare facilities plan for City of Racine and environs upon completion of amendment to sewer service area	250	--	--	--	250	--
			7. Capacity, Management, Operations, and Maintenance (CMOM) programs for municipalities outside of the MMSD service area	1,425	--	--	--	1,425	--
			8. City of West Bend Northwest Interceptor	4,091	3	--	--	4,091	3
			9. Force main from Waubeka in the Town of Fredonia to the Village of Fredonia sewerage system	1,549	11	--	--	1,549	11
			10. Ryan Creek interceptor sewer	51,386	70	--	--	51,386	70
			11. Implementation of MMSD 2020 Facilities Plan as Recommended under the RWQMPPU	954,900	900	--	--	954,900	900
			12. Implementation of wastewater treatment plant upgrades for City of South Milwaukee	4,298	575	--	--	4,298	575

Table XI-7a (continued)

Plan Element	Plan Subelement	Description	Component	Public Sector Capital Cost (thousands)	Public Sector Annual Operation and Maintenance Cost (thousands)	Private Sector Capital Cost (thousands) ^a	Private Sector Annual Operation and Maintenance Cost (thousands) ^a	Total Capital Cost (thousands)	Total Annual Operation and Maintenance Cost (thousands)
Surface Water Quality Plan Element (continued)	Nonpoint Source Pollution Abatement Plan Subelement	Recommended Rural Nonpoint Source Pollution Control Measures	2. Provide six months of manure storage for livestock operations	--	--	\$ 47,050	\$ 3,072	\$ 47,050	\$ 3,072
			3. Prepare and/or implement nutrient management plans	--	--	1,526	1,308	1,526	1,308
			5. Control barnyard runoff	--	--	2,280	--	2,280	--
			6. Expand riparian buffers	--	--	1,747	389	1,747	389
			7. Convert marginal cropland and pasture to wetlands and prairies	--	--	72,253	16,250	72,253	16,250
			8. Restrict livestock access to streams	--	--	969	48	969	48
			9. Manage milking center wastewater	--	--	3,799	83	3,799	83
			10. Expand oversight and maintenance of private onsite wastewater treatment systems (POWTS)	\$ 113,660	\$ 663	--	--	113,660	663
		Recommended Urban Nonpoint Source Pollution Control Measures	1. Implementation of the nonagricultural (urban) performance standards of Chapter NR 151	24,634	591	172,342	31,617	196,976	32,208
			2. Programs to detect and eliminate illicit discharges and control pathogens that are harmful to human health	19,524	--	--	--	19,524	--
			3. Chloride reduction programs	499	1,496	--	--	499	1,496
			4. Implement fertilizer management programs	160	--	--	--	160	--
			5. Disconnect residential roof drains from sanitary and combined sewers and infiltrate roof runoff	--	--	22,171	350	22,171	350
			7. Beach and riparian litter and debris control	--	596	--	--	--	596

Table XI-7a (continued)

Plan Element	Plan Subelement	Description	Component	Public Sector Capital Cost (thousands)	Public Sector Annual Operation and Maintenance Cost (thousands)	Private Sector Capital Cost (thousands) ^a	Private Sector Annual Operation and Maintenance Cost (thousands) ^a	Total Capital Cost (thousands)	Total Annual Operation and Maintenance Cost (thousands)	
Surface Water Quality Plan Element (continued)	Instream Water Quality Measures Plan Subelement	Hydrologic and Hydraulic Management	1. Concrete channel renovation and rehabilitation	\$ 175,200	--	--	--	\$ 175,200	--	
			2. Renovation of the MMSD Kinnickinnic River flushing station	3,400	\$ 600	--	--	3,400	\$ 600	
			3. Dam abandonment and restoration plans	1,800	--	--	--	1,800	--	
			5. Increase the dredged material storage volume of the Jones Island Confined Disposal Facility	3,500	12	--	--	3,500	12	
	Inland Lakes Water Quality Measures Plan Subelement			1. Lake management plans for 17 major lakes	850	--	--	--	850	--
				2. Implement trophic state monitoring programs for 20 major lakes	--	120	--	--	--	120
	Auxiliary Water Quality Management Plan Subelement	Public Beaches		1. Continue current public health monitoring programs and expand to all public beaches in the study area	--	31	--	--	--	31
				3. Continue and expand current beach grooming programs	--	710	--	--	--	710
		Waterfowl Control		1. Implement programs to discourage unacceptably high numbers of waterfowl from congregating near beaches and other water features	--	165	--	--	--	165
		Water Pollution Control		1. Continue collection programs for household hazardous wastes and expand such programs to communities that currently do not have them	--	374	--	--	--	374
		Emerging Issues		2. Implement collection programs for expired and unused household pharmaceuticals	--	40	--	--	--	40

Table XI-7a (continued)

Plan Element	Plan Subelement	Description	Component	Public Sector Capital Cost (thousands)	Public Sector Annual Operation and Maintenance Cost (thousands)	Private Sector Capital Cost (thousands) ^a	Private Sector Annual Operation and Maintenance Cost (thousands) ^a	Total Capital Cost (thousands)	Total Annual Operation and Maintenance Cost (thousands)
Surface Water Quality Plan Element (continued)	Auxiliary Water Quality Management Plan Subelement (continued)	Water Quality Monitoring	2. Continue and possibly expand USGS stream gauging program	\$ 145	\$ 126	--	--	\$ 145	\$ 126
			3. Establish long-term water quality monitoring programs for areas outside of MMSD service area	--	156	--	--	--	156
			4. Establish long-term fisheries and macro-invertebrate monitoring stations	--	100	--	--	--	100
			5. Establish long-term aquatic habitat monitoring stations	--	59	--	--	--	59
		Maintenance of the Regional Water Quality Management/MMSD 2020 Facilities Plan Modeling System	1. Continue maintenance of MMSD conveyance system modeling tools	--	15	--	--	--	15
			2. Continue maintenance of watershedwide riverine water quality models (LSPC) and Milwaukee Harbor estuary/nearshore Lake Michigan hydrodynamic (ECOMSED) and water quality (RCA) models	--	15	--	--	--	15
Groundwater Management Plan Element	Plan Recommendations Related to Groundwater	Groundwater Recharge Areas	1. Extend groundwater recharge area mapping to those portions of the study area located outside of the Southeastern Wisconsin Region	25	--	--	--	25	--
		Mapping Groundwater Contamination Potential	1. Extend mapping of groundwater contamination potential for shallow aquifers to those portions of the study area located outside of the Southeastern Wisconsin Region	25	--	--	--	25	--
--	--	--	Totals	\$1,365,136	\$7,526	\$324,138	\$53,117	\$1,689,274	\$60,643

^aSome private-sector costs for rural nonpoint source pollution control measures may be offset by State or Federal grant funds.

Source: SEWRPC.

Exhibit L

Table R-2

POTENTIAL GRANT PROGRAMS TO IMPLEMENT SELECTED SPECIFIC PLAN RECOMMENDATIONS

Plan Recommendations	Grant Programs
Point Source Pollution Abatement	
1. Construction of Municipal Sewerage and Wastewater Treatment Facilities	<ul style="list-style-type: none"> • USEPA – Clean Water State Revolving Fund • WDNR – State of Wisconsin Clean Water Fund Program • Direct Federal Line-Item Grant • USDA – Water and Waste Disposal Systems for Rural Communities
Rural and Urban Nonpoint Source Pollution Abatement	
1. Reduce Agricultural Nonpoint Source Pollution <ul style="list-style-type: none"> A. Reduce Erosion from Cropland through Measures Such as Conservation Tillage and Grassed Waterways B. Install Riparian Buffers/Filter Strips C. Practice More Effective Manure and Nutrient Management D. Install Diversions Around Barnyards E. Restrict Livestock Access to Streams F. Manage Milking Center Wastewater G. Expanded Oversight and Maintenance of Private Onsite Sewage Disposal System 	<ul style="list-style-type: none"> • USDA – NRCS – Environmental Quality Incentives Program • USDA – Emergency Conservation Program • USDA – FSA – Conservation Reserve Program • DATCP – Land and Water Resource Management Program • WDNR – Targeted Runoff Management Grant Program • USDA – FSA – Conservation Reserve Program • USDA – FSA – Conservation Reserve Enhancement Program • WDNR – Targeted Runoff Management Grant Program • USDA – NRCS – Environmental Quality Incentives Program • DATCP – Land and Water Resource Management Program • WDNR – Targeted Runoff Management Grant Program • USDA – FSA – Conservation Reserve Program • USDA – NRCS – Environmental Quality Incentives Program • WDNR – Targeted Runoff Management Grant Program • WDNR – Targeted Runoff Management Grant Program • DATCP – ATCP50 Cost-Share Funds • USDA – Water and Waste Disposal Systems for Rural Communities Program
2. Reduce Urban Nonpoint Source Pollution <ul style="list-style-type: none"> A. Implement Nonagricultural Performance Standards of Chapter NR 151 for Construction Sites, Existing and New Development, and Redevelopment B. Marina Waste Management Facilities 	<ul style="list-style-type: none"> • WDNR – Urban Nonpoint Source and Stormwater Grants Program • WDNR/USFWS – Federal Clean Vessel Act Grant Program
Riparian Buffers, Prairie and Wetland Restoration, and Instream Measures	
1. Encourage Riparian Buffer Establishment Along Stream and River Corridors	<ul style="list-style-type: none"> • USFWS – Partners for Fish and Wildlife Habitat Restoration Program • USDA – NRCS – Wildlife Habitat Incentives Program • USDA – FSA – Conservation Reserve Program • USDA – Emergency Watershed Protection Program • USEPA – Five-Star Restoration Program • WDNR – Stewardship Incentives Program • WDNR – Urban Rivers Grant Program • WDNR – Municipal Flood Control Grants Program • WDNR/U.S. Department of the Interior – Land and Water Conservation Fund Grants Program • National Fish and Wildlife Foundation – Challenge Grant Program • Eastman Kodak – American Greenway Grants Program
2. Establish Buffers Along Lake Shorelines	<ul style="list-style-type: none"> • WDNR – Lake Protection Grant Program
3. Wetland Restoration/Protection	<ul style="list-style-type: none"> • USDA – Emergency Watershed Protection Program • USFWS – North American Wetlands Conservation Fund • USFWS – Partners for Fish and Wildlife Habitat Restoration Program • USFWS – Partnership for Wildlife • USDA – NRCS – Wetland Reserve Program • USDA – Watershed Protection and Flood Prevention Program • USDA – Emergency Watershed Protection Program • USDA – NRCS – Wildlife Habitat Incentives Program • USDA-FSA – Conservation Reserve Enhancement Program • USDA – FSA – Conservation Reserve Program • USEPA – Five-Star Restoration Program • USDOT – Transportation Enhancement Program • USCOE – Flood Hazard Mitigation and Riverine Ecosystem Restoration Program • WDNR – Lake Protection Grant Program • WDNR – Stewardship Incentives Program • WDNR – Municipal Flood Control Grants Program • WDNR – River Protection Grant Program • Eastman Kodak – American Greenway Grants Program

Table R-2 (continued)

Plan Recommendations	Grant Programs
Riparian Buffers, Prairie and Wetland Restoration, and Instream Measures (continued)	
4. Prairie Restoration	<ul style="list-style-type: none"> • USFWS – Partners for Fish and Wildlife Habitat Restoration Program • USFWS – Partnership for Wildlife • USDA-NRCS – Wildlife Habitat Incentives Program • USDA – Emergency Watershed Protection Program • USDA-FSA – Conservation Reserve Program • USDA-FSA – Conservation Reserve Enhancement Program • National Fish and Wildlife Foundation – Challenge Grant • WDNR – River Protection Grant Program • WDNR – Stewardship Incentives Program • WDNR – Municipal Flood Control Grants Program • Eastman Kodak – American Greenway Grants Program
5. Concrete Channel Renovation and Rehabilitation	<ul style="list-style-type: none"> • USCOE – Flood Hazard Mitigation and Riverine Ecosystem Restoration Program • WDNR – River Protection Grant Program
6. Dam Abandonment and Associated Stream Restoration	<ul style="list-style-type: none"> • WDNR – Small and Abandoned Dam Removal Grant Program
7. Fisheries Protection and Enhancement	<ul style="list-style-type: none"> • USFWS – Great Lakes Fish and Wildlife Restoration Act Grant Program • USFWS – Wildlife Conservation and Appreciation Program • USFWS – Partners for Fish and Wildlife Habitat Restoration Program • USFWS – Partnership for Wildlife • USDA – NRCS – Wildlife Habitat Incentives Program • USDA – Watershed Protection and Flood Prevention Program • USCOE – Aquatic Ecosystem Restoration • WDNR – State Wildlife Grants Program • WDNR – County Conservation Aids • WDNR – Stewardship Incentives Program • WDNR – Stewardship Grant Program • National Fish and Wildlife Foundation – Great Lakes Watershed Restoration Program • National Fish and Wildlife Foundation – Challenge Grant Program
8. Water Quality Monitoring	<ul style="list-style-type: none"> • USEPA – Beach Act Grants • USGS – Cooperative Stream Gaging Program
Inland Lake Measures	
1. Preparation of Lake Management Plans	<ul style="list-style-type: none"> • WDNR – Lake Protection Grant Program • WDNR – Lake Planning Grant Program • WDNR – Lake Classification Grant Program • WDNR – Aquatic Invasive Species Control Grants
2. Control of Nonpoint Source Pollution	<ul style="list-style-type: none"> • See “Rural and Urban Nonpoint Source Pollution Abatement” and “Riparian Buffers, Prairie and Wetland Restoration, and Instream Measures” categories in this table for applicable grant programs
3. Lake Monitoring	<ul style="list-style-type: none"> • USGS – Cooperative Stream Gaging Program
4. Informational Programming	<ul style="list-style-type: none"> • See “Education” category in this table for applicable programs
Education	
1. Provide Information to Agricultural Landowners through Short Courses and Distribution of Educational Materials on the Environmental and Economic Benefits of Nutrient Management and Soil Erosion Control	<ul style="list-style-type: none"> • WDNR – River Protection Grant Program
2. Work with and Provide Information to Agricultural Supply Companies, Lawn Maintenance Companies, and Golf Course Superintendents on the State Requirements and Principles of Nutrient and Chemical Management	<ul style="list-style-type: none"> • WDNR – River Protection Grant Program
3. Provide Information to Contractors and Developers on Appropriate Best Management Practices for Stormwater Management and Erosion Control	<ul style="list-style-type: none"> • WDNR – Urban Nonpoint Source and Stormwater Grants Program
4. Provide Information to Riparian Property Owners and Landscape Contractors on the Effectiveness of Riparian Buffers and Design Options	<ul style="list-style-type: none"> • WDNR – River Protection Grant Program
5. Promote and Help to Implement In-School Environmental and Natural Resource Educational Programs	<ul style="list-style-type: none"> • USEPA – Environmental Education Grants Program
6. Provide Information to Watershed Residents on Appropriate Yard Care Management Practices	<ul style="list-style-type: none"> • WDNR – River Protection Grant Program • WDNR – Urban Nonpoint Source and Stormwater Grants Program

Table R-2 (continued)

NOTES: The Catalog of Federal Domestic Assistance programs can be accessed at: <http://12.46.245.173/cfda/cfda.html>. Additional information on grants can be accessed through the U.S. Environmental Protection Agency at: <http://cfpub.epa.gov/fedfund/and> the University of Wisconsin-Madison Libraries Grants Information Collection at: <http://grants.library.wisc.edu>.

The following abbreviations were used in this table:

FSA	-	Farm Services Agency	USDOT	-	U.S. Department of Transportation
USFWS	-	U.S. Fish and Wildlife Service	USEPA	-	U.S. Environmental Protection Agency
NRCS	-	Natural Resources Conservation Service	USGS	-	U.S. Geological Survey
USCOE	-	U.S. Army Corps of Engineers	DATCP	-	Wisconsin Department of Agriculture, Trade, and Consumer Protection
USDA	-	U.S. Department of Agriculture	WDNR	-	Wisconsin Department of Natural Resources

Source: SEWRPC.