

MINUTES

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

DATE: June 13, 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

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

John R. Behrens

Marsha B. Burzynski
(for James L. McNelly)
Elizabeth Hellman
(for Kristine M. Krause)

Judy Jooss (for Diane M. Georgetta)
William A. Kappel
Shirley Krug
(for Kevin L. Shafer)
Charles S. Melching

Cheryl Nenn
Stephen Poloncsik
(for Peter G. Swenson)
Thomas A. Wiza

Staff Members and Guests

Joseph E. Boxhorn

Troy E. Deibert

SEWRPC Commissioner
Chief Environmental Engineer, Southeastern
Wisconsin Regional Planning Commission
Director, Racine County Division of Planning and Development
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
Regional Water Resources Planner, Wisconsin
Department of Natural Resources
Environmental Department, We Energies
Town and Country Resource Conservation and Development, Inc.
Director of Public Works, City of Wauwatosa
Watershed Planning Manager, Milwaukee Metropolitan
Sewerage District
Associate Professor, Civil & Environmental
Engineering, Marquette University
Riverkeeper/Project Director, Friends of Milwaukee's Rivers
Senior Staff Engineer, U.S. Environmental Protection Agency
Director of Engineering and Public Works, City of Cedarburg

Senior Planner, Southeastern Wisconsin Regional
Planning Commission
Water Resources Engineer, HNTB Corporation

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 APRIL 18, 2007

Mr. Schmidt asked Mr. Hahn to review the highlights of the minutes of the April 18, 2007 meeting of the Committee.

Mr. Hahn reviewed Exhibit B in the minutes. He stated that Figures X-1 through X-6 in the exhibit are the figures that were presented to the Committee in the preliminary draft of Chapter X, "Recommended Water Quality Management Plan," of SEWRPC Planning Report No. 50, *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds*. He indicated that because the graphs in these figures were useful in the analysis of the projected achievement of water use objectives of the recommended plan, they will be retained in the chapter. He stated that Figures X-1a through X-6a have been added to the chapter. He noted that the graphs in these figures present the same data as Figures X-1 through X-6 in a different manner.

Mr. Hahn reviewed Exhibit D in the minutes. He stated that Maps X-11a through X-11c show stream reaches for which the establishment or expansion of riparian buffers are to be considered. He noted that these maps have been added to the draft of Chapter X of SEWRPC Planning Report No. 50.

Mr. Hahn reviewed Exhibit E. He stated that Map X-11d shows candidate areas for prairie or wetland restoration. He noted this map has been added to Chapter X of SEWRPC Planning Report No. 50.

There being no additions or revisions, the minutes were approved, on a motion by Ms. Krug, seconded by Mr. Behrens, and carried unanimously.

CONSIDERATION OF THE PRELIMINARY DRAFT OF CHAPTER III, "EXISTING AND HISTORIC SURFACE WATER AND GROUNDWATER CONDITIONS," 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 preliminary draft of the chapter.

Before beginning the review of the chapter, Mr. Boxhorn explained that this chapter and Chapter IV summarize the information presented in SEWRPC Technical Report No. 39. Chapter III summarizes information on water quality, toxicity, biological conditions, channel conditions, and achievement of water use objectives and Chapter IV summarizes information on sources of water pollution. He noted that:

- Most of the information presented in these chapters has been previously reviewed by the Committee,
- As part of the summary, some quantities are expressed on a study areawide basis,
- Most of the graphs contained in figures in the preliminary draft chapter have been previously reviewed by the Committee, although some have been rescaled to facilitate comparisons with other graphs,
- Some of the tables in the preliminary draft chapter are consolidations of tables from multiple chapters of Technical Report No. 39, and

- The preliminary draft chapters contain some new tables that summarize information that was presented in figures or on maps in Technical Report No. 39.

Mr. Boxhorn then began the review of the chapter.

Ms. Jooss and Mr. Melching noted typographical errors, editorial errors, and minor omissions in the preliminary draft chapter.

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

Mr. Boxhorn reviewed the section entitled **QUANTITY OF SURFACE WATER**.

Mr. Boxhorn reviewed the **SURFACE WATER QUALITY CONDITIONS IN THE GREATER MILWAUKEE WATERSHEDS: 1975-2004** section, beginning with the subsection **Water Quality of Streams**. He explained that Table III-2 is a consolidation of the longitudinal trend tables in Technical Report No. 39. He said that Tables III-3 and III-4 set forth percentages of sampling stations showing statistically significant trends, which summarizes the information in the tables on time-based trends presented in Appendix C of Technical Report No. 39. He noted that for any parameter, the percentages of sampling stations shown in Tables III-3 and III-4 may not total to 100 percent because some sampling stations had insufficient data to assess trends.

In reference to *E. coli* concentrations discussed on pages 3 and 4, Mr. Melching asked whether five years constituted a sufficient data record for assessing time-based trends. Mr. Boxhorn responded that it does give an indication of short-term trends. He noted that Dr. Sandra McLellan of the Great Lakes WATER Institute had suggested that trends in fecal coliform bacteria should give an indication of trends in *E. coli*.

[Secretary's Note: The following sentences were added after the first full sentence on page 5:

“It is important to note that the short data record for *E. coli* precludes detection of long-term trends. Because *E. coli* is a major component of fecal coliform bacteria, long-term trends in the concentration of fecal coliform bacteria should give an indication of likely trends in *E. coli* concentration.”]

Mr. Melching asked whether the time periods used for plotting concentrations were also used for the trend analyses. Mr. Boxhorn responded that the trend analyses were conducted on a continuous basis using linear regression.

Mr. Melching commented that in the early 1990s, the U.S. Geological Survey released a memorandum indicating that the laboratory methods they had used for analyzing phosphorus concentrations were inconsistent and should not be used for future analyses. He asked whether there was a similar problem in MMSD's data. Mr. Boxhorn replied that he did not know. Mr. Melching stated that he would provide Commission staff a copy of the memorandum.

Mr. Boxhorn reviewed the subsection entitled **Water Quality of Lakes and Ponds**.

Mr. Boxhorn then reviewed the **Water Quality of the Milwaukee Harbor Estuary and the Adjacent Nearshore Lake Michigan Areas** subsection. He noted that Table III-7 summarizes time-based trends in the outer harbor and nearshore stations on the basis of the percentages of sampling stations showing statistically significant trends. He noted that for any parameter, the percentages of sampling stations shown in Table III-7 may not total to 100 percent because some sampling stations had insufficient data to assess trends.

Mr. Melching asked why different depths are indicated in Table III-6 for the synonymous sampling stations such as NS-28 and OH-01. Mr. Boxhorn explained that the depths indicated represent the mean depths of the samples

that MMSD collected at these stations for surface, middle, and bottom depths. He added that while the synonymous stations represent samples taken at the same location, they are parts of different surveys conducted by MMSD. He noted that MMSD conducted sampling for these surveys on different days. Mr. Melching requested that a footnote be added to Table III-6 explaining this.

[Secretary's Note: The following footnote was added to the second column heading in Table III-6 after the word "synonym":

"aSynonymous stations are stations used in two surveys. While they represent the same location, sample collection by MMSD was conducted on different dates."]

Mr. Boxhorn reviewed the subsection entitled **Water Quality at Lake Michigan Beaches**.

Ms. Nenn asked why Figure III-34 only included beach advisory data for the year 2000. Mr. Boxhorn explained that this figure was from an analysis conducted by HydroQual for the MMSD bacteria source, fate, and transport study to compare the timing of beach advisories with the timing of combined sewer overflows in the year 2000.

Mr. Boxhorn reviewed the section entitled **TOXICITY CONDITIONS OF THE GREATER MILWAUKEE WATERSHEDS**. He noted that Commission staff is still reviewing the data on PCBs in water and will present it at a later meeting.

Mr. Boxhorn reviewed the **BIOLOGICAL CONDITIONS OF THE GREATER MILWAUKEE WATERSHEDS** section. He indicated that Figure III-35 is new and summarizes the number of fish species by tolerance class on a watershed basis. He noted that similar figures in Technical Report No. 39 summarized these species on a subwatershed basis. He also indicated that Table III-10 summarizes the numbers of vertebrate species in the watersheds and Table III-11 summarizes the numbers of endangered, threatened, and special-concern species in the watersheds. He noted that lists of these species are given in Technical Report No. 39.

Mr. Boxhorn reviewed the section entitled **CHANNEL CONDITIONS AND STRUCTURES**. He indicated that Table III-12 presents totals of the numbers of dams and drop structures shown on maps in Technical Report No. 39. He also indicated that Figure III-36 is new and shows data on riparian buffers on a watershed basis. He noted that similar figures in Technical Report No. 39 summarized the buffer data on a subwatershed basis.

Mr. Melching asked whether sufficient data were available to modify Table III-12 to include dams that have been removed. Mr. Boxhorn replied that this would be investigated.

[Secretary's Note: The requested information has been added to Table III-12 and a revised table is attached hereto as Exhibit A.]

Ms. Jooss noted that Figure III-36 is mislabeled as Figure III-3.

[Secretary's Note: The labeling of Figure III-36 was corrected.]

Mr. Boxhorn reviewed the section entitled **ACHIEVEMENT OF WATER USE OBJECTIVES**. He indicated that Tables III-13 and III-15 were consolidated from tables in Technical Report No. 39. He noted that tributary streams without any data for assessing achievement of water use objectives were omitted from these tables.

Mr. Boxhorn the reviewed the **GROUNDWATER CONDITIONS** and **SUMMARY** sections.

A motion to approve preliminary draft Chapter III, "Existing Historic and Existing Surface Water and Groundwater Conditions," of SEWRPC Planning Report No. 50, *A Regional Water Quality Management Plan*

Update for the Greater Milwaukee Watersheds, as amended, was made by Ms. Anderson, seconded by Ms. Krug, and carried unanimously by the Committee.

**CONSIDERATION OF THE PRELIMINARY DRAFT OF CHAPTER IV,
“SOURCES OF WATER POLLUTION,” 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 preliminary draft of the chapter.

Mr. Boxhorn began review of the chapter.

Ms. Jooss and Mr. Melching noted typographical errors, editorial errors, and minor omissions in the preliminary draft chapter.

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

Mr. Boxhorn reviewed the sections entitled **POLLUTION SOURCE CATEGORIES** and **DATA AND ANALYSIS PROCEDURES**.

Mr. Boxhorn then reviewed the **POINT SOURCE POLLUTION** section. He indicated that Table IV-2 is new and summarizes the numbers of combined sewer overflow sites and separate sanitary sewer overflow sites in the watersheds. He noted that the individual sites are listed in tables and located on maps in Technical Report No. 39. He indicated that Table IV-3 is new and summarizes the numbers of industrial dischargers in the watersheds. He noted that the individual dischargers are listed in tables in Technical Report No. 39.

Mr. Boxhorn reviewed the section entitled **NONPOINT SOURCE POLLUTION**. He indicated that Table IV-4 is new and summarizes the numbers of stormwater discharge permits in the study area. He noted that the permit holders are listed in tables in Technical Report No. 39. He stated that Table IV-5 is a consolidation of several tables from Technical Report No. 39. He noted that a column was added to this table to indicate which municipalities have municipal stormwater discharge permits. He indicated that Table IV-6 is new and summarizes the numbers of solid waste disposal sites in the study area. He noted that these facilities are listed in tables and their locations are indicated on maps in Technical Report No. 39.

Mr. Melching asked whether the statement on page 6 of the draft that communities comprising 62 percent of the area of the Root River watershed have been issued stormwater discharge permits and the statement on page 7 that communities comprising 42 percent of the study area have been or will be issued stormwater discharge permits are correct. Ms. Anderson commented that the percentage for the Root River watershed appears to be correct. Mr. Hahn said that these figures would be double checked.

[Secretary’s Note: Commission staff checked the percentages and found that they are correct.]

Mr. Boxhorn reviewed the section entitled **POLLUTANT LOADINGS**. He stated that Tables IV-7 through IV-12 present pollutant loadings on a watershed basis. He indicated that subtotals have been added to these tables to indicate the loadings of pollutants to all of the main rivers in the study and loadings to only those rivers that discharge to the Milwaukee outer harbor. He noted that Commission staff is still reviewing the revised loads for the Milwaukee River watershed and that these will be added to the tables when review is complete. He also indicated that Table IV-13 is new and summarizes the wet weather and dry weather loading analysis data presented as figures in Technical Report No. 39.

Mr. Melching stated that the “Subtotal to Harbor” designation is confusing because it suggests that loadings from the Jones Island wastewater treatment plant should be included. Mr. Boxhorn explained that this subtotal is

intended to indicate that load to the harbor from the rivers. Mr. Behrens suggested adding a clarifying footnote to Tables IV-7 through IV-12. Mr. Boxhorn replied that either the subtotal name will be reworded or a footnote will be added to these tables.

