

MINUTES

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

DATE: March 20, 2007

TIME: 1:00 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

Sharon L. Gayan
(for James L. McNelly)
Elizabeth Hellman
(for Kristine M. Krause)
Andrew A. Holschbach

Judy Jooss (for Diane M. Georgetta)
William A. Kappel
Shirley Krug
(for Kevin L. Shafer)
James F. Lubner

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

Paul E. Mueller
Cheryl Nenn
Jeffrey S. Nettesheim
Thomas A. Wiza

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
Basin Supervisor, Wisconsin Department of Natural Resources
Environmental Department, We Energies
Director, Ozaukee County Planning, Resources,
and Land Management Department
Town and Country Resource Conservation and Development, Inc.
Director of Public Works, City of Wauwatosa
Watershed Planning Manager, Milwaukee Metropolitan
Sewerage District
Sea Grant Advisory Services Specialist,
University of Wisconsin Sea Grant Institute
Director of Government Affairs, Metropolitan Builders
Association of Greater Milwaukee
Associate Professor, Civil & Environmental
Engineering, Marquette University
Administrator, Washington County Planning and Parks Department
Riverkeeper/Project Director, Friends of Milwaukee's Rivers
Director of Utilities, Village of Menomonee Falls
Director of Engineering and Public Works, City of Cedarburg

Staff Members and Guests

Joseph E. Boxhorn	Senior Planner, Southeastern Wisconsin Regional Planning Commission
Marsha B. Burzynski	Regional Water Resources Planner, Wisconsin Department
Troy E. Deibert	Water Resources Engineer, HNTB Corporation
James F. Fratrack	Regional Water Program Expert, Wisconsin Department of Natural Resources
Jess Kilgore	Student Intern, University of Wisconsin-Parkside
Ronald J. Printz	Principal Engineer, 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 SEWRPC staff.

APPROVAL OF MINUTES OF THE MEETING OF JANUARY 31, 2007

Mr. Schmidt asked Mr. Hahn to review the highlights of the minutes of the January 31, 2007, meeting of the Committee.

Mr. Hahn noted that an addendum to the minutes was provided to the Committee, and he reviewed the addendum which provides a response to a comment by Mr. Bunker regarding the recommendation to evaluate the size of the aeration system at the MMSD Island wastewater treatment plant.

Mr. Hahn summarized the addition to the *Biosolids Plan* subsection 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*. That addition describes the MMSD facilities plan recommendations regarding biosolids operations. Those recommendations had not been finalized at the time of the January 31, 2007, Committee meeting.

Mr. Hahn updated the Committee on the status of the subsection on wastewater treatment options for the City of South Milwaukee, noting that it was still in preparation.

Mr. Hahn said that the informational meeting to present Chapter 4, "Nonpoint Source Technology Analysis," of the State-of-the-Art Report to interested Committee members was held on March 14, 2007. He mentioned that Mr. Deibert reviewed the chapter for the Committee members in attendance, and that the review was helpful in providing additional background on the effectiveness and costs of various nonpoint source pollution control measures considered under the planning effort.

Mr. Hahn said that, in the Secretary's note on page 9 of the minutes, the first sentence in the added text would be deleted because it is superseded by information in a text addition that is included later in the same Note.

Mr. Hahn noted that, in response to comments received following Commission staff presentations regarding the water quality management plan, the subsection entitled **Approaches to Developing the Recommended Plan** was revised to refer to integrated and regulatory watershed-based plans approaches, rather than integrated and regulatory watershed-based plans.

Finally, Mr. Hahn pointed out that a subsection on *Recommended Intercommunity Trunk Sewers* was added to the chapter as set forth in the minutes.

Mr. Schmidt then asked if the Committee had any additions or revisions to make to the minutes of the January 31, 2007, meeting.

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

CONSIDERATION OF THE PRELIMINARY DRAFT OF THE “INTRODUCTION,” “LAND USE PLAN ELEMENT,” AND “SURFACE WATER QUALITY PLAN ELEMENTS,” SECTIONS 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 chapter, beginning with the *Chloride Reduction Programs* subsection on page 33 of the revised draft of the chapter.

Before, beginning that review, Mr. Hahn noted that the minutes of the January 31, 2007, meeting also include Exhibit B, which is an extensive revision of the subsection describing the recommended coordinated programs to detect and eliminate illicit discharges and to control pathogens. He said that the revised version has eliminated consideration of stormwater disinfection units based on Committee comments at the January 31 meeting.

Mr. Hahn then began the review of the chapter.

Mr. Lubner asked that the second sentence of the first full paragraph on page 35 be revised to clarify the reference to “disconnected roof drains.”

[Secretary’s Note: That third sentence was revised as follows. (In this Secretary’s Note, and in subsequent Notes, revised and added text is indicated in bold letters for clarification only. The report text will not be bold.)

“The number and location of **the** roof drains **which are to be disconnected** should be determined with technical advice and guidance from municipalities and residents to consider impacts on private and public sewer infiltration and inflow, residence foundation and basement structural considerations, and icing conditions.”

The second last sentence of the first full paragraph on page 35 was revised as follows:

“It is recommended that consideration be given to directing those roof drains **which are to be disconnected** to rain barrels and/or rain gardens, with the runoff from those roofs ultimately being infiltrated.”]

Ms. Nenn asked that the reference to new dams in the third full paragraph on page 37 be eliminated, noting that she did not think the plan should encourage construction of new dams. Mr. Hahn replied that the Commission staff had given some thought to whether the reference to new dams should be included, and the reference was retained because it is possible that new dams could be proposed and constructed, subject to Wisconsin Department of Natural Resources (WDNR) regulatory review and approval. Ms. Gayan stated that there is a rigorous WDNR permitting process for new dams and she suggested that the report include language from the State *Statute* related to the WDNR review and approval process for proposed new dams. Ms. Burzynski suggested that *Administrative Code* requirements regarding maintenance plans be mentioned. Mr. Lubner commented that it is advisable to keep the plan recommendation regarding dam abandonment and associated restoration.

[Secretary’s Note: The second last sentence in the third full paragraph on page 37 of the revised draft of Chapter X was clarified to read as follows:

“Therefore, it is recommended that abandonment and **associated** restoration plans be prepared as part of the design of new, or reconstructed, dams and prior to abandonment of existing dams.”

The following paragraph was added after the second full paragraph on page 37 of the revised draft:

“It is important to recognize that dams are man-made structures constructed of materials subject to erosion, corrosion, weathering, and deterioration. These structures deteriorate over time. If ongoing maintenance and repair measures are not conducted, a dam can fail, causing property damage downstream and possible loss of life. It is recommended that dam owners perform ongoing maintenance and repair of their dams. This is particularly important for high-hazard dams.^{75,}”

The following footnote was added at the end of that sentence:

“
⁷⁵Chapter VI of this report provides information on the WDNR authority to regulate construction of dams affecting navigable bodies of water. That authority is granted under Chapter 31 of the *Wisconsin Statutes*. Chapter NR 333 of the *Wisconsin Administrative Code* sets forth the extensive State requirements related to dam design and construction and includes a requirement that dams have operation, inspection, and maintenance plans.”]

Ms. Nenn asked that the Kinnickinnic River sediment contamination remediation project be mentioned in the second paragraph on page 39 and that the recommendation regarding extension of the Milwaukee Harbor Estuary Area of Concern be revised to include the Kinnickinnic River project. Ms. Burzynski said that the Moss-American USEPA Superfund project for the Little Menomonee River should also be mentioned. Mr. Hahn inquired as to the status of implementation the Little Menomonee River Superfund project. (The remediation project has been implemented from W. Brown Deer Road to W. Mill Road.) Ms. Gayan replied that the next two phases of the project, extending downstream from W. Mill Road may start later this year.

