

MINUTES

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

DATE: May 25, 2005

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

Julie A. Anderson
John R. Behrens

John M. Bennett
Andrew A. Holschbach

William J. Hoppe
William A. Kappel
Kristine M. Krause
Charles J. Krohn
James Lubner
Daniel J. Lynch

Jeffrey J. Mantes
Charles S. Melching

Gary A. Mick
Matthew Moroney

Paul E. Mueller
Cheryl Nenn
Jeffrey S. Nettesheim
Charles A. Peters
Stephen Poloncsik (for Peter G. Swenson)
Karen L. Sands (for Kevin L. Shafer)

Thomas A. Wiza

Administrator, Village of Kewaskum, SEWRPC Commissioner
Chief Environmental Engineer, Southeastern
Wisconsin Regional Planning Commission
Director, Racine County Division of Planning and Development
Commissioner-Secretary, Silver Lake Protection and
Rehabilitation District
City Engineer, City of Franklin
Director, Ozaukee County Planning, Resources, and
Land Management Department
City Engineer, City of Mequon
Director of Public Works, City of Wauwatosa
Vice-President, Environmental Department, We Energies
Regional Water Leader, Wisconsin Department of Natural Resources
Sea Grant Advisory Services Specialist, UW Sea Grant Institute
District Conservationist, Natural Resources Conservation
Service, Ozaukee County
Commissioner of Public Works, City of Milwaukee
Associate Professor, Civil & Environmental Engineering,
Marquette University
Director of Environmental Services, Milwaukee County
Executive Director, Metropolitan Builders Association
of Greater Milwaukee
Administrator, Washington County Planning and Parks Department
Riverkeeper/Project Director, Friends of Milwaukee's Rivers
Senior Utility Engineer, Village of Menomonee Falls
District Chief, U.S. Geological Survey
Senior Staff Engineer, U.S. Environmental Protection Agency
Watershed Planning Manager, Milwaukee
Metropolitan Sewerage District
Director of Engineering and Public Works, City of Cedarburg

Staff Members and Guests

Robert P. Biebel

Joseph E. Boxhorn

Troy E. Deibert
Thomas M. Slawski

Special Projects Environmental Engineer, Southeastern
Wisconsin Regional Planning Commission
Senior Planner, Southeastern Wisconsin Regional
Planning Commission
Water Resources Engineer, HNTB Corporation
Principal Planner, Southeastern Wisconsin
Regional Planning Commission

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 Commission staff.

APPROVAL OF MINUTES OF THE MEETING OF MARCH 23, 2005

Mr. Schmidt asked if there were any additions or revisions to be made to the minutes of the March 23, 2005, meeting of the Committee.

Mr. Lubner noted that at the last committee meeting he raised the issue of the possible impact of climate change on the plan and he noted that the minutes did not address that comment. Mr. Biebel replied that the omission was an oversight and that Chapter II, "Description of the Study Area," of Planning Report No. 50 would be revised to include information on climate change and the relation of that change to the plan.

[Secretary's Note: As set forth in the attached Exhibit A, a "*Climate Change*" subsection was inserted after the *General Climatic Conditions* subsection of the **Climate** section on page 56 of Chapter II.]

There being no further additions or revisions, the minutes were approved, on a motion by Mr. Bennett, seconded by Mr. Lubner, and carried unanimously.

CONSIDERATION OF CHAPTER I, "INTRODUCTION," OF SEWRPC TECHNICAL REPORT NO. 39, WATER QUALITY CONDITIONS AND SOURCES OF POLLUTION IN THE GREATER MILWAUKEE WATERSHEDS

Mr. Schmidt asked Mr. Hahn to review the preliminary draft of Chapter I, "Introduction."

Mr. Hahn began by showing a PowerPoint slide illustrating the planning process and differentiating between SEWRPC Planning Report No. 50 (PR No. 50), *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds*, which the Committee had been reviewing at its previous meetings, and SEWRPC Technical Report No. 39 (TR No. 39), *Water Quality Conditions and Sources of Pollution in the Greater Milwaukee Watersheds*. He noted that the four report chapters being considered at this meeting were the first chapters in TR No. 39, and he recognized Mr. Thomas M. Slawski and Mr. Joseph E. Boxhorn of the Commission staff for their professional work as the principal authors of the four chapters.

Mr. Hahn also noted that information from TR No. 39 would be summarized in PR No. 50, and, as a result, the next few meetings of the Committee would focus on review of TR No. 39 since information developed for that report would be required as input to the Planning Report. He said that, following the first four background chapters of TR No. 39 which present information for the entire study area, the report will include a series of chapters on surface water quality conditions and sources of pollution in each of the Greater Milwaukee Watersheds, a groundwater chapter, and the summary and conclusions.

Mr. Hahn indicated that he would highlight selected portions of the chapter and he encouraged the Committee members to raise comments and questions on a page-by-page basis, as had been done at the previous meetings. He also said that, since there was necessarily some duplication between those chapters of PR No. 50 that were already reviewed by the Committee and the Chapters in TR No. 39, he would simply identify the similar sections and focus on those that were unique to TR No. 39.

Mr. Melching said that the amount of urban land in the study area was given as 234,938 acres in Table I-3 on page 13, but the extent of urban development was listed as 202,632 acres in Table I-2 on page 11. Mr. Biebel

pointed out that the footnote to Table I-2 states that scattered residential developments were not included in the quantification of urban lands in that table. He indicated that all urban development was included in Table I-3.

[Secretary's Note: The following clarifying sentence was inserted at the end of the footnote to Table I-2:

“The quantification of urban lands set forth in Table I-3 includes scattered urban development.”]

Mr. Wiza suggested that the use of scientific notation to express time scales in Figure I-2 might be confusing to lay readers and he suggested that time scales be restated without using scientific notation. Mr. Lubner seconded that suggestion. In response to those comments, Figure I-2 has been revised to eliminate scientific notation.

There being no further discussion, a motion to approve preliminary draft Chapter I, “Introduction,” as amended, was made by Ms. Anderson, seconded by Mr. Nettesheim, and carried unanimously.