[Secretary's Note: The row labels in the fourth row down in Tables IV-7 through IV-12 were changed to read (This label appears in bold letters in the document. Added text is indicated by shading):

“Subtotal from Rivers to Harbor”

The row labels in the fifth row down in Tables IV-7 though IV-12 were changed to read (This label appears in bold letters in the document. Added text is indicated by shading):

“Percent of Load from Rivers to Harbor”]

Mr. Melching asked what the double dashes in Table IV-13 indicate. Mr. Boxhorn responded that the dash indicate that insufficient data were available for performing the loading analysis at this station and noted that this table was based on measured data. Mr. Melching suggested adding a footnote to the table explaining the meaning of the double dashes.

[Secretary's Note: The following footnote was added after the double dashes in Table IV-13:

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

Mr. Boxhorn reviewed the section entitled **SOURCES OF GROUNDWATER CONTAMINATION**. He indicated that Table IV-15 is new and summarizes the inventories of bulk agricultural chemical storage facilities, salt storage facilities, and bulk fuel storage facilities presented in Technical Report No. 39.

Mr. Behrens asked how current the salt storage data in Table IV-15 were. He noted that newer salt storage facilities provide better containment. Mr. Boxhorn responded that the data were obtained in 2006.

[Secretary's Note: The data given in Table IV-15 reflect conditions in 2005. The following note was added to Table IV-15:

“NOTE: The inventory data summarized on this table is subject to periodic change due to the nature of the facilities. For the most recent data, the Wisconsin Department of Agriculture, Trade and Consumer Protection; the Wisconsin Department of Commerce; and the Wisconsin Department of Transportation should be contacted.”]

Mr. Boxhorn reviewed the **SUMMARY** section. He indicated that Figure IV-1 is new and presents a comparison of pollutant loadings by source between 1975 and 2000. He noted that the total pollutant loadings for most pollutants decreased during that period. He commented that the comparison presented by the figure should be considered rough because these estimates were derived using different simulation models which had different underlying assumptions.

Ms. Nenn asked what WWTP load signified in Figure IV-1. Mr. Boxhorn replied that it indicates the load from sewage treatment plants.

A motion to approve preliminary draft Chapter IV, “Sources of Water Pollution,” of SEWRPC Planning Report No. 50, *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds*, as amended, was made by Ms. Krug, seconded by Mr. Melching, and carried unanimously by the Committee.

**CONSIDERATION OF THE PRELIMINARY DRAFT OF THE
“COST-EFFECTIVENESS ANALYSIS OF WASTEWATER TREATMENT
OPTIONS FOR THE CITY OF SOUTH MILWAUKEE,” SUBSECTION OF
CHAPTER X, “RECOMMENDED WATER QUALITY MANAGEMENT PLAN,”
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. Hahn to review the preliminary draft of the subsection.

Mr. Hahn explained that the City of South Milwaukee is under a court-ordered stipulation that requires that a number of improvements and upgrades be implemented at the South Milwaukee wastewater treatment plant by 2014 and that the City is currently in the process of upgrading the facility. He said that the purpose of this subsection was to examine whether it would be more cost-effective for the City to continue to maintain this facility or to abandon it and connect to the MMSD system. He noted that the preliminary draft of the subsection has been provided to MMSD, the WDNR, and the City of South Milwaukee. He commented that he assumes that the lack of response from the City indicates that they find the draft to be acceptable.

Mr. Hahn explained the economic analyses of alternatives in some detail, and he described the considerations which led to the recommendation that the City continue with its program to upgrade its wastewater treatment plant and not connect to the MMSD South Shore plant at this time.

A motion to approve the preliminary draft subsection, *Cost-Effectiveness Analysis of Wastewater Treatment Options for the City of South Milwaukee*, of Chapter X, “Recommended Water Quality Management Plan,” of SEWRPC Planning Report No. 50, *A Regional Water Quality Management Plan Update for the Greater Milwaukee Watersheds*, subject to approval of the subsection by the City of South Milwaukee, was made by Mr. Kappel, seconded by Ms. Jooss, and carried unanimously by the Committee.

PREVIEW OF IMPLEMENTATION PLAN

Mr. Schmidt then asked Mr. Hahn to present a preview of the implementation plan for the regional water quality management plan update.

Mr. Hahn stated that the Commission staff is currently developing the plan implementation chapter and that it will assign responsibilities for implementation to both governments and the private sector and establish an institutional framework for implementation.

[Secretary’s Note: Mr. Hahn’s PowerPoint presentation is attached hereto as Exhibit B.]

Mr. Hahn then thanked the members of the Committee for their time and effort in reviewing and commenting on the Technical and Planning Reports. He then reviewed the remaining chapters from the two reports that will be presented to the Committee. He indicated that the implementation chapter of Planning Report No. 50 should be presented at the August meeting of the Committee. He noted that the forecast chapter of Planning Report No. 50 and summary chapters for Planning Report No. 50 and Technical Report No. 39 will be presented at subsequent meetings. He indicated his intent to hold three more Advisory Committee meetings and to present the plan to the Regional Planning Commission for its approval at the Commission’s meeting in December 2007. Mr. Schmidt indicated that public information meetings will be held on the plan in September or October 2007 at several locations. He invited the Committee to attend these meetings.

OLD BUSINESS

There was no old business.

NEW BUSINESS

Ms. Krug distributed posters and handouts for MMSD's Lake Michigan Rain Garden Initiative.

DETERMINATION OF NEXT MEETING DATE AND LOCATION

The next meeting of the Advisory Committee was scheduled for Tuesday, August 7, 2007, from 1:30 to 3:30 p.m. at the Mequon City Hall in the upstairs Council Chambers.

ADJOURNMENT

The June 13, 2007, meeting of the Advisory Committee on the regional water quality management plan update was adjourned at 2:50 p.m. on a motion by Ms. Krug, seconded by Mr. Behrens and carried unanimously by the Committee.

ADDITIONAL COMMENTS ON PRELIMINARY DRAFT CHAPTER III, "EXISTING AND HISTORIC SURFACE WATER AND GROUNDWATER CONDITIONS," OF SEWRPC PR NO. 50 AS PROVIDED BY MR. CHARLES S. MELCHING

Mr. Melching asked that the method used to detect differences between the average values of water quality parameters in upstream areas of the Kinnickinnic, Menomonee, and Milwaukee Rivers and the Milwaukee River estuary be described.

[Secretary's Note: The third sentence in the last paragraph on page 3 was revised to read (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.):

"In addition, for the mainstems of the Kinnickinnic, Menomonee, and Milwaukee Rivers, differences between average values from sampling stations located in upstream areas and the average values of parameters from sampling stations in the Milwaukee River estuary were assessed **using analysis of variance (ANOVA). Data were log-transformed for some parameters, in order to meet the normal distribution assumption of ANOVA.**"

Mr. Melching noted that, in the discussion of chlorophyll-*a* concentrations on page 5, there is an incorrect reference indicating that Figure III-3 includes data from the Root River Johnson Park station and he asked that the reference be checked.

[Secretary's Note: The second to last sentence first full paragraph on page 5 was revised to read:

"**Concentrations** of chlorophyll-*a* at the Johnson Park station were higher during the period 1994-1997 than they were during the period 1987-1993."

Mr. Melching noted that the second sentence in the first full paragraph on page 8 contains two different descriptions of the number of stations.

[Secretary's Note: The second sentence in the first full paragraph on page 8 was revised to read:

"BOD concentrations at some sampling stations are positively correlated with concentrations of fecal coliform bacteria and some nutrients such as ammonia, organic nitrogen, and total phosphorus."

Mr. Melching asked that, in the discussion of nitrogen trends on pages 12 and 13, an explanation be given for why higher concentrations of total nitrogen, ammonia, and nitrite were found in the estuary than in the sections of the Kinnickinnic, Menomonee, and Milwaukee Rivers.

[Secretary's Note: The following sentences were added after the ninth sentence of the second full paragraph on page 12:

“Sediment deposits in the estuary have been shown to release ammonia to the overlying water.⁴⁵ This difference may be a consequence of that release.”

The following sentence was added after the eleventh sentence of the second full paragraph on page 12:

“This could be the result of either lower rates of ammonia release from sediment in,⁴⁶ or larger volumes of water flowing through, the Milwaukee River portion of the estuary.”

The following sentences were added after the sixth sentence in the first full paragraph on page 13:

“As noted above, sediment deposits in the estuary have been shown to release ammonia to the overlying water.⁴⁷ This difference may be a consequence of that release.”

The following sentence was added after the third sentence of the first full paragraph on page 14:

“The cause of this difference is not known.”

The following sentence was added to the end of the fifth bullet point on page 15:

“This may be due, in part, to release of ammonia from sediment in the estuary.”]

Mr. Melching commented that some of the discussion on time-based trends in dissolved phosphorus and total phosphorus concentrations was inconsistent with Tables III-3 and III-4. He also noted that decreasing trends in dissolved phosphorus was mentioned twice, with different descriptions of sites.

[Secretary's Note: The data for dissolved phosphorus and total phosphorus in Tables III-3 and III-4 were recalculated. Some numbers were found to be transposed in the Tables and were corrected. The corrected tables are attached hereto as Exhibit C.

The last full sentence on page 15 was revised to read:

“Trends toward decreasing concentrations of **dissolved** phosphorus were detected at several sites, but especially in upstream reaches of the Milwaukee River.”]

⁴⁵J. Val Klump, Patrick D. Anderson, Donald C. Szmania, and Kim Weckerly, *Milwaukee Harbor Sediment Oxygen Demand Study Final Report*, Great Lakes WATER Institute Technical Report No. 2004-B1, 2004.

⁴⁶Ibid.

⁴⁷Ibid.

Mr. Melching asked that the data for copper and lead in Table III-3 be double checked.

[Secretary's Note: The data for copper and lead in Table III-3 were recalculated. Some numbers for copper were found to erroneous in the table and were corrected. The data for lead were found to be correct. The corrected tables are attached hereto as Exhibit C.]

**ADDITIONAL COMMENTS ON PRELIMINARY DRAFT
CHAPTER IV, "SOURCES OF WATER POLLUTION," OF SEWRPC
PR NO. 50 AS PROVIDED BY MR. CHARLES S. MELCHING**

Mr. Melching commented that the fourth full paragraph on page 18 was unclear and asked that it be revised to clarify its meaning.

[Secretary's Note: The third sentence of the fourth full paragraph on page 18 was revised to read:

"Unfortunately, it is not possible to match well abandonment records with the original WCRs. **Areas with high likelihoods of improperly abandoned wells can be identified using the WCRs; however, for most areas estimates made this way represent an underestimate of the total number of wells drilled.**"

The following footnote was added at the end of the fourth full paragraph on page 18:

"The WDNR has increased its surveillance of abandoned wells. The Department is currently in the process of developing a centralized database containing information on abandoned wells."]

Mr. Melching pointed out that the number given for the annual average load of fecal coliform bacteria in the fourth paragraph on page 21 has two decimal points.

[Secretary's Note: The first sentence of the fourth paragraph on page 21 was revised to read:

"The current annual average load of fecal coliform bacteria to streams of the greater Milwaukee watersheds and directly to Lake Michigan is estimated to be **87,697.06** trillion cells per year."]

Exhibit A

Table III-12

DAMS AND DROP STRUCTURES WITHIN THE GREATER MILWAUKEE WATERSHEDS: 2005

Watershed	Dams	Drop Structures	Dams Removed from 1988 through 2005
Kinnickinnic River.....	1	14	0
Menomonee River.....	7	28	1
Milwaukee River.....	70	6	8 ^a
Oak Creek.....	1	8	0
Root River.....	8	6	0
Lake Michigan Direct Drainage Area	1	2	0
Total	88	64	9

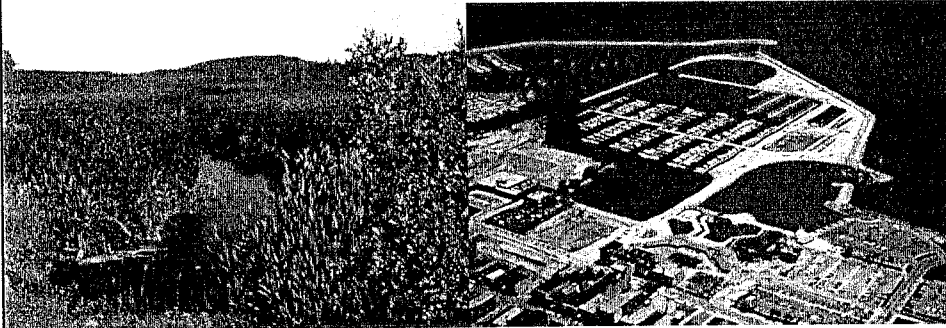
^aThe dam on Pigeon Creek at the Lutheran Seminary was breached after 2005 and was intended to be removed. That dam is not included in this number.

Source: Wisconsin Department of Natural Resources, Inter-Fluve, Inc., River Alliance of Wisconsin, and SEWRPC.

Exhibit B



**REGIONAL WATER QUALITY
MANAGEMENT PLAN UPDATE (208 PLAN):
*Introduction to Implementation Component***



SEWRPC Staff Presentation to the
Technical Advisory Committee for the SEWRPC
Regional Water Quality Management Plan Update

June 13, 2007



Draft Implementation Plan

- In progress

- Assignment of implementation responsibilities

- Establishment of an institutional framework for implementation of the recommended plan



Draft Implementation Plan

- Establishment of an institutional framework for implementation of the recommended plan
 - Regional water quality management authority with taxing power (unlikely)
 - Regional partnership, such as Milwaukee Region's Partnership Initiative (MRPI)



Watershed Approach to Implementation

- The "watershed approach" to plan implementation has the following characteristics:
 - Unifying coalition
 - Identification of specific actions to be taken (201 and 208 plans)
 - Establishment of an implementation schedule/milestones
 - Implementation of actions
 - Monitoring and tracking of progress toward water quality goals
 - Adaptation



Draft Implementation Plan

- Watershed-based permit will be considered
 - Address point sources, including urban stormwater
 - Incorporate existing WPDES permits for WWTP, municipal storm sewer systems, and Concentrated Animal Feeding Operations (CAFOs)
 - Undecided how unpermitted agricultural/rural nonpoint sources would be addressed



ISSUES RELATED TO WATERSHED PERMITTING

- Works best with one authority or responsible entity in a watershed
- Unlikely to be approved by WDNR or USEPA without a single party that is responsible for compliance with permit conditions
- Can be one, or several, permits
- Unpermitted sources, such as some agricultural operations
 - A possible creative approach to agricultural implementation is for overall authority to pay the difference between USDA Conservation Reserve Enhancement Program (CREP) payments and farmer's cost to remove land from production
 - Implement agricultural recommendations through nutrient management plans and/or land and water resource management plans
 - Watershed "coalition" could make grant funding available for implementation of agricultural components of NR 151



ISSUES RELATED TO WATERSHED PERMITTING

- Could be a vehicle to tie individual permits together (e.g., municipal stormwater discharge permits and wastewater treatment plant permits) along with actions to implement plan in unregulated areas
- Could eventually have a regional NR 216 stormwater discharge permit with intergovernmental agreements between municipalities with WPDES permits, connecting individual community or community group permits



Ideas Being Considered for Draft Implementation Plan

- Regional partnership
 - “Umbrella organization”
 - SEWRPC, MMSD, WDNR, USGS, colleges and universities, non-governmental organizations, counties, municipalities, business community
 - Scientific task force on risks of water pollution
 - Risk-based water quality standards
 - Watershed Action Plan
 - Pilot watershed

Exhibit C

Table-III-3

ANNUAL TRENDS IN WATER QUALITY PARAMETERS AT SAMPLING STATIONS IN THE GREATER MILWAUKEE WATERSHEDS: 1975-2001^a

Constituent	Trend (percent sampling stations) ^{b,c}		
	Entire Study Area		
	Increase	Decrease	No Change
Bacteria and Biological			
Fecal Coliform ^d	8	41	51
<i>E. coli</i> ^d	3	0	41
Chlorophyll- <i>a</i> ^d	8	26	62
Chemical/Physical			
Alkalinity	8	10	77
Biochemical Oxygen Demand ^d	0	85	15
Chloride ^d	72	0	28
Dissolved Oxygen	18	18	64
Hardness	15	3	77
pH	3	46	51
Specific Conductance	41	8	51
Suspended Material			
Total Suspended Sediment	0	5	15
Total Suspended Solids	44	8	44
Nutrients			
Ammonia ^d	0	82	18
Kjeldahl Nitrogen ^d	8	26	66
Nitrate ^d	38	10	52
Nitrite ^d	10	8	77
Organic Nitrogen ^d	33	5	59
Total Nitrogen ^d	28	18	66
Dissolved Phosphorus ^d	31	18	51
Total Phosphorus ^d	16	38	46
Metals			
Arsenic ^d	0	74	5
Cadmium ^d	0	90	3
Chromium ^d	5	56	33
Copper ^d	67	18	15
Lead ^d	0	77	18
Mercury ^d	3	41	49
Nickel ^d	0	49	44
Zinc ^d	64	3	28

^aTrends were assessed through linear regression analysis. A trend was considered significant if the regression showed a significant slope at $P = 0.05$ or less. Because MMSD stopped sampling during the winter in 1987, data from winter months are not included in the annual trend analysis.

^bTrends were assessed at five sampling stations along the Kinnickinnic River, eight sampling stations along the Menomonee River, ten sampling stations along the Milwaukee River, seven sampling stations along Oak Creek, and nine sampling stations along the Root River.

^cFor any constituent, the total percentage of sampling stations assessed along a river may not add up to 100 percent because data at some sampling stations were insufficient for assessing time-based trends.

^dThese data were log-transformed before being entered into regression analysis.

Source: SEWRPC.

Table-III-4

ANNUAL TRENDS IN WATER QUALITY PARAMETERS AT SAMPLING STATIONS IN THE GREATER MILWAUKEE WATERSHEDS: 1975-2001^a

Constituent	Trend (percent sampling stations) ^{b,c}														
	Kinnickinnic River			Menomonee River			Milwaukee River			Oak Creek			Root River		
	Increase	Decrease	No Change	Increase	Decrease	No Change	Increase	Decrease	No Change	Increase	Decrease	No Change	Increase	Decrease	No Change
Bacteria and Biological															
Fecal Coliform ^d	0	80	20	12	50	38	0	70	30	14	0	86	11	11	78
<i>E. coli</i> ^d	0	0	60	12	0	38	0	0	70	0	0	0	0	0	33
Chlorophyll- <i>a</i> ^d	0	60	40	0	50	50	0	20	80	43	0	57	0	11	67
Chemical/Physical															
Alkalinity	0	0	100	0	25	75	30	0	70	0	14	86	0	11	67
Biochemical Oxygen Demand ^d	0	100	0	0	100	0	0	100	0	0	100	0	0	33	67
Chloride ^d	100	0	0	75	0	25	90	0	10	71	0	29	33	0	67
Dissolved Oxygen	20	0	80	50	0	50	10	30	60	0	43	57	11	11	78
Hardness	0	0	100	0	12	88	60	0	40	0	0	100	0	0	78
pH	0	20	80	0	50	50	10	40	50	0	100	0	22	0	78
Specific Conductance	40	0	60	38	12	50	100	0	0	0	0	100	11	22	67
Suspended Material															
Total Suspended Sediment	0	0	0	0	0	25	0	0	20	0	0	14	0	22	11
Total Suspended Solids	60	0	40	50	12	38	80	0	20	0	0	100	22	22	33
Nutrients															
Ammonia ^d	0	60	40	0	100	0	0	100	0	0	100	0	0	44	56
Kjeldahl Nitrogen ^d	20	40	40	12	50	38	0	30	70	0	0	100	11	11	78
Nitrate ^d	60	0	40	37	38	25	90	0	10	0	0	100	0	11	89
Nitrite ^d	40	0	60	0	38	62	0	10	90	0	14	86	0	0	78
Organic Nitrogen ^d	80	0	20	38	0	62	0	10	90	57	0	43	22	11	67
Total Nitrogen ^d	60	0	40	12	25	63	60	0	40	0	0	100	11	0	89
Dissolved Phosphorus ^d	60	20	20	50	25	25	10	30	60	57	0	43	0	11	89
Total Phosphorus ^d	40	40	20	12	50	38	0	80	20	43	0	57	0	11	89
Metals															
Arsenic ^d	0	100	0	0	88	12	10	90	0	0	100	0	0	11	89
Cadmium ^d	0	100	0	0	100	0	0	100	0	0	100	0	0	56	11
Chromium ^d	40	20	40	0	75	25	10	70	20	0	29	71	0	56	22
Copper ^d	100	0	0	88	0	12	70	10	20	100	0	0	0	67	33
Lead ^d	0	100	0	0	88	12	0	100	0	0	100	0	0	11	67
Mercury ^d	0	100	0	0	62	38	0	50	40	0	14	86	11	0	67
Nickel ^d	0	20	80	0	62	38	0	70	30	0	0	100	0	67	0
Zinc ^d	40	0	60	88	0	12	90	10	0	100	0	0	0	0	78

PRELIMINARY DRAFT

Table-III-4 Footnotes

^aTrends were assessed through linear regression analysis. A trend was considered significant if the regression showed a significant slope at $P = 0.05$ or less. Because MMSD stopped sampling during the winter in 1987, data from winter months are not included in the annual trend analysis.

^bTrends were assessed at five sampling stations along the Kinnickinnic River, eight sampling stations along the Menomonee River, ten sampling stations along the Milwaukee River, seven sampling stations along Oak Creek, and nine sampling stations along the Root River.

^cFor any constituent, the total percentage of sampling stations assessed along a river may not add up to 100 percent because data at some sampling stations were insufficient for assessing time-based trends.

^dThese data were log-transformed before being entered into regression analysis.

Source: SEWRPC.

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03/28/07, 06/04/07, Revised 06/27/07

PRELIMINARY DRAFT