[Secretary’s Note: The Milwaukee Harbor Estuary Area of Concern (AOC) extends along the Kinnickinnic River upstream to Chase Avenue. The Kinnickinnic River Environmental Restoration Project is within the AOC. The second paragraph on page 39 of the revised draft of Chapter X was revised to read as follows:

“Management of contaminated sediment sites is recommended. **As of 2006, remediation projects were ongoing for two sites: the Moss-American Superfund site along the Little Menomonee River and the Kinnickinnic River Environmental Restoration Project located in the Kinnickinnic River between S. Kinnickinnic Avenue and W. Becher Street.** Management programs for remediation of contaminated sediment at Cedar Creek, Zeunert Pond, Thiensville Millpond, and Estabrook Impoundment should be reviewed and implemented. Ideally, remediation efforts should be coordinated from upstream to downstream to minimize downstream transport of contaminants; however, this concern alone should not serve as a barrier should an opportunity arise to remediate a downstream site. In support of this, it is recommended that consideration be given to extending the Milwaukee Harbor Estuary Area of Concern to include **the Moss-American Superfund site and** the contaminated portions of Cedar Creek in Cedarburg. It is also recommended that implementation of the Milwaukee Estuary Remedial Action Plan be continued and supported.”]

Mr. Hahn noted that the SEWRPC staff proposed to modify Item No. 1 in the list on page 40.

[Secretary's Note: Item No. 1 on page 40 was changed as follows:

“To the extent practicable, protect remaining natural stream channels, including small tributaries and shoreland wetlands that provide habitat for the continued survival, growth, and reproduction of a sustainable fishery throughout the study area.”]

Mr. Hahn mentioned that the inland lake water quality management plan subelement was set forth in Appendix O, which focuses on the 20 major lakes in the study area (lakes with surface areas of 50 acres or more) and which also recognizes the management plan that the Milwaukee County Department of Parks, Recreation and Culture has prepared for its ponds and lagoons.

Mr. Hahn stated that the SEWRPC staff also proposed to modify the first sentence in the first full paragraph on page 42.

[Secretary's Note: Item No. 1 on page 40 was changed as follows:

“It is recommended that programs be implemented to discourage **unacceptably high numbers of non-migratory** waterfowl from congregating near beaches and other water features.”]

Ms. Gayan asked that the plan mention the new signs developed and posted by WDNR to indicate three different bacteria conditions at public beaches. Ms. Gayan and Ms. Nenn noted that beach use advisories are issued when *E. coli* counts are found in the range from 235 through 1,000 per 100 ml and that beaches are closed when the count exceeds 1,000 per ml.

[Secretary's Note: The following was added after the sixth sentence in the first paragraph in the subsection **Public Beaches** on page 41:

“In 2004, the Wisconsin Beach Monitoring Program developed advisory signs to inform the public about water quality conditions based on testing for *E. coli*. These signs were used on monitored beaches during the 2006 beach season. A green informational sign is posted when *E. coli* counts are below the 235 count per 100 ml standard for issuing advisories. This sign also gives a general warning, indicating that natural bodies of water will always hold some risk. In addition, local health departments have the option of posting a blue sign indicating good water quality with the green sign. A yellow “caution sign” is posted when the standard for issuing advisories is exceeded and a red “closed” sign is posted when concentrations of *E. coli* exceed 1,000 cells per 100 ml.”]

Ms. Gayan said that 20 coastal beaches in Wisconsin with high bacteria counts, including McKinley and South Shore beaches in Milwaukee County, had been selected for sanitary surveys paid for through grants from the Great Lakes Protection Fund. Ms. Burzynski suggested that a plan recommendation be added calling for sanitary surveys to be conducted at coastal beaches with high bacteria counts.

[Secretary's Note: The following recommendation was added after the first bulleted item in the **Public Beaches** subsection on page 41:

- “Sanitary surveys to identify sources of pollution be performed at beaches with high bacteria counts and that those surveys apply USEPA standards.⁴⁵”

⁴⁵*Twenty coastal beaches in Wisconsin with high bacteria counts, including McKinley and South Shore beaches in Milwaukee County, were selected for sanitary surveys paid for through grants from the Great Lakes Protection Fund.”]*

Mr. Holschbach asked that the ***Coastal Zone Management*** subsection on page 42 be expanded to provide more explanation of the Lakewide Management Plan and its recommendations.

[Secretary’s Note: The following was added after the third sentence in the ***Coastal Zone Management*** subsection on page 42 and the fourth sentence in that subsection was changed to be the beginning of a paragraph.

“That plan contains recommendations regarding a number of issues, including ballast water control, control of combined and separate sanitary sewer overflows, development of agricultural pollution prevention strategies, remediation of legacy contaminated sediment sites, protection of drinking source water, protection of wildlife habitat, stewardship actions, implementation of Great Lakes Areas of Concern Remedial Action Plans, fisheries management, and filling of gaps in data on the Lake. The plan calls for biennial updates for review and revision of goals, strategies, and recommendations.⁴⁶

⁴⁶*The initial plan and subsequent updates are available for download from the USEPA at <http://www.epa.gov/glnpo/michigan.html>.”]*

There followed some discussion of the issue of disposal of pharmaceutical products as set forth on pages 42 and 43. Ms. Nenn asked if pharmacies should be involved in collection of pharmaceutical products that are to be discarded. Ms. Burzynski replied that there are laws against pharmacies recollecting drugs, and Mr. Boxhorn said that if narcotics are to be collected, they must go directly to law enforcement agencies and then be destroyed. Ms. Nenn said that it would be better if drugs could be directly dropped off at police stations. Ms. Krug mentioned that that approach had been adopted at a community in California. Ms. Nenn asked that other collection options be addressed in the report, and Mr. Hahn said that would be done.

[Secretary’s Note: The following was added after the last sentence in the second full paragraph on page 43:

“In addition, Wisconsin allows some unused cancer and chronic disease drugs and supplies to be donated to participating pharmacies or medical facilities for use by other patients. Rules governing this are set forth in Chapter HFS 148 of the *Wisconsin Administrative Code*. Consideration could also be given to establishing collection centers for pharmaceuticals at law enforcement offices. It is important to note that under current Wisconsin hazardous waste rules, unless the collected household pharmaceuticals are screened to exclude those that are also considered hazardous waste under the Federal Resource Conservation and Recovery Act, law enforcement offices participating in this sort of collection would be regulated as permanent household hazardous waste collection facilities. The inability or reluctance of law enforcement agencies to comply with hazardous waste requirements might discourage participation in this sort of collection option.⁴⁷

⁴⁷*Effective June 27, 2006, the WDNR developed an enforcement discretion memorandum that conditionally exempts from the State’s hazardous waste and solid waste rules household pharmaceutical waste collected by law enforcement officials or collected at*

household pharmaceutical waste collection facilities or events. This enforcement discretion memorandum will remain in effect until June 27, 2007. The WDNR will evaluate the impacts of exercising enforcement discretion after one year. Based on the findings, the memorandum will be withdrawn or the appropriate rule revisions will be initiated, whereupon the enforcement discretion may be extended for additional two-year periods until the revised rules are in effect.”]

In reviewing the chapter section on the integrated watershed-based approach, Mr. Hahn noted that it was originally anticipated that the difference in cost between physical-chemical treatment and blending at the South Shore plant would be greater than it was ultimately determined to be. As a result, physical-chemical treatment with chemical flocculation became the recommended approach.

Ms. Nenn inquired whether increased secondary treatment capacity was looked at for the MMSD South Shore wastewater treatment plant. Ms. Krug responded that physical-chemical treatment is a form of secondary treatment. Mr. Printz said that the original cost evaluations considered expansion of secondary (biological) treatment and it was found that such an expansion was prohibitively costly relative to other options.