[Secretary's Note: Subsequent to the meeting, Mr. Behrens noted that he thought that this chapter should include a section on special-purpose units of government. In response to Mr. Behrens' suggestion, a **UNITS OF GOVERNMENT** section heading was added on page 5, preceding the **CIVIL DIVISIONS** section, which was changed to a subsection, and **Special-Purpose Units of Government** and **Other Agencies with Resource-Management Responsibilities Related to Water Quality** subsections were added as set forth in Exhibit B. For consistency, the **Special-Purpose Units of Government** and **Other Agencies with Resource-Management Responsibilities Related to Water Quality** subsections were also added on page 12 of Chapter II of SEWRPC Planning Report No. 50 after the *Civil Divisions* subsection.]

CONSIDERATION OF CHAPTER II, “WATER QUALITY DEFINITIONS AND ISSUES,” OF SEWRPC TECHNICAL REPORT NO. 39

Mr. Schmidt asked Mr. Slawski to review the preliminary draft of Chapter II, “Water Quality Definitions and Issues.”

Mr. Slawski noted that on page 2 in the last paragraph of the **Types of Pollution** subsection, the word “radon” should be changed to “radium.”

With reference to the **Mercury** subsection on page 10, Ms. Krause noted that the statement that “Burning coal for energy production accounts for over 40 percent of the mercury inputs to the atmosphere,” refers to the statewide percentage and that the atmospheric contribution is not the same as what is actually deposited on the land and water surface. She also stated that there is no fish consumption advisory for Lake Michigan.

[Secretary's Note: In response to this comment, the third sentence in the third paragraph on page 10 was revised to read as follows, and an additional explanatory sentence was added. (The revised and added text in this and all subsequent revisions indicated in these minutes is indicated in bold letters for clarification only. The report text will not be bold.)

“**Statewide**, burning coal for energy production accounts for over 40 percent of the mercury inputs to the atmosphere. **However, owing to the complex interaction between mercury emissions from in- and out-of-state sources and climatological conditions, the contribution to the atmosphere cannot be directly related to the amount of deposition of mercury on land and water surfaces.**”]

Mr. Krohn pointed out that in the second full paragraph on page 12, in addition to small organisms in water and fish, it should also be mentioned that birds and mammals can come in contact with, or ingest, PCBs.

[Secretary's Note: In response to this comment, the first sentence in the second full paragraph on page 12 was revised to read as follows:

“PCBs can be taken up by small organisms and fish in water, **amphibians, reptiles, birds, and mammals** through contact with contaminated water or sediment or through ingestion of an organism carrying PCBs.”]

Mr. Slawski asked that the Committee members replace the entire **Point Source Pollution** subsection, beginning on page 15 with an expanded subsection that was handed out at the meeting.

Mr. Melching said that the last sentence in the *Sanitary Sewer System Flow Relief Points* subsection on page 15 mentions reduced reliance on sanitary sewage flow relief devices, but does not state how many such relief devices, including locations of occasional pumping from sanitary sewer manholes, still exist. Mr. Biebel replied that there were still about 100 such relief devices, and he said that all such devices for which locations are available will be mapped in the individual watershed chapters of TR No. 39.

[Secretary's Note: In response to Mr. Melching's comment, the following sentence was added at the end of the *Sanitary Sewer System Flow Relief Points* subsection:

“Flow relief devices for which locations are available are mapped in Chapters V through X of this report.”]

Ms. Krause noted that the industrial point discharges as described in the *Industrial Discharges* subsection on page 15 would all require permits under the Wisconsin Pollutant Discharge Elimination System (WPDES) program. Mr. Biebel responded that the report mentions that “most industrial discharges in the study area which have significant levels of pollutants in their wastewater have been connected to public sanitary sewer systems.” The subsection also states that pretreatment of effluents with concentrations exceeding effluent limits is required under the WPDES.

With regard to the *Underground Storage Tanks* subsection on page 17, Mr. Lubner inquired whether the acronym LUST was still commonly used to designate leaking underground storage tanks. Mr. Krohn replied that it was still used, although there is no specific program related to such tanks.

Mr. Mueller asked that the *Onsite Sewage Disposal Systems* subsection on page 18 and 19 be revised to elaborate on the impacts of inadequate or improper operation and maintenance of private onsite sewage disposal systems. He stated that there is a need for the report to address the roles of homeowners and waste haulers, system replacement needs, periodic inspections, and lack of public education. He noted that Washington County estimates a need for hundreds of annual system replacements, but such replacements are not implemented because of a lack of resources to perform inspections. He also pointed out the abuses that lead to surface and groundwater pollution, including pumping from systems into ditches, puncturing tanks, and commercial haulers discharging to surface waters.

[Secretary's Note: In response to these comments, the following paragraph was added after the first paragraph in the *Onsite Sewage Disposal Systems* subsection:

“The pollution of surface water and groundwater from onsite sewage disposal systems potentially can be worsened by:

- The lack of resources for adequate inspection of systems, resulting in the continued use of systems that should be upgraded or replaced,
- The lack of public education on the proper operation and maintenance of private onsite sewage disposal systems, and
- Operation and maintenance abuses such as pumping from systems into ditches, puncturing tanks, and commercial haulers discharging effluent to surface waters.”

These potential problems have been reduced in many areas by programs and oversight at the county and local levels and by activities of lake-oriented organizations. However, the local programs are often limited by resources.]

Mr. Wiza noted that Wisconsin Department of Commerce Chapter Comm 83 put onsite sewage disposal systems on a par with public sewage treatment systems; however, onsite systems can generate nitrates, chlorides, and other soluble pollutants that contaminate groundwater.

[Secretary’s Note: In response to this comment, the following sentence was added at the end of the last paragraph of the *Onsite Sewage Disposal Systems* subsection on page 19:

“Although Chapter Comm 83 treats onsite sewage disposal systems as waste treatment facilities comparable in effect to public sewage treatment plants, onsite systems still pose a greater risk for pollution of groundwater with nitrates, chlorides, and other soluble pollutants. The fact that these systems discharge directly to the groundwater system distinguishes them from public sewage treatment plants. In addition, there is a concern with regard to management and oversight of such systems, as was described above.”]

Mr. Peters asked that the *Deicing Salt Usage* subsection on pages 17 and 18 be expanded to recognize the effects of deicers used at airports, and he added that this is a significant issue at General Mitchell International Airport in the City of Milwaukee.

[Secretary’s Note: In response to these comments, the subsection was retitled *Deicing Agent Usage* and the following paragraph was added at the end of the subsection:

“During cold weather months, deicing activities at airports may contribute pollutants to surface waters. Aircraft are deiced by applying chemical deicer fluids to critical surfaces. These fluids typically consist of glycol compounds, usually ethylene glycol or propylene glycol, and additives, such as surfactants, corrosion inhibitors, and flame retardants in aqueous solution. Runoff from snowmelt and precipitation can carry these substances into surface waters. There are two main issues of concern related to runoff containing deicing fluids. First, glycols can create high oxygen demands in receiving waters. Second, some constituents of deicing fluids are toxic to fish and other organisms. Ethylene glycol, in particular, is highly toxic to mammals and can be toxic to aquatic organisms. In addition, some additives such as urea and some surfactants and corrosion inhibitors are either toxic to aquatic organisms or can biodegrade to toxic compounds.”]

Mr. Peters also said that the *Recreational Activities* subsection on page 18 should include a reference to golf courses as a possible nonpoint pollution source.

[Secretary’s Note: In response to this comment, the fourth and fifth sentences of the subsection were revised as follows:

“However, outdoor recreational sites may also include space and impervious areas for the conduct of such recreational pursuits as **golf**, tennis, swimming, and boating **which** may be sources of nonpoint pollution.”]

Mr. Mueller asked that the **SOURCES OF WATER POLLUTION** section be expanded to address proper well abandonment procedures.

[Secretary’s Note: In response to this comment, the following subsection was added after the *Onsite Sewage Disposal Systems* subsection on page 19:

“Improperly Abandoned Wells

One of the most important, yet overlooked, sources of groundwater contamination is wells that are no longer used, but have not been properly sealed when abandoned. Proper well abandonment means filling the well from the bottom up with cement grout or bentonite. The locations of old wells are often long-forgotten, and buildings or roads may have been built over the top of open boreholes. These wells can serve as a means for transmission of contaminants from the land surface to an aquifer and can allow contaminated water to migrate freely from one aquifer to another. This is particularly critical in southeastern Wisconsin, where the open intervals of most wells penetrate many different aquifer units. Even in areas where groundwater contamination potential is considered low because of favorable soil and geological properties, such as Milwaukee and eastern Waukesha Counties, large numbers of improperly abandoned or unaccounted-for old wells create a significant threat to groundwater quality. In addition, an abandoned well can become a convenient receptacle for disposal of trash or a safety hazard.”

The WDNR currently requires that abandonment forms be filed for wells which are properly abandoned. However, there are a large number of unused, abandoned wells. Information on the approximate numbers of such wells is provided in SEWRPC Technical Report No. 37, *Groundwater Resources of Southeastern Wisconsin*.]

Mr. Slawski pointed out that the first word in the **Channelization and Concrete-Lined Channels** subsection on page 19 should be “undegraded.”

Mr. Krohn asked that the section mention that concrete channel lining limits the ability of the channel to buffer itself through infiltration through its bed and banks.

[Secretary’s Note: In response to this comment, the following sentences were inserted at the end of the first paragraph on page 20:

“Finally, lining a channel with concrete significantly impairs the ability for the channel to interact with the groundwater. The ability of the stream to buffer itself through infiltration from the channel to the groundwater is almost completely eliminated and the maintenance of a longitudinally distributed base flow is disrupted because the concrete lining presents a barrier to groundwater inflow along the channel length, with baseflow from groundwater only allowed to enter the channel through drains in the concrete sides or bed.”]

Mr. Slawski directed the Committee member’s attention to Figure II-1, “Range of Buffer Widths for Providing Specific Buffer Functions,” which appears on page 24 and was handed out at the meeting.

Mr. Moroney noted that the length scale for Figure II-1 is meters, but the accompanying text describes buffer widths in feet. He also said that he was concerned that the information in the figure could be misinterpreted as representing absolute standards that must be met in all cases. Finally, he asked what SEWRPC’s involvement was

in development of the figure, given that SEWRPC is listed as a source. Mr. Slawski said that the information in the figure is a compilation of data from multiple sources as presented in the reference cited. Mr. Biebel said a footnote would be added stating that site-specific evaluations would be required to determine buffer parameters, and he said that SEWRPC was listed as a source only to indicate the Commission staff's role in preparing the figure, therefore, the reference could be eliminated.

[Secretary's Note: In response to these comments, SEWRPC was eliminated as a "Source" of the figure, the figure was revised to represent buffer widths in feet, and the following footnote was added to the figure:

"Site-specific evaluations are required to determine the need for buffers and specific buffer characteristics."]

[Secretary's Note: Mr. Moroney's comment prompted the SEWRPC staff to generally reevaluate the listing of SEWRPC as a source for Tables and Figures where the information presented was obtained from the other source, or sources, listed and the involvement of SEWRPC staff was limited to preparation of the Table or Figure or to minor revisions. In such cases, it was decided to eliminate SEWRPC as a source, and those changes to source citations were made, as appropriate, in the chapters reviewed at this meeting.]

Mr. Peters suggested that a paragraph on the need to preserve instream flow to support habitat and water withdrawals be added on either page 14 or 22.

[Secretary's Note: In response to that comment, the following subsection was added after the **Streambank Conditions** subsection on page 22:

"Maintenance of Instream Flow

The maintenance of adequate instream baseflow is essential to supporting aquatic and riparian habitat. The quantity of baseflow can be influenced by several factors, including 1) low flow conditions resulting from periods of drought, 2) the loss of groundwater recharge areas through the introduction of impervious surfaces in a watershed without mitigating features for infiltration of rainfall, and 3) loss of instream flow through consumptive withdrawals."]

Mr. Lubner asked that the references to "bugs" be eliminated in the second paragraph of the **Warmwater and Coldwater Fish Communities** subsection on page 25. That comment has been addressed by using the term "invertebrates" in place of "invertebrate bugs." Mr. Lubner also said that the last sentence in the second paragraph of the subsection implied that deformities, eroded fins, lesions, or tumors on fish species are common in lower-quality streams.

[Secretary's Note: In response to that comment, the sentence was revised to read as follows:

"Deformities, eroded fins, lesions, or tumors on fish species in high-quality streams are generally few to none, **but they may be found to varying degrees in lower-quality streams.**"]

Mr. Lubner suggested that a table be developed listing the scientific names corresponding to the common names of species mentioned in the report and that the common names be used in the report.

[Secretary's Note: In response to that comment, common names will be used in the report, and Appendix A, which is attached to these minutes as Exhibit C, was developed to list the scientific names corresponding to the common names.]

With reference to the listing of coldwater streams in the study area in the last paragraph of the **Warmwater and Coldwater Fish Communities** subsection, Mr. Holschbach noted that Mole Creek is also a coldwater stream.

[Secretary's Note: In response to that comment, the following revisions were made:

“Coldwater streams in the regional water quality management plan update study area that are designated as such in Chapter NR 102, “Water Quality Standards For Wisconsin Surface Waters,” of the *Wisconsin Administrative Code* include Auburn Lake Creek, Chambers Creek, Gooseville Creek, Melius Creek, Nichols Creek, and Watercress Creek in the Milwaukee River Watershed. **In addition, studies of Mole Creek indicate that it also exhibits coldwater stream characteristics, although it has not been officially designated as such in the *Administrative Code*.”]**

Mr. Slawski asked the Committee if the addition of photographs would be helpful in the **Exotic and Invasive Species** subsection, beginning on page 26. Mr. Krohn commended the Commission staff on the subsection and said that the addition of photographs would be useful. The consensus of the Committee was that inclusion of some pictures would enhance the subsection.

[Secretary's Note: The photographs in the attached Exhibit D will be added into the appropriate subsection of the chapter.]

With reference to the last sentence on page 27, which extends onto page 28, Mr. Lubner said that “Pacific” should be eliminated from the description of salmonid species and lake trout, which is a native species, should be eliminated from the list of exotics. Mr. Lubner also asked that “electronic” be changed to “electrical” in the last sentence on page 29. Those revisions to the text have all been made.

Mr. Melcher noted that Asian carp have been found closer to the Chicago Sanitary and Ship Canal than indicated by the last sentence on page 28, which continues on page 29, and that the existing fish exclusion barrier only operates sporadically and the new barrier is not yet completed.

[Secretary's Note: In response to those comments, the following revisions were made:

“Both of these species have been found in the Illinois River, within about **40 to 50** miles of the Chicago Sanitary and Ship Canal, which connects the Great Lakes basin to the Mississippi River basin. **There is an existing electrical fish exclusion barrier that is intended to prevent bighead and silver carp from entering the Canal and a replacement barrier is under construction.**”]

Ms. Nenn asked if the subsequent chapters of TR No. 39, presenting information by watershed would include an inventory of dams and she said that the River Alliance of Wisconsin had done a geographic information system study of dams that she would forward to the SEWRPC staff. Mr. Hahn said that the watershed chapters would include an inventory of dams and he thanked Ms. Nenn for sharing the River Alliance data.

There being no further discussion, a motion to approve preliminary draft Chapter II, “Water Quality Definitions and Issues,” as amended, was made by Mr. Lubner, seconded by Mr. Behrens, and carried unanimously by the Committee.

CONSIDERATION OF CHAPTER III, “DATA SOURCES AND METHODS OF ANALYSIS,” OF SEWRPC TECHNICAL REPORT NO. 39

Mr. Schmidt asked Mr. Slawski to review the preliminary draft of Chapter III, “Data and Methods of Analysis.”

Mr. Slawski began by noting that the MMSD Corridor Study database has been an important tool and the basis for much of the water quality analysis. Mr. Biebel added that Mr. Peters should be commended for his work in conceptualizing and developing the U.S. Geological Survey (USGS) water resources database for the Corridor Study.

Mr. Moroney inquired as to the degree of reliance on water quality sampling data collected by citizen's monitoring organizations. Mr. Slawski replied that the SEWRPC staff was working on obtaining that data, and that, while it would be useful to some degree, it may be difficult to compare with other data collected by MMSD and USGS. Ms. Nenn said that she would send SEWRPC the data compiled by Friends of Milwaukee's Rivers. Mr. Biebel noted that, while an initial decision was made to not use such data, it was now being considered at the urging of several committee members. Mr. Moroney asked that the extent to which citizen's group monitoring data were used be indicated when data sources are discussed in subsequent chapters, since it may not be as reliable as the data collected by government agencies.

Mr. Melching asked if the 1998 through 2001 data analysis period adequately represents existing conditions, since it is now 2005 and the report will not be completed until 2007. Mr. Slawski said that outside the MMSD planning area, data were collected in 2004 at locations specifically designated for the planning effort under an agreement between SEWRPC and the USGS. He also noted that recently collected biological data were obtained from the WDNR. He stated that MMSD only authorized the release of data collected through 2001. Mr. Slawski said that it might be possible to look at additional data from key long-term stations. Mr. Peters said that the MMSD Corridor Study database could be updated for specific locations and parameters, and Ms. Sands indicated that MMSD could approve release of data for key parameters. Mr. Biebel cautioned that comprehensively incorporating additional data may be difficult within the study schedule, and he noted that the time period for which data were collected met the objective of having information for a sufficiently long period after the MMSD Inline Storage System (deep tunnel) came on line. Mr. Melching suggested substituting "post-deep tunnel" for "existing" in describing the condition represented by the water quality data.

[Secretary's Note: In response to those comments, the chapter was reviewed and "baseline" was substituted for "existing" where appropriate. This substitution will also be made throughout the other chapters of Planning Report No. 50 and Technical Report No. 39. The following footnote will be provided after the first use of the term "baseline" in each report:

"SEWRPC has developed an extensive database pertaining to the Southeastern Wisconsin Region, updating that database periodically. A major inventory update effort was carried out in the early 2000s in support of the preparation of new land use and transportation plans and other elements of the comprehensive plan for the Region. The inventory information used in this report is generally based upon year 2000 conditions, the base year for the planning program, except in some instances where historic or newer inventory data was deemed important to present. In the case of water quality data, the baseline condition was established as the period from 1998 through 2001, supplemented by sampling data collected in 2004. This period adequately represents baseline conditions in the study area and it also is representative of conditions within the MMSD planning area following the construction of major MMSD sewerage system facilities, including the Inline Storage System."

Because almost all of the data analysis for the Menomonee River watershed has been completed, and that analysis is considered to adequately represent baseline conditions, it is not proposed to include additional post-2001 data in the analyses. Consideration will be given to the use of such data, where available, for other watersheds.]

Mr. Hoppe asked if the riparian corridor condition analysis described on page 15 was tied into the ongoing WDNR wetland restoration initiative. Mr. Biebel replied that that would be looked into to try to make the two programs consistent.

[Secretary's Note: The riparian corridor analysis is compatible with the WDNR wetland program mentioned by Mr. Hoppe. The SEWRPC staff keeps abreast of developments in that program through its participation on the WDNR wetland team.]

There being no further discussion, a motion to approve preliminary draft Chapter III, "Data and Methods of Analysis," as amended, was made by Mr. Moroney, seconded by Ms. Nenn, and carried unanimously by the Committee.

CONSIDERATION OF CHAPTER IV, "WATER USE OBJECTIVES AND WATER QUALITY STANDARDS," OF SEWRPC TECHNICAL REPORT NO. 39

Mr. Schmidt asked Mr. Hahn to review the preliminary draft of Chapter IV, "Water Use Objectives and Water Quality Standards," of SEWRPC Technical Report No. 39.

Mr. Hahn noted that, as was the case with Chapter I, certain portions of Chapter IV had already been reviewed by the Committee when they considered Chapter VII of SEWRPC Planning Report No. 50.

With reference to the subsection "**Wisconsin Department of Natural Resources and State Water Quality Management,**" on page 4, Mr. Krohn said that WDNR and the Wisconsin Department of Commerce (WDOC) were working out authority on construction site erosion control for single- and two-family residential building sites and that he would look into this issue further.

[Secretary's Note: In subsequent conversations between Mr. Krohn and Mr. Hahn it was established that, the ultimate intent of Chapter NR 216, "Storm Water Discharge Permits," of the *Wisconsin Administrative Code* is for construction erosion control for single- and two-family residential building sites to be regulated by WDOC. However, at the present time, such sites are regulated by WDNR because WDNR does not consider the WDOC requirements for erosion control and stormwater management to be equivalent to the requirements set forth in NR 216. Thus, the words "single- and two-family residential building sites and" were deleted from the subject subsection.]

Mr. Hahn noted that the WDNR and SEWRPC staffs had discussed the regulatory water use classifications for streams as set forth by watershed on Maps IV-1 through IV-6. He said that:

- The WDNR staff asked that outstanding and exceptional resource waters be indicated on Map IV-3 for the Milwaukee River watershed, which is the only watershed in the study area having streams in those categories.
- The outstanding and exceptional resource classifications are stated in Table IV-1.
- Since it was important to preserve the cold water, fish and aquatic life, limited forage fish, limited aquatic life, and variance designations in order to cross-reference the maps with the water quality standards, it was proposed to add the following three additional categories to Map IV-3:
 - "Cold Water Biological Community (CWBC) and Outstanding Resource Water,"
 - "Cold Water Biological Community (CWBC) and Exceptional Resource Water, and
 - "Fish and Aquatic Life and Exceptional Resource Water."

[Secretary's Note: Map IV-3 was revised to include those categories and a copy is attached to these minutes. Table IV-1 was revised to correctly characterize Nichols Creek as an outstanding resource water (page 13).]

Mr. Bennett asked if Table IV-1, listing regulatory water use objectives, could be revised to indicate river mile locations for the various stream reaches defined in the table. Mr. Hahn replied that such designations would be useful and could be accomplished through application of geographic information system techniques, but the addition of river mile designations is an effort beyond the scope of the study, and therefore, they would not be added. He did note that Township, Range and U.S. Public Land Survey one-quarter one-quarter Section locations are provided in some cases, and he said that the locations given in the table could be reviewed to see if street crossings of streams could be added to provide additional clarification of the extent of stream reaches. Mr. Boxhorn said that the table is intended to be consistent with the information in Chapters NR 102 and 104 of the *Wisconsin Administrative Code* and the WDNR "State of the Basin" report series.

[Secretary's Note: Table IV-1 was reviewed and it was found that reaches were adequately described using street locations where appropriate. During preparation of the draft chapter, the SEWRPC staff clarified the extent of certain reaches based on revising reach boundaries using street locations. Given that the official regulatory water use classifications were set forth as currently documented in Chapter III, it was decided to mirror the regulatory description. It is suggested that, if the WDNR undertakes revision of the regulatory water use objectives in the future, they consider adding river mile designations to define stream reaches.]

Also with regard to Table IV-1, Mr. Nettesheim asked that the watersheds be listed alphabetically and in bold letters to better distinguish them from the individual stream listing. Those revisions were made.

Ms. Anderson noted that in the Root River watershed portion of Table IV-1, on page 25, "Whitehall Park Pond" should be "Whitnall Park Pond." That revision has also been made.

Mr. Moroney asked how the standards compare to those in place at the time that the initial regional water quality management plan was prepared in 1979. Mr. Biebel replied that they were very similar.

Mr. Melching noted that, in Table IV-2 on page 28 the "Maximum for streams" and "Maximum for lakes during spring turnover" categories below the "Total Phosphorus" heading should be indented. Those changes were made.

Mr. Lubner asked for clarification of the Ammonia Nitrogen standard in Table IV-2. Mr. Boxhorn replied that the Ammonia Nitrogen standards are dependent on the hardness of the water and they are set forth in Table IV-8 on page 37.

[Secretary's Note: Footnote "i" in Table IV-2 was expanded to include the following sentence:

"The standards for Ammonia Nitrogen are set forth in Table IV-8."]

Mr. Krohn asked that the units be clarified in Tables IV-3 and IV-4.

[Secretary's Note: Tables IV-3 and IV-4 were revised to eliminate footnote c, and to add "(microgram per liter, except as noted)" under each column heading.]

Also with reference to Tables IV-3 and IV-4, Ms. Nenn asked that the distinction be made between public and nonpublic water supply. The "public" and "nonpublic" water supply terms are taken directly from Chapter NR 105 of the *Wisconsin Administrative Code*, however, the meaning of nonpublic is confusing because, in this case, it is intended to mean "a use other than for water supply."

[Secretary's Note: To clarify this, the column headings in Tables IV-3 and IV-4 were revised to read "For Use as a Water Supply" instead of "Public Water Supply" and "Not Intended for Use as a Water Supply" instead of "Nonpublic Water Supply."]

There being no further discussion, a motion to approve preliminary draft Chapter IV, "Water Use Objectives and Water Quality Standards," as amended, was made by Ms. Krause, seconded by Mr. Lubner, and carried unanimously by the Committee.

UPDATE ON WATER QUALITY MODELING ACTIVITIES SUPPORTING THE PLANNING PROGRAM

At Mr. Schmidt's request, Mr. Hahn summarized the water quality modeling activities currently underway for the planning program.

[Secretary's Note: The table used to present this item is attached hereto as Exhibit E.]

DETERMINATION OF NEXT MEETING DATE AND LOCATION

The next meeting of the Advisory Committee was tentatively scheduled for July 27, 2005, at 1:30 p.m. at the Mequon City Hall in the upstairs Council Chambers.

ADJOURNMENT

The May 25, 2005, meeting of the Advisory Committee on the regional water quality management plan update was adjourned at 3:20 p.m. on a motion by Mr. Behrens, seconded by Mr. Bennett, and carried unanimously by the Committee.

* * *

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Exhibit A

TEXT TO BE ADDED TO SEWRPC PLANNING REPORT NO. 50, CHAPTER II

Climate Change

Changes in climate over the last century, attributed to both natural and anthropogenic influences, have been extensively studied in recent years. The most significant indicator of climate change presented in the scientific literature is an increase in mean annual air temperature over the last century.¹ That change has influenced other climatological parameters, hydrology, water quality, and natural ecosystems. Considerable effort has also been directed toward applying computer models to predict future climate change based on different assumptions regarding natural and anthropogenic influences on climate. Such climate change modeling is generally accomplished at a global scale, and it is not directly applicable to more-localized areas such as the regional water quality management plan study area.

The calibration and validation of the continuous simulation water quality model that was developed for the regional water quality management plan update were based on simulation of hydrologic conditions using meteorological data for the time period from 1994 through 2001 and the alternative plans were developed based on simulation of the period from 1988 through 1997, during which rainfall characteristics were consistent with the long-term mean. Those simulations were made to develop streamflow, nonpoint source pollutant loads, and instream concentrations of pollutants from both point and nonpoint sources.

Streamflow is a major, climate-related influence on washoff of nonpoint source pollutants and a determinant of instream concentrations. A recent study of streamflow trends in the United States, prepared by the U.S. Geological Survey (USGS) under its National Streamflow Information Program and summarized in a USGS fact sheet² indicates increasing trends in annual minimum, annual median, and annual maximum streamflows at 435 stream gages that are part of the USGS national Hydroclimatic Data Network (HCDN). The gages of the HCDN have been identified as gages where the main influence on streamflows is climatic variations, thus, they are suitable for the study of long-term climate change. The USGS study fact sheet states that “the observed trends ... appear to have occurred around 1970 as an abrupt rather than gradual change.” The simulation periods applied for the regional water quality management plan update are both after 1970, indicating that they should adequately reflect the climate conditions subsequent to the abrupt change in streamflows identified by the USGS.

The effects of climate change over the planning period, which extends to the year 2020, cannot be explicitly evaluated in the context of the water quality model. However, model input parameters approximate the current state of the climate and they are considered to adequately represent the anticipated climate regime over the relatively short planning period.

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¹*Great Lakes Water Quality Board of the International Joint Commission, Climate Change and Water Quality in the Great Lakes Basin,* August 2003, www.ijc.org/php/publications/html/climate/.

²*U.S. Geological Survey, “Streamflow Trends in the United States,”* Fact Sheet 2005-3017, March 2005.

Exhibit B

TEXT TO BE ADDED TO SEWRPC TECHNICAL REPORT NO. 39, CHAPTER I

UNITS OF GOVERNMENT

Civil Divisions

Superimposed on the irregular study area boundary as defined by watershed boundaries is a pattern of local political boundaries. As shown on Map I-3, the watersheds lie primarily within Fond du Lac, Milwaukee, Ozaukee, Racine, Sheboygan, Washington, and Waukesha Counties with small portions in northern Kenosha and northeastern Dodge Counties. Eighty-eight civil divisions lie in part or entirely within the greater Milwaukee watersheds, as also shown on Map I-3 and in Table I-1. Geographic boundaries of the civil divisions are an important factor which must be considered in any watershed-based planning effort like the regional water quality management plan update program, since the civil divisions form the basic foundation of the public decision-making framework within which intergovernmental, environmental, and developmental problems must be addressed.

Special-Purpose Units of Government

Special-purpose units of government are of particular interest to the water quality management update planning program. Among these are the legally established, active town sanitary and utility districts created to provide various urban-related services, such as sanitary sewerage, water supply, and solid waste collection and disposal, to designated portions of rural towns with urban service needs. There are 11 such districts within the study area: the Brookfield Sanitary District No. 4 in the Town of Brookfield; the Caddy Vista Sanitary District, the Caledonia Utility District No. 1, the Crestview Sanitary District, and the North Park Sanitary District in the Town of Caledonia; the Lake Ellen Sanitary District in the Town of Lyndon; the Silver Lake Sanitary District in the Town of West Bend; the Town of Scott Sanitary District in the Town of Scott; the Wallace Lake Sanitary District in the Towns of Barton and Polk; the Waubeka Area Sanitary District in the Town of Fredonia; and the Yorkville Sewer Utility District No. 1 in the Town of Yorkville.

Inland lake protection and rehabilitation districts are special-purpose units of government created pursuant to Chapter 33 of the *Wisconsin Statutes*. There are three such districts in the watershed: the Big Cedar Lake Protection and Rehabilitation District, the Little Cedar Lake Protection and Rehabilitation District, and the Silver Lake Protection and Rehabilitation District. Lake protection and rehabilitation district powers include 1) study of existing water-quality conditions to determine the causes of existing or expected future water-quality problems, 2) control of aquatic macrophytes and algae, 3) implementation of lake rehabilitation techniques, including aeration, diversion, nutrient removal or inactivation, dredging, sediment covering, and drawdown, 4) construction and operation of water-level-control structures, 5) control of nonpoint source pollution, and 6) creation, operation, and maintenance of a water safety patrol unit.

Other Agencies with Resource-Management Responsibilities Related to Water Quality

Superimposed upon these local and special-purpose units of government are those State and Federal agencies with important responsibilities for water quality management and resource conservation and management. These include the Wisconsin Department of Natural Resources (WDNR); the University of Wisconsin-Extension; the State Board of Soil and Water Conservation Districts; the U.S. Department of the Interior, U.S. Geological Survey; the U.S. Environmental Protection Agency; the U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS); and the U.S. Army Corps of Engineers.

Exhibit C

Table A-1

SCIENTIFIC NAMES OF ORGANISMS DISCUSSED IN THIS REPORT

Common Name	Scientific Name ^a
Fish ^b	
Alewife	<i>Alosa pseudoharengus</i>
American Brook Lamprey	<i>Lampetra appendix</i>
American Eel ^c	<i>Anguilla rostrata</i>
Banded Darter	<i>Etheostoma zonale</i>
Banded Killifish ^c	<i>Fundulus diaphanus</i>
Bighead Carp	<i>Hypophthalmichthys nobilis</i>
Bigmouth Shiner	<i>Notropis dorsalis</i>
Black Bullhead	<i>Ictalurus melas</i>
Black Carp	<i>Mylopharygodon piceus</i>
Black Crappie	<i>Pomoxis nigromaculatus</i>
Blackchin Shiner	<i>Notropis heterodon</i>
Blackfin Cisco	<i>Coregonus nigripinnis</i>
Blacknose Dace	<i>Rhinichthys atratulus</i>
Blacknose Shiner	<i>Notropis heterolepis</i>
Blackside Darter	<i>Percina maculata</i>
Blackstripe Topminnow	<i>Fundulus notatus</i>
Bloater ^c	<i>Coregonus hoyi</i>
Bluegill	<i>Lepomis macrochirus</i>
Bluntnose Minnow	<i>Pimephales notatus</i>
Bowfin	<i>Amia calva</i>
Brassy Minnow	<i>Hybognathus hankinsoni</i>
Brook Silverside	<i>Labidesthes sicculus</i>
Brook Stickleback	<i>Culaea inconstans</i>
Brook Trout	<i>Salvelinus fontinalis</i>
Brown Bullhead	<i>Ictalurus nebulosus</i>
Brown Trout	<i>Salmo trutta</i>
Bullhead Minnow	<i>Pimephales vigilax</i>
Burbot	<i>Lota lota</i>
Central Mudminnow	<i>Umbra limi</i>
Central Stoneroller	<i>Campostoma anomalum</i>
Channel Catfish	<i>Ictalurus punctatus</i>
Chinook Salmon	<i>Oncorhynchus tshawytscha</i>
Cisco (Lake Herring) ^c	<i>Coregonus artedii</i>
Coho Salmon	<i>Oncorhynchus kisutch</i>
Common Carp	<i>Cyprinus carpio</i>
Common Shiner	<i>Notropis cornutus</i>
Creek Chub	<i>Semotilus atromaculatus</i>
Deepwater Cisco	<i>Coregonus johanna</i>
Emerald Shiner	<i>Notropis atherinoides</i>
Fantail Darter	<i>Etheostoma flabellare</i>
Fathead Minnow	<i>Pimephales promelas</i>
Freshwater Drum	<i>Aplodinotus grunniens</i>
Gizzard Shad	<i>Dorosoma cepedianum</i>
Golden Redhorse	<i>Moxostoma erythrurum</i>
Golden Shiner	<i>Notemigonus crysoleucas</i>
Goldfish	<i>Carassius auratus</i>
Grass Carp	<i>Ctenopharyngodon idella</i>
Grass Pickerel	<i>Esox americanus vermiculatus</i>
Greater Redhorse ^d	<i>Moxostoma valenciennesi</i>
Green Sunfish	<i>Lepomis cyanellus</i>
Hornyhead Chub	<i>Nocomis biguttatus</i>
Iowa Darter	<i>Etheostoma exile</i>

Table A-1 (continued)

Common Name	Scientific Name ^a
Fish ^b (continued)	
Johnny Darter	<i>Etheostoma nigrum</i>
Kiyi	<i>Coregonus kiyi</i>
Lake Chub	<i>Couesius plumbeus</i>
Lake Chubsucker ^c	<i>Erimyzon sucetta</i>
Lake Trout	<i>Salvelinus namaycush</i>
Lake Whitefish	<i>Coregonus clupeaformis</i>
Largemouth Bass	<i>Micropterus salmoides</i>
Largescale Stoneroller	<i>Campostoma oligolepis</i>
Least Darter ^c	<i>Etheostoma microperca</i>
Logperch	<i>Percina caprodes</i>
Longear Sunfish ^d	<i>Lepomis megalotis</i>
Longnose Dace	<i>Rhinichthys cataractae</i>
Longnose Gar	<i>Lepisosteus osseus</i>
Mimic Shiner	<i>Notropis volucellus</i>
Mottled Sculpin	<i>Cottus bairdi</i>
Ninespine Stickleback	<i>Pungitius pungitius</i>
Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>
Northern Hog Sucker	<i>Hypentelium nigricans</i>
Northern Pike	<i>Esox lucius</i>
Northern Redbelly Dace	<i>Phoxinus eos</i>
Orangespotted Sunfish	<i>Lepomis humilis</i>
Pallid Shiner	<i>Notropis amnis</i>
Pearl Dace	<i>Semotilus margarita</i>
Pirate Perch	<i>Aphredoderus sayanus</i>
Pugnose Minnow	<i>Notropis emiliae</i>
Pugnose Shiner ^d	<i>Notropis anogenus</i>
Pumkinseed	<i>Lepomis gibbosus</i>
Quillback	<i>Carpoides cyprinus</i>
Rainbow Darter	<i>Etheostoma caeruleum</i>
Rainbow Smelt	<i>Osmerus mordax</i>
Rainbow Trout	<i>Salmo gairdneri</i>
Redfin Shiner ^d	<i>Notropis umbratilis</i>
Redside Dace ^c	<i>Clinostomus elongatus</i>
River Carpsucker	<i>Carpoides carpio</i>
River Redhorse	<i>Moxostoma carinatum</i>
River Shiner	<i>Notropis blennioides</i>
Rock Bass	<i>Ambloplites rupestris</i>
Rosyface Shiner	<i>Notropis rubellus</i>
Round Goby	<i>Neogobius melanostomus</i>
Ruffe	<i>Gymnocephalus cernuus</i>
Sand Shiner	<i>Notropis stramineus</i>
Sea Lamprey	<i>Petromyzon marinus</i>
Shorthead Redhorse	<i>Moxostoma macrolepidotum</i>
Silver Carp	<i>Hypophthalmichthys molitrix</i>
Silver Lamprey	<i>Ichthyomyzon unicuspis</i>
Silver Redhorse	<i>Moxostoma anisurum</i>
Slender Madtom	<i>Noturus exilis</i>
Slenderhead Darter	<i>Percina phoxocephala</i>
Slimy Sculpin	<i>Cottus cognatus</i>
Smallmouth Bass	<i>Micropterus dolomieu</i>
Smallmouth Buffalo	<i>Ictiobus bubalus</i>
Southern Redbelly Dace	<i>Phoxinus erythrogaster</i>
Spotfin Shiner	<i>Notropis spilopterus</i>
Spottail Shiner	<i>Notropis hudsonius</i>
Starhead Topminnow	<i>Fundulus notatus</i>
Stonecat	<i>Noturus flavus</i>
Striped Shiner ^e	<i>Notropis chrysocephalus</i>
Suckermouth Minnow	<i>Phenacobius mirabilis</i>

Table A-1 (continued)

Common Name	Scientific Name ^a
Fish ^b (continued) Tadpole Madtom Threespine Stickleback Tubenose Goby Walleye Warmouth Weed Shiner ^c White Bass White Crappie White Perch White Sucker Yellow Bass Yellow Bullhead Yellow Perch	<i>Noturus gyrinus</i> <i>Gasterosteus aculeatus</i> <i>Proterorhinus marmoratus</i> <i>Stizostedion vitreum vitreum</i> <i>Lepomis gulosus</i> <i>Notropis texanus</i> <i>Morone chrysops</i> <i>Pomoxis annularis</i> <i>Morone americana</i> <i>Catostomus catostomus</i> <i>Morone mississippiensis</i> <i>Ictalurus natalis</i> <i>Perca plavescens</i>
Crustacea Fishhook Waterflea Rusty Crayfish Spiny Waterflea Waterfleas	<i>Cercopagis pengoi</i> <i>Orconectes rusticus</i> <i>Bythotrephes longimanus</i> ^f Genus <i>Daphnia</i>
Insects Caddisflies Mayflies Midges Stoneflies True Flies	Order Trichoptera Order Ephemeroptera Family Chironomidae Order Plecoptera Order Diptera
Mollusks Quagga Mussel Zebra Mussel	<i>Dreissena bugensis</i> <i>Dreissena polymorpha</i>
Plants Curly Leaf Pondweed Eurasian Water Milfoil Flowering Rush Purple Loosestrife	<i>Potamogeton crispus</i> <i>Myriophyllum spicatum</i> <i>Butomus umbellatus</i> <i>Lythrum salicaria</i>

^aExcept where otherwise noted, the scientific name listed is the generic name and specific epithet.

^bHybrids of fish species are not included in this table.

^cThis species is designated as being of special concern by the Wisconsin Department of Natural Resources.

^dThis species is designated as being threatened by the Wisconsin Department of Natural Resources.

^eThis species is designated as being endangered by the Wisconsin Department of Natural Resources.

^fSome literature refers to this species by the taxonomically invalid name, *Bythotrephes cederstroemi*.

Source: George C. Becker, *Fishes of Wisconsin*, University of Wisconsin Press, 1983; U.S. Department of Agriculture Integrated Taxonomic Information System; Wisconsin Department of Natural Resources; and SEWRPC.

Exhibit E

RWQMPU / 2020 FP
 WATER QUALITY MODELING STATUS
 05/25/2005

Watershed	Task 1 Model Structure	Task 2 Model Data Sets	Task 3 Hydrology Calibration	Task 4 Quality Calibration	Task 5 Integrate with Estuary/Lake	Task 6 Production Runs	Task 7 Document Results	Comments
Kinnickinnic River	Completed	Completed	Completed	Underway				Initial SEWRPC review of Task 1 and Task 2 complete SEWRPC review of reach definition memo complete Corrections requested based on Task 2 review have been addressed Final Task 1 memo approved by SEWRPC Initial SEWRPC review of hydrology calibration memo (including revised Task 2) complete
Menomonee River	Completed	Completed	Completed	Completed				Initial SEWRPC review of Task 1 and Task 2 complete SEWRPC review of reach definition memo complete Corrections requested based on Task 1 and 2 review have been addressed Final Task 1 memo approved by SEWRPC Initial SEWRPC review of hydrology calibration memo complete. Revised memo currently being reviewed by SEWRPC Initial SEWRPC review of water quality calibration memo complete. Revised memo currently being reviewed by SEWRPC
Milwaukee River	Completed	Completed	Underway					Model structure has been agreed upon. Tetra Tech has completed dataset SEWRPC completed development of precipitation and temperature datasets to use for calibration Task 1 and Task 2 memos have not been received
Oak Creek	Completed	Completed	Completed	Being revised for comments from SEWRPC review				Initial SEWRPC review of Task 1 and Task 2 complete SEWRPC review of reach definition memo complete Corrections requested based on Task 2 review have been addressed Final Task 1 memo approved by SEWRPC Initial SEWRPC review of hydrology calibration memo complete Initial SEWRPC review of water quality calibration memo complete
Root River (upper)	Completed	Completed	Underway					Initial SEWRPC review of Task 1 and Task 2 complete No reach definition memo submitted Corrections requested based on Task 1 and 2 review have been addressed Final Task 1 memo approved by SEWRPC
Root River (lower)	Completed	Completed	Underway					Model structure has been agreed upon. Tetra Tech has completed dataset SEWRPC completed development of precipitation and temperature datasets for use in calibration Task 1 and Task 2 memos have not been received
Harbor Estuary and Lake Michigan Nearshore	Completed	Completed	Underway	Underway				Model grid system refined Review of initial calibration memo by SEWRPC underway