Mr. Hahn then proceeded with a detailed review of the **INTEGRATED WATERSHED-BASED APPROACH** section and the **RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN** section.

Mr. Aquino asked if blending was considered as a means of increasing the treatment capacity of the MMSD South Shore plant because it could be less costly than other options. Mr. Hahn replied that that was the case.

Ms. Krug made the following points regarding the integrated approach and recommended plan sections:

- The last-minute cost data for the blending option that was provided to SEWRPC resulted in a change to the anticipated integrated approach.
- The MMSD staff has less uncertainty than the SEWRPC staff regarding whether or not the draft USEPA policy on peak wet weather discharges from publicly owned treatment works serving separate sanitary sewer systems applies to the South Shore plant.
- The MMSD staff believes that USEPA would also be involved in determining if the draft blending policy applies to the MMSD system.
- The cost estimates for the various treatment options at the South Shore plant involve uncertainty that could affect the final decision of which approach to implement.
- In cases where such uncertainty exists, the MMSD 2020 facilities plan generally calls for further study beyond what would be done at the systems level.

Mr. Hahn responded that the options of blending and of physical-chemical treatment with chemical flocculation have similar components, thus, the two cost estimates would “track” each other and the relative relationship between the costs would remain similar. He also noted that the draft sections under consideration were provided to the lead consultant on the project and to the MMSD legal staff for review prior to providing the sections to the Committee.

[Secretary’s Note: The version of the chapter reviewed by the MMSD legal staff was a previous version that reached a different conclusion regarding the draft recommended plan prior to receiving complete blending cost information from the consultant team. However, the information on the regulatory aspects of blending was essentially unchanged between the two versions.]

Ms. Krug noted that the recommended South Shore treatment capacity analysis could significantly impact what needs to be done at the plant. She said the need to implement recommended plan components should be monitored relative to population and adaptations should be made based on that monitoring. Finally, Ms. Krug said that the conclusion to recommend physical-chemical treatment with chemical flocculation was too strong, and she asked that the following sentence be deleted from the first partial paragraph on page 9 of the integrated approach/recommended plan insert to page 52 of the chapter:

“Thus, because of regulatory uncertainties and the anticipated insignificant water quality benefits to be obtained through implementation of additional nonpoint source pollution controls commensurate with the relatively small cost differential, blending at the South Shore plant is not recommended as a long-term solution to satisfying the identified need to provide additional treatment capacity. That recommendation assumes that physical-chemical treatment with chemical flocculation is found to be an effective option at the South Shore plant.”

Mr. Lubner said that he did not see a significant difference between the MMSD position as stated by Ms. Krug and the recommendation of the regional water quality management plan update. Ms. Krug replied that MMSD was required to meet regulations, while SEWRPC does not have that constraint and can make recommendations that are best for water quality. She also noted that given the status of the plan and schedule constraints, perhaps the issues that she raised could be addressed somehow in the implementation plan.

Mr. Hahn responded that:

- It should be possible to make a recommendation independent of the implementation plan .
- The integrated watershed-based approach subsection is intended to present a balanced evaluation of the situation regarding the treatment capacity options for the South Shore plant and the regulatory issues associated with those options.
- If the MMSD staff has additional information on the positions of regulatory agencies on this matter beyond that which is available in written form as set forth in the chapter, it should be provided to the SEWRPC staff so that it can be formally considered in developing the recommended plan.
- The SEWRPC staff does not want to make the recommendation so loose that nothing is definitive.

In light of the foregoing, Ms. Krug asked that the chapter, specifically the integrated watershed-based approach and recommended plan sections, not be voted on by the Committee at the meeting. Mr. Hahn replied that it was fair to ask for the Committee to request more time since the subject sections of the chapter were only provided shortly before the meeting.

[Secretary’s Note: The attached Exhibit A was inserted following the **INTEGRATED WATERSHED-BASED APPROACH** section on page 52. The attached Exhibit B is a revision to the **RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN** section. That section now follows the **MMSD SYSTEM OPERATION OPPORTUNITIES** section (Exhibit A).]

Mr. Mueller said that unless there was a motion, he would like to move on with the review.

Mr. Schmidt stated that the Committee had the option of voting on the portions of the recommended plan chapter that had been reviewed to date, it could wait until the remainder of the all information was presented at the next meeting.

Mr. Kappel moved that no vote be taken until the next Committee meeting when all information comprising the chapter will have been presented. The motion was seconded by Mr. Lubner and passed unanimously.

Mr. Hahn concluded with a review of Figures X-1 through X-6, which graphically set forth information on the degree to which water quality standards are achieved under existing, revised year 2020 baseline, recommended plan, and “extreme measures” conditions. He noted that an 85 percent level of compliance with standards was adopted as a goal based on the criterion that a stream reach is placed on the 303 (d) impaired waters list if more 15 percent of the samples for a given pollutant exceed the applicable water quality standard.

During that review, Mr. Hahn referred the Committee to a memorandum which had been provided at the January 31, 2007, meeting, and which described the level of control associated with the “extreme measures” condition. Mr. Hahn said that the “extreme measures” condition was not considered a “plan” that could practically be implemented. He noted that condition was developed to provide an evaluation of the water quality effects of applying greater levels of control than those called for under the recommended plan and to provide a sense of whether components of the recommended plan could be augmented to markedly improve water quality. He also said that the only change to the “extreme measures” condition as described in the memo distributed at the January meeting was the later elimination of phosphorus in industrial noncontact cooling water, which had been previously identified as a significant source of phosphorus loads. He said that, although stormwater disinfection units were eliminated from the recommended plan based on Committee comments at the January meeting, they were still included in the “extreme measures” condition (and in the model representation of the recommended plan). He noted that their overall effect on instream bacteria counts was found to be relatively insignificant.

[Secretary’s Note: Elimination of phosphorus in noncontact cooling water would be tied to finding a substitute for polyphosphates and orthophosphates which are now commonly added to municipal water supplies to inhibit corrosion of pipes and protect human health. As previously discussed with the Committee, such elimination is not recommended, although the plan encourages consideration of alternative means of reducing corrosion.]

OLD BUSINESS

There was no old business.

NEW BUSINESS

Ms. Nenn noted that the Legislative Joint Finance Committee was holding public hearings in Milwaukee on March 20 regarding the 2008-2009 State budget. She said:

- The Governor’s budget called for \$12 million for “soft” nonpoint source control farm programs and \$25 million for “hard” urban programs, both related to the Chapter NR 151, “Runoff Management,” standards;
- That \$17 million was proposed for PCB cleanup in the Kinnickinnic and Milwaukee Rivers; and
- That \$12 million in unspent U.S. Department of Agriculture Conservation Reserve Enhancement Program funds was proposed to be made available for purchase of development rights programs by local governments.

Ms. Nenn suggested that municipalities and other interested organizations comment and support these proposals. She also said that Friends of Milwaukee’s Rivers was sponsoring a river cleanup on April 21, 2007, from 9:00 a.m. to noon and was holding citizen water quality monitoring training programs on May 6 and June 2, 2007.

Ms. Krug distributed an information sheet regarding the public comment period on the MMSD 2020 facilities plan and the public hearings to be held at the MMSD Headquarters on Wednesday, April 25, 2007, at 5:30 p.m. and Thursday, April 26 at 9:00 a.m.

Mr. Hahn reminded the Committee members of the Clean Rivers/Clean Lakes Conference on April 24, 2007, and he noted that they all should have received “ save the date” notices.

DETERMINATION OF NEXT MEETING DATE AND LOCATION

The next meeting of the Advisory Committee was scheduled for Wednesday, April 18, 2007, from 1:30 to 3:30 p.m. at the Mequon City Hall in the upstairs Council Chambers.

ADJOURNMENT

The March 20, 2007, meeting of the Advisory Committee on the regional water quality management plan update was adjourned at 2:57 p.m. on a motion by Mr. Kappel, seconded by Mr. Wiza and carried unanimously by the Committee.

COMMENTS ON CHAPTER X, OF SEWRPC PLANNING REPORT NO. 50 AS PROVIDED BY MR. JAMES F. LUBNER, FOLLOWING THE COMMITTEE MEETING

Following the meeting, Mr. Lubner remarked that the third sentence in the third full paragraph on page 47 misleadingly suggested that common carp may have dispersed into inland lakes and streams from Lake Michigan. The reference to “common carp” was eliminated from that sentence.

ADDITIONAL CLARIFYING REVISIONS TO CHAPTER X OF SEWRPC PLANNING REPORT NO. 50 ADDED BY THE COMMISSION STAFF

[Secretary’s Note: The following subsection was added on page 35 immediately before the subsection entitled *Pet Litter Management*:

“Beach and Riparian Litter and Debris Control Programs

It is recommended that existing litter and debris control programs along Lake Michigan beaches, inland lake beaches, and along the urban streams of the study area be continued and that opportunities to expand such efforts be explored. Existing programs are conducted by several environmental organizations in cooperation with numerous citizen volunteers and volunteer organizations. The environmental organizations involved in such programs include Keep Greater Milwaukee Beautiful, Inc., and its corporate sponsors who stage annual river cleanup programs in Milwaukee, Ozaukee, Washington, and Waukesha Counties, and the Friends of Milwaukee’s Rivers, who also organize periodic river cleanups. An estimated cost for the recommended programs, assuming an expanded level of effort beyond the current programs, is set forth in Table X-2.”]

COMMENTS ON CHAPTER X, OF SEWRPC PLANNING REPORT NO. 50 AS PROVIDED BY WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) STAFF FOLLOWING THE MARCH 20, 2007, COMMITTEE MEETING AT WHICH THE CHAPTER WAS REVIEWED

Subsequent to the March 20, 2000, Committee meeting, WDNR staff provided comments that are addressed below.

WDNR staff commented that the discussion of SSOs in the second paragraph in the *Wet Weather Control Plan* subsection on page 12 does not fully reflect WDNR policy on SSOs. In addition, they noted that the regulations allow, but do not require, regulators to include “exceptional circumstances” language in permits.

[Secretary's Note: The second paragraph in the *Wet Weather Control Plan* subsection on page 12 of the revised draft was revised to read:

“As noted in Chapter IV, “Legal Structures Affecting the Regional Water Quality Management Plan Update,” and Chapter IX, “Development of Alternative Plans: Description and Evaluation,” of this planning report, sanitary sewer overflows are prohibited under the Clean Water Act (CWA) and under the WPDES discharge permits for MMSD facilities and the other wastewater treatment facilities in the study area; however, current Federal and State regulations acknowledge that it is not feasible to prevent SSOs at all times and under all circumstances. Therefore, those regulations **allow** regulators to include “exceptional circumstances” language in permits. **All SSOs are prohibited under current Federal and State rules. The WDNR may exercise enforcement discretion for certain SSO events such as pump failures, collapsed sewers, and events associated with storm frequencies having greater than average or normal rainfall amounts. In addition to resulting in enforcement actions, SSOs that occur during a rainfall event with a recurrence interval of less than five years may result in the denial of future extensions of sanitary sewers in accordance with Chapter NR 110.05 of the Wisconsin Administrative Code.** To meet regulatory requirements, the 2020 MMSD facilities plan proposes to provide a five-year level of control of SSOs.⁴⁵

⁴⁵*For the MMSD facilities plan, the five-year level of protection was determined based on continuous simulation of 64.5 years of meteorological data. That methodology enables consideration of factors, such as soil moisture conditions prior to a storm, which can have a significant impact on both stormwater runoff and infiltration and inflow to sanitary sewers. The rainfall event recurrence interval approach does not consider those important factors. Thus, the approach to establishing the level of protection against sanitary sewer overflows as applied for the facilities plan is considered superior to an approach based on rainfall frequency.”]*

WDNR staff suggested rewording the first two sentences in the third paragraph in the *Wet Weather Control Plan* subsection on page 12.

[Secretary's Note: The first two sentences of the third paragraph in the *Wet Weather Control Plan* subsection on page 12 of the revised draft were revised to read:

“**The MMSD WPDES permit contains requirements which cover CSO events.** As noted in Chapter VI of this planning report, **the permit lists two CSO performance standards: one related to CSO volume and the other related to the number of CSO events.**”]

WDNR staff suggested that the discussion of the Milwaukee County Grounds detention basin in the *Watercourse Management* subsection on page 19 be revised to reflect the fact that this project would provide flood control for portions of Underwood Creek and the Menomonee River.

[Secretary's Note: The fourth bullet point on page 19 of the revised draft was revised to read:

“Milwaukee County Grounds detention basin to provide flood control **for portions of** Underwood Creek and the Menomonee River mainstem in the Cities of Milwaukee and Wauwatosa.”]

Regarding the *Implementation of the Nonagricultural (Urban) Performance Standards of Chapter NR 151* subsection, WDNR staff noted that stormwater discharges are regulated as point sources, not as nonpoint sources, and asked that the second bullet point on page 30 be revised to reflect this.

[Secretary's Note: The second bullet point on page 30 of the revised draft was revised to read:

“Control of **stormwater** pollution from areas of existing and planned urban development, redevelopment, and infill; and”]

Regarding the *Renovation of the MMSD Kinnickinnic River Flushing Station* subsection on pages 36 and 37, WDNR staff commented that certain actions to improve channel and sediment conditions in the Kinnickinnic River would lead to improvement of dissolved oxygen conditions. They suggested that instream efforts to revitalize the channel might lead to a long-term cost-effective solution eliminating the need to renovate the flushing tunnel.

[Secretary's Note: The following was added at the end of the first full paragraph on page 37:

“Prior to implementing any major modifications to the flushing station, it is recommended that MMSD reevaluate dissolved oxygen levels in the estuary in light of possible future sediment removal projects that could improve dissolved oxygen conditions.”]

Regarding the *Dams* subsection on page 37 of the revised draft, WDNR staff commented that the discussion of “dam abandonment and restoration plans” was confusing. They asked that it be changed to “dam abandonment and river restoration plans.”

[Secretary's Note: SEWRPC staff feels that the term “river restoration plan” is too specific for the sense intended. The abandonment and restoration plans envisioned should include restoration of the floodplain and, under certain circumstances, associated upland areas as well as re-creation of the stream channel. Thus, the text was revised to refer to “riverine area restoration plans.”]

Regarding the *Dams* subsection on page 37 of the revised draft, WDNR staff asked whether SEWRPC staff intended to use the word “recreation” in the eighth sentence of the third full paragraph on page 37 and suggested substituting the word “restoration”.

[Secretary's Note: The use of the term “re-creation” was intended by SEWRPC staff to reflect the fact that dam basins accumulate sediment, frequently obliterating the historic river channel and modifying the associated floodplain. Consequently, upon removal of the dam structure, it will be necessary to manage and or remove the accumulated sediment in such a manner as to attempt to recreate the original stream. Once this is accomplished, it will be possible to restore the riparian vegetation community. SEWRPC staff feels that these are two distinct steps in the abandonment process and would emphasize the need for active recreation of a channel, a step that has been frequently overlooked.]

WDNR staff commented that the affinity that people have for dams after they have served their intended purpose is more an affinity for the constructed waterbody than for the dam itself.

[Secretary's Note: The last sentence in the second full paragraph on page 37 of the revised draft was revised to read:

“The waterbodies created or maintained by many of the dams now serve as focal points for residential communities and recreation. In addition, some dams may provide limited flood control benefits.”]

The third sentence of the last paragraph on page 37 was changed to read:

“For example, as noted above many dams were originally constructed for hydropower purposes, evolved through a role as receptacles for stormwater runoff, and currently serve to maintain constructed waterbodies that act as recreational focal points.”]

The WDNR staff asked that the report include additional information on dam regulation at the State level.

[Secretary’s Note: Chapter VI, “Legal Structures Affecting the Regional Water Quality Management Plan Update,” of SEWRPC Planning Report No. 50 already includes a subsection on State regulation of dams. That subsection was revised as follows to incorporate the suggestions of the WDNR staff:

**“Chapter 31, Regulation of Dams and Bridges Affecting Navigable Waters
Dams have a significant impact on water quality, wildlife, public safety, water rights issues, and land use in Wisconsin. Under Chapter 31 of the *Wisconsin Statutes*, which was created in 1917 under the Water Power Law, the WDNR has authority to regulate the location, construction, permitting, safety, operation, and maintenance of dams and bridges affecting a navigable body of water. Chapter 31 also addresses alteration or repair of dams, dam transfer and removal, and water level and flow control.**

Administrative rules governing dam design and construction standards are set forth in Chapter NR 333 of the *Wisconsin Administrative Code*. **Chapter NR 335 covers the administration of the Municipal Dam Repair and Removal Grant Program and Chapter NR 330 provides standards for warning signs and portages for dams.**

The issuance of a Chapter 31 permit would be subject to the policies stipulated in Chapter NR 1.95 and the standards set forth in Chapter NR 103 of the *Wisconsin Administrative Code* and to the provisions of the Wisconsin Environmental Policy Act. **Section 31.19 of the *Wisconsin Statutes* requires that the WDNR perform safety inspections of large dams on navigable waterways once every 10 years.⁴⁵ In general, the Department does not inspect dams that are regulated by a Federal agency.**

⁴⁵***A large dam is defined as having a structural height of over 6 feet and impounding 50 acre-feet or more, or having a structural height of 25 feet or more and impounding more than 15 acre-feet.”]***

[Secretary’s Note: The following paragraphs were added after the first partial paragraph on page 38 of the revised version of Chapter X:

“Historically, consideration of dam abandonment and removal has usually come about because of a failure incident or as the result of a WDNR inspection which found significant defects that require major repairs to correct. Economic, social, and environmental factors all play a significant role in decisions to remove dams.

The three major reasons for dam removals in Wisconsin are:

- Removal of an unsafe structure under Section 31.19 of the *Wisconsin Statutes*.
- Removal of "abandoned" dams under Section 31.187 when either no owner is found or the owner or owners are not able to fund repairs.
- Removal of dams that have a significant environmental impact.”]

The WDNR staff requested that the *Exotic Invasive Species* subsection note that ballast water is considered a significant source of aquatic invasive species introduction to the Great Lakes.

[Secretary’s Note: The following sentence was added after the third sentence of the second last paragraph on page 43 of the revised draft:

“Discharge of ballast water by ships is a significant source of exotic invasive species to the Great Lakes.”

The first sentence in the last paragraph on page 43 was modified as follows:

“A number of programs have been developed to educate the public about exotic invasive species and to reduce the spread of exotic invasive species **to inland waters** including the Watercraft Inspection Program and the Clean Boats, Clean Waters Program, both sponsored by the WDNR; aquatic invasive species educational materials, workshops, and the outreach program “Attack Packs,” all sponsored by the University of Wisconsin-Sea Grant Institute, University of Wisconsin-Extension, and the Wisconsin Association of Lakes.”]

WDNR staff commented that while the draft chapters of SEWRPC Technical Report No. 39 provided information related to thermal impacts, the recommended water quality plan included no recommendation related to thermal discharges. They requested that the plan include a recommendation to encourage the WDNR to develop a thermal policy.

[Secretary’s Note: The following subsection was added after the last paragraph on page 43 of the revised draft:

“Water Temperature and Thermal Discharges

Water temperature is a critical variable affecting the suitability of a waterbody as habitat for aquatic organisms. Because the solubility of oxygen in water and the metabolic demands of aquatic organisms are strongly affected by temperature, excessively high water temperatures can act to exclude species of organisms from habitats which they might otherwise use. This is especially important for species that are intolerant of low dissolved oxygen concentrations. Because of these relationships, thermal discharges can act to alter the suitability of a waterbody as habitat. It is recommended that the WDNR develop a policy regarding water temperatures and thermal discharges into waterbodies.”]

WDNR staff asked that flow monitoring be added to the examples of water quality parameters that can be assessed at low cost listed in the *Recommendations Regarding Monitoring and Data Collection* subsection.

[Secretary’s Note: The thirteenth sentence in the first full paragraph on page 45 of the revised draft was revised to read:

“Examples of these parameters include those that can be examined through the use of electronic meters such as dissolved oxygen, pH, specific conductance, and temperature as

well as those that can be examined through the use of relatively inexpensive equipment, such as Secchi depth **and streamflow.**”]

The last sentence of the fourth paragraph on page 46 of the revised draft was revised to read:

“Examples of these parameters include those that can be examined through the use of electronic meters such as dissolved oxygen, pH, specific conductance, and temperature as well as those that can be examined through the use of relatively inexpensive equipment, such as Secchi depth **and streamflow.**”]

**COMMENTS ON CHAPTER XI, OF SEWRPC TECHNICAL REPORT NO. 39
AS PROVIDED BY WISCONSIN DEPARTMENT OF NATURAL RESOURCES
(WDNR) STAFF FOLLOWING THE SEPTEMBER 27, 2006, COMMITTEE MEETING AT
WHICH THE CHAPTER WAS REVIEWED**

Subsequent to the September 27, 2006, Committee meeting, WDNR staff in the Southeast Region Drinking Water/Groundwater Program provided comments that are addressed below.

WDNR staff commented that on page 2, the terms “public” and “municipal” were being used interchangeably with respect to water supply facilities and that this did not reflect the usage in the Safe Drinking Water Act.

[Secretary’s Note: The first two paragraphs on page 2 were changed to read:

“As shown in Table XI-1, areas served by **municipal** water utilities in 2000 encompassed about 256 square miles, or about 23 percent of the total area of the regional water quality management plan study area. An estimated 1,155,683 persons, or about 90 percent of the population of the study area, were served by **municipal** water utilities in 2000. In addition, urban areas not served by **municipal** water supplies constitute about 61 square miles, or about 5 percent of **the** study area. Municipal water supply facilities in the study area, and the sources of that water supply, are listed in Table XI-1.

In addition to publicly owned **municipal** water utilities, there **are** numerous water systems operating in the study area **that are not owned by municipalities or other public entities.** These water supply systems typically serve residential subdivisions, apartment or condominium developments, mobile home parks, and institutions. The sites served by such systems are shown on Map XI-1. This map distinguishes those municipal water systems which currently utilize Lake Michigan as a source of supply and those systems which utilize groundwater as a source of supply. In addition, all of the systems **in the study area that are not owned by municipalities or other public entities** utilize groundwater as a source of supply.”

The following footnote was added at the end of the first sentence in the second paragraph on page 2:

“For regulatory purposes, a public water supply system is defined as one that provides drinking water to the public. This definition applies to both publicly owned and privately owned systems. For planning purposes, it is important to distinguish between such systems.”]

WDNR staff commented that the last sentence in the fourth paragraph on page 2 was confusing.

[Secretary's Note: The last sentence in the fourth paragraph on page 2 was changed to read:

“As shown in Table XI-3, Lake Michigan supplies about 77 percent of the public water, while groundwater supplies the remaining 23 percent. Lake Michigan supplies 96 percent of total water use, while groundwater supplies the remaining four percent.”]

With reference to the discussion of aquifers in the third paragraph of page 3, WDNR staff suggested referring to the original Figure XI-3.

[Secretary's Note: Because the proposed reference to Figure XI-3 occurs before any reference to Figure XI-2, Figure XI-3 was renumbered as Figure XI-2 and Figure XI-2 was renumbered as Figure XI 3. The third sentence in the third paragraph of page 3 was revised to read as follows:

“The aquifers are, in descending order, the Quaternary sand and gravel; Silurian dolomite; Galena-Platteville; upper sandstone; and lower sandstone (see Table XI-4 and Figure XI-2).”]

WDNR staff requested that the nitrate-nitrogen data referred to in the last sentence of the first partial paragraph on page 8 be updated.

[Secretary's Note: The last two sentences in the first partial paragraph on page 8 were deleted and replaced with the following sentences:

“Data from the WDNR Groundwater Retrieval Network (GRN) databases suggest that nitrate contamination is a relatively minor problem in the study area. In samples collected from 841 wells in the study area during the period 1998-2006, nitrate-nitrogen was found to exceed the enforcement standard of 10 mg/l in 1.3 percent of wells and the preventive action limit of 2 mg/l in 9.4 percent of wells. It is important to note that because the GRN databases do not include data from monitoring wells associated with some actions such as USEPA Superfund sites and some contaminated groundwater remediation actions, these percentages may underestimate the extent of nitrate-nitrogen contamination in groundwater in the study area.”]

WDNR staff asked for a reference to the source of the 2005 data referred to in the first paragraph on page 7.

[Secretary's Note: The fifth and sixth sentences of the first paragraph on page 7 were changed to read:

“Based on the consumer confidence reports for 2005 issued by the WDNR, only one of the 18 water supply systems in the study area reported an exceedence of the current five picocuries per liter EPA and State maximum contaminant level (MCL) standard for radium (combined Radium-226 and Radium-228). The 2005 consumer confidence reports also indicated that four of the water supply systems in the study area reported an exceedence of the current MCL standard for radionuclides.”]

WDNR staff commented that comparisons between compliance monitoring data from public drinking water supply systems and groundwater occurrence data were not valid comparisons. This is because the former data represent samples collected from points within a public distribution system after water has received treatment while the latter data represent samples collected from a well prior to treatment and distribution. They asked that these comparisons not be made and recommended that groundwater occurrence data be used for this chapter.

[Secretary's Note: The following changes were made to address this comment.

The last sentence of the fourth paragraph on page 7 was deleted, including footnote number 10. To adjust for this, originally numbered footnote 12 was changed to read:

“Charles A. Czarkowski, WDNR Drinking Water and Groundwater Expert, Public Water System database.”

The following sentences were added to the end of the first full paragraph on page 8:

“Data from the WDNR GRN databases indicate that during the period 1998-2006, wells in the study area were sampled for 24 different pesticides. The number of wells sampled varied by compound, ranging between 43 and 395 with a mean number of 193. Most compounds were detected in fewer than 15 percent of the wells sampled. Ten of these compounds were compared to preventative action limits and enforcement standards. Only one pesticide was found to exceed either standard. Pentachlorophenol exceeded its preventative action limit in slightly over 2 percent of the wells sampled. It did not exceed its enforcement standard in any well sampled. As noted previously, the GRN databases do not include data from monitoring wells associated with some actions such as USEPA Superfund sites and some contaminated groundwater remediation actions. Thus, these percentages may underestimate the extent of pesticide contamination in groundwater in the study area.”

The second full paragraph on page 8 was changed to read:

“The presence in certain locations of volatile organic compounds (VOCs) is also a cause of concern. Sources of VOCs included landfills, leaking underground storage tanks, and spills of hazardous substances. **Data from the WDNR GRN databases indicate that during the period 1998-2006, wells in the study area were sampled for 101 different VOCs. The number of wells sampled varied by compound, ranging between five and 1,089 with a mean number of 529. Most compounds were detected in fewer than 10 percent of the wells sampled. For most compounds, preventative action limits and enforcement standards were exceeded in less than 1 percent of the wells sampled. As noted previously, the GRN databases do not include data from monitoring wells associated with some actions such as USEPA Superfund sites and some contaminated groundwater remediation actions. Thus, these percentages may underestimate the extent of VOC contamination in groundwater in the study area.**”

The following paragraph was added after the fifth full paragraph on page 8:

“Groundwater in the study area has also been examined for concentrations of inorganic compounds of public health and welfare concern and for values of groundwater quality indicator parameters. Data from the WDNR GRN databases indicate that during the period 1998-2006, wells in the study area were sampled for 47 different inorganic compounds and indicator parameters. The number of wells sampled varied by compound, ranging between one and 932 with a mean number of 277. On average, each compound or indicator parameter was detected in about 67 percent of the wells sampled. Of these compounds and indicator parameters, 25 were compared to preventative action limits and enforcement standards. Methodologies for establishing preventative action limits have been issued for an additional 11 of these compounds and indicator parameters; however, these standards were not computed in the GRN databases. Preventative action limits were exceeded in at least some wells in the study area for 20 inorganic compounds. The fraction of wells sampled

that exceeded the preventative action limits varied among the compounds, ranging from less than 1 percent to 69 percent of wells, with a mean value of 9 percent. Enforcement standards were exceeded for at least some wells in the study area for 18 inorganic compounds. The fraction of wells sampled that exceeded the enforcement standards also varied among compounds, ranging from less than 1 percent to 56 percent of wells, with a mean value of about 4 percent. As noted previously, the GRN databases do not include data from monitoring wells associated with some actions, such as USEPA Superfund sites and some contaminated groundwater remediation actions. Thus, these percentages may underestimate the extent of inorganic compound contamination in groundwater in the study area.”]

WDNR staff suggested documenting sources of information for more specific information regarding groundwater contamination potential.

[Secretary’s Note: The following footnote was added to the end of the last sentence of the second full paragraph on page 9:

“The WDNR provides resources where more specific information on groundwater contamination is available. The Remediation and Redevelopment Sites Map is a map-based system for finding property in Wisconsin that is or was contaminated with hazardous substances. The status of cleanup actions of these sites is tracked through the Bureau for Remediation and Redevelopment Tracking System. The GIS Registry of Closed Remediation Sites provides a means of public notice for several types of completed environmental cleanups. The Source Water Assessment Program provides basic information of the degree to which drinking water sources may be impacted by potential sources of contamination. These resources may be accessed through the WDNR’s website at <http://dnr.wi.gov/>.”]

WDNR staff noted that the WDNR has increased its surveillance of abandoned wells. At this time, however, all of their well abandonment information is in the process of being added to a centralized database and is currently unavailable. They suggested adding a footnote that these data were in process.

[Secretary’s Note: The following footnote was added to the end of the last sentence of the second paragraph on page 14:

“The WDNR has increased its surveillance of abandoned wells. As of February 2007, the Department was in the process of developing a centralized database containing information on abandoned wells.”]

WDNR staff noted that the chapter of the *Wisconsin Administrative Code* referenced for wellhead protection in the sixth sentence of the third full paragraph on page 21 should be NR 811.

[Secretary’s Note: The reference was corrected.]

With reference to the section on artificial groundwater recharge and management, WDNR staff suggested noting that the City of Oak Creek is operating a municipal well as an aquifer storage and recovery well and discussing some of the impacts that have been observed on groundwater as a result of this.

[Secretary’s Note: The following footnote was added to the end of the third bullet point on page 22 after original footnote 21:

“The City of Oak Creek is operating a municipal well as an aquifer storage and recovery (ASR) well and has approval to operate their municipal water supply system as an ASR system. This approval was granted by the WDNR after a series of pilot studies by the City. As a result of this operation, some effects have been observed on groundwater chemistry. According to the WDNR, concentrations of manganese in groundwater associated with this well have been increasing. It is possible that other geochemical changes may occur as oxygenated water is added to a fairly anoxic deep aquifer system. These changes may mean that Oak Creek would need to reduce the concentration of manganese in recovered water. In addition, these changes could result in groundwater quality standards from Chapter NR 140 of the *Wisconsin Administrative Code* not being met at the point of standards application.”]

* * *

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Exhibit A

SEWRPC Planning Report No. 50

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

Chapter X

RECOMMENDED WATER QUALITY MANAGEMENT PLAN

[Insert following the “Integrated Watershed-Based Approach” section.]

MMSD SYSTEM OPERATION OPPORTUNITIES

The MMSD inline storage system (ISS), or the “deep tunnel,” is an integrated, dual use facility designed to store both combined and separate sanitary sewer system flows. Due to the nature of the system (combined sewer flow can fill the tunnel completely during a wet weather event leaving no volume available for separate sewer flow) the ISS has traditionally been operated to reserve a portion of its total volume (currently 405 MG and planned to be 432 MG) for separate sanitary sewer flows. The modeling conducted for the regional water quality management plan update and the recommended MMSD facilities plan is based on a constant volume reserved for separate sewer inflow (VRSSI). However, it is possible to maximize the effectiveness of the ISS and more fully utilize the capacity of the ISS by varying the volume for individual events, and MMSD currently operates the ISS using a variable VRSSI.

The MACRO screening tool (described in Chapter V of this report) was applied for the 64.5-year simulation period to assess the impact of several essentially no-cost (beyond that of committed projects) ISS operational strategies on MMSD ISS-related SSO and CSO frequency and volume.⁴⁵ Section 9.6.8 of the MMSD 2020

⁴⁵*An ISS-related overflow is one that is caused when the ISS fills and closes. A conveyance-related SSO occurs due to capacity restrictions in the metropolitan interceptor system (MIS). Possible MIS hydraulic capacity limitations under revised 2020 baseline population and land use conditions were identified during the planning process and the regional water quality management plan update and the 2020 facilities plan include a recommendation that additional flow monitoring and assessment of growth be made in order to determine the future need for increasing the MIS capacity.*

facilities plan sets forth a detailed description of the following four operational strategies that were analyzed for the inline storage system (ISS):

- VRSSI = 0 (No volume reserved for separate sanitary sewer area (SSSA)) flows,
- VRSSI = 432 MG (Full ISS volume used to store flow from SSSA),
- VRSSI = Constant value between zero and full ISS volume,⁴⁶ and
- Variable VRSSI (0 to 432 MG)

The simulations were completed assuming revised 2020 baseline population and land use conditions, MMSD committed facilities, and the following operational assumptions:

- A Jones Island wastewater treatment plant (JIWWTP) sustained peak daily capacity of 300 MGD,
- A JIWWTP peak daily blending capacity of 60 MGD,
- A South Shore wastewater treatment plant (SSWWTP) sustained peak daily capacity of 300 MGD,
- An ISS peak pumping rate to JIWWTP of 80 MGD,
- An ISS peak pumping rate to SSWWTP of 40 MGD,
- An ISS volume of 432 MG, and
- Continuation of the current MMSD operating strategy for the Northwest Side Relief Sewer (which is a remote storage facility of 89 MG).

Because those operating assumptions reflect current capabilities, implementation of any of the four operational strategies considered could be accomplished at no significant additional cost. Each of the strategies is briefly described in the following subsections.⁴⁷

⁴⁶A VRSSI equal to 177 MG was used for the analyses, although the final recommended facilities plan used 197 MG.

⁴⁷The analysis of operational strategies for the ISS was conducted on the basis of volumes of CSOs and SSOs. Loads of pollutants delivered to waterbodies in the study area during SSO and/or CSO events were estimated by applying average pollutant concentrations characteristic of SSOs or CSOs to the overflow volumes. In that way, total pollutant loads were adequately estimated. The variation in load over time during a given overflow event was not represented.

No Volume Reserved for Separate Sewer Inflow

Variations of this strategy were described in Chapter IX of this report. That analysis included evaluations of effects on instream and in-Lake water quality. Under this approach, operation of the ISS would not differentiate between separate or combined sewer flows and the ISS would be allowed to fill with whatever flow reached it first. It was found that, relative to current operating conditions, this operating strategy would result in:

- A slight reduction in the total annual overflow (sum of both SSO and CSO) volume,
- A decrease in the frequency of all overflows (sum of both SSOs and CSOs),
- An increase in the frequency of ISS-related SSOs, and
- A decrease in the frequency of CSOs.

Within the parameters established for the ISS operation analysis as set forth previously, this operating approach would achieve a one-year level of protection against SSOs, an average annual SSO volume of 280 MG, an average of one CSO per year, and an average annual CSO volume of 440 MG.

This operational strategy would result in essentially the same instream and in-Lake water quality as compared to the constant VRSSI case as discussed below (VRSSI = 177 MG). But, this option would violate the current existing State and Federal law with regard to SSOs and would also violate the conditions of the current MMSD discharge permit because of the increased frequency of SSOs. The ISS would fill and all gates would be closed more frequently under this operating condition. In those situations the ISS would not be available to provide hydraulic relief to local sanitary sewers, possibly creating an unacceptable risk of increased frequency of basement backups in portions of the system. On the basis of the foregoing, the SEWRPC regional water quality management plan update and the MMSD 2020 facilities plan both eliminated this operational strategy from further consideration.

Volume Reserved for Separate Sewer Inflow Equals Full ISS Volume of 432 MGD

Within the established parameters for the ISS operation analysis, this operating approach would achieve a seven-year level of protection against SSOs, an average annual SSO volume of 20 MG, an average of 27 CSOs per year, and an average annual CSO volume of 3,120 MG.

Under this operational strategy the annual number of CSO events could increase dramatically and the CSO volume would also increase substantially. This strategy would violate MMSD's discharge permit conditions and would result in an unacceptably high level of CSOs. Thus, it was eliminated from further consideration.

Constant Volume Reserved for Separate Sewer Inflow

This strategy, which was applied assuming a constant VRSSI=177 MG for wet weather events, does not reflect actual MMSD operating policy, which is to vary the VRSSI from event to event; however, its application does enable prediction of the long-term average ability of the MMSD system to contain SSOs and CSOs.⁴⁸

Within the parameters established for the ISS operation analysis, this operating approach would achieve a two-year level of protection against SSOs, an average annual SSO volume of 110 MG, an average of three CSOs per year, and an average annual CSO volume of 820 MG.

Variable Volume Reserved for Separate Sewer Inflow

The goal of this approach is to optimize the use of the ISS storage by varying the VRSSI depending on the anticipated need for separate sewage storage during an event.

Under its Real Time Control Project, the MMSD has begun implementation of a new prediction algorithm designed to improve the ability to predict the required VRSSI. This new algorithm has not yet been fully verified because of a lack of significant wet weather events over the past two years, but it has been applied for those storms that have occurred since it was put into operation. Current operating practice is described as "active tunnel management," under which a default VRSSI of about 250 MG is assumed and then refined based on observed data up until the time that the combined sewer gates are closed.

The simulation models used to develop the 2020 facilities plan cannot represent the variable VRSSI strategy which relies on continuous operator judgment. However, it was possible to apply the models to provide some perspective on the upper limit of system performance using this strategy (i.e., the greatest level of protection against SSOs that could be achieved if system operators had perfect knowledge of the required VRSSI). That analysis is described in more detail in section 9.6.8 of the MMSD facilities plan

⁴⁸*The conveyance system model cannot represent MMSD's variable VRSSI approach, so the constant VRSSI approach was generally applied to model the long-term average effects of ISS operation under both the SEWRPC regional plan and the MMSD facilities plan.*

Within the parameters established for the ISS operation analysis, if this operating approach could be fully realized, it would achieve a seven-year level of protection against SSOs, an average annual SSO volume of 20 MG, an average of two CSOs per year, and an average annual CSO volume of 720 MG. The attainment of these levels of control would require that operators perfectly predict meteorological conditions and the I/I response to these conditions. That level of operation prediction cannot currently be reliably attained; however, the MMSD staff continues to work with the new algorithm and to apply information observed during wet weather events to refine the process of effectively predicting the necessary VRSSI.

Over the long-term, the variable VRSSI operating approach would be expected to achieve an SSO LOP between the two-year LOP against SSOs for the constant VRSSI approach and the seven-year LOP “perfect” variable VRSSI strategy. Operational experience over a wide range of hydrologic conditions and over an extended period of time is required to further demonstrate the accuracy with which the VRSSI can be predicted.

Conclusion

The variable VRSSI operating strategy based on continued refinement and improvement of the prediction algorithm developed under the MMSD Real Time Control Project holds some promise for achieving more effective operation of the ISS. If the variable operating strategy were successfully implemented over the long-term, it could be one component of an overall scenario under which additional capacity upgrades at the South Shore plant could be minimized or avoided. The current regulatory bifurcation with regard to CSO and SSO makes the MMSD’s operation of its system very complex and difficult. Over time, other measures should be considered in the operation rather than simply what type of overflow has to be considered. Water quality protection and improvement should continue to be the overriding concern.

The MMSD 2020 facilities plan recommendation to upgrade the pumping capacity from the ISS to the Jones Island plant could enhance the effectiveness of the ISS and improve the chances for successful long-term implementation of a variable VRSSI operating strategy is. That additional pumping capacity is also recommended for the following reasons:

- It would provide needed capacity when the existing pumps are rehabilitated in the future,

- Sound engineering practice as defined in Section NR 110.14 of the *Wisconsin Administrative Code* calls for sewage pump stations to have adequate capacity with one pump out of service,⁴⁹ and
- The additional capacity would more quickly empty the Northwest Side Relief Sewer, which can only be emptied through the ISS.

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⁴⁹*The requirement for the ISS pump station to have adequate capacity with one pump out of service was waived in a November 2, 1982 letter from the WDNR to the MMSD.*

Exhibit B

SEWRPC Planning Report No. 50

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

Chapter X

RECOMMENDED WATER QUALITY MANAGEMENT PLAN

[The following section is a revision of what was in the draft reviewed by the Technical Advisory Committee on March 20th.]

RECOMMENDED REGIONAL WATER QUALITY MANAGEMENT PLAN

If MMSD can successfully implement a variable VRSSI operating strategy based on continued refinement and improvement of the prediction algorithm developed under the MMSD Real Time Control Project, it could be one component of an overall scenario under which additional capacity upgrades at the South Shore plant could be minimized or avoided. Thus, it is recommended that MMSD continue efforts to refine and improve the ISS operating strategy and that upgrades at the South Shore plant be deferred, and possibly eliminated, pending:

- The results of recommended studies of system capacities.
- Determination of the actual population and land use changes within the planning area in comparison to estimates and predictions made for the regional water quality management plan update and the 2020 facilities plan.
- Determination of the success of the wet weather peak flow management planning effort. An additional factor of safety would be provided if that effort went beyond the goal of “holding the line” on infiltration and inflow (I/I) and actually reduced I/I.
- Completion of an improved analysis of the level of protection which can be achieved by the variable VRSSI operating strategy and the upgraded pumping from the ISS to the Jones Island plant. This analysis would be based upon actual operational experience over an expanded period of record.

In the event that it is ultimately determined that capacity upgrades are required at the South Shore plant, the following considerations apply. The estimated capital, annual operation and maintenance, and equivalent annual costs of blending at the South Shore plant are \$5 million, \$0.7 million, and \$1.4 million, respectively, less than the corresponding costs of physical-chemical treatment with chemical flocculation.⁵⁰ Those cost differences are not so large that they would necessarily favor selection of blending over physical-chemical treatment with chemical flocculation when additional pertinent considerations are factored into the comparison. A primary consideration in that comparison is uncertainty over the regulatory acceptability of long-term blending at South Shore. Although the evaluation of regulatory issues as presented above concludes that blending at the South Shore plant would not obviously be ruled out under the draft USEPA policy regarding blending at plants receiving sanitary sewer flows and/or under the USEPA policy allowing blending at treatment plants receiving combined sewer flows, the final decision would be made by the WDNR. Given the evolving Federal and State regulatory climate on the issue of blending, it is not clear that a decision favorable to blending would be issued. In addition, if blending were implemented and the cost differential between blending and the treatment option that is next closest in cost (physical-chemical treatment with chemical flocculation) were to be applied to implement additional nonpoint source controls, it is not likely that the overall water quality benefits of the relatively small additional expenditure would be significant. Thus, because of regulatory uncertainties and the anticipated insignificant water quality benefits to be obtained through implementation of additional nonpoint source pollution controls commensurate with the relatively small cost differential, blending at the South Shore plant is not recommended as a long-term solution to satisfying the identified need to provide additional treatment capacity. That recommendation assumes that physical-chemical treatment with chemical flocculation is found to be an effective option at the South Shore plant.

If the long-term demonstration project recommended in the MMSD 2020 facilities plan concludes that physical-chemical treatment with chemical flocculation is not feasible, blending could become a more viable alternative to the remaining option of physical-chemical treatment with ballasted flocculation. Although the regulatory uncertainty regarding blending would remain, avoiding the large incremental cost between implementing physical-chemical treatment with ballasted flocculation and blending would present an opportunity to apply that level of funds to the achievement of discernible water quality improvements through control of nonpoint source

⁵⁰*The estimated capital, annual operation and maintenance, and equivalent annual costs of blending are 5, 50, and 15 percent less, respectively, than the corresponding costs of physical-chemical treatment with chemical flocculation.*

pollution at a level beyond that of the base nonpoint source control component of the recommended regional water quality management plan.⁵¹

In light of the foregoing, the integrated watershed-based water quality management plan calls for the following:⁵²

- All of the components of the land use, point and nonpoint source water pollution control, and groundwater management plan elements described as being part of the regulatory approach and listed in Table X-2, except for physical-chemical treatment with chemical flocculation at the South Shore plant. The need for such treatment should be evaluated at a later date, following determination of 1) the degree to which MMSD can successfully implement a variable VRSSI operating strategy, 2) actual system capacities at the Jones Island and South Shore plants, 3) actual population and land use changes within the planning area, and 4) the success of the wet weather peak flow management planning effort. If it were found that physical-chemical treatment was not needed, a capital cost saving of from \$97 million to \$152 million could be realized.
- Continued efforts by MMSD to successfully implement a variable VRSSI operating strategy based on refinement and improvement of the prediction algorithm developed under the MMSD Real Time Control Project and with upgraded pumping capacity from the ISS. As indicated previously, the MMSD system is an integrated system and the current regulatory bifurcation with regard to CSOs and SSOs makes MMSD's operation of its system very complex and difficult. The regulatory requirement that a distinction be drawn between SSOs and CSOs from the MMSD system creates a situation under which the capacity of the ISS may be underutilized despite MMSD's best efforts to apply a variable VRSSI operating strategy to avoid overflows. Therefore, it is recommended that MMSD and its customer communities work with the WDNR and USEPA to obtain formal regulatory recognition of the integrated nature of the MMSD system, perhaps extending to elimination of the present distinction between ISS-related SSOs and CSOs.
- Consideration of additional study of blending at the South Shore plant, perhaps as part of the recommended capacity study and/or the long-term demonstration project. This recommendation is

⁵¹*In the context of overall plan costs, a greater water quality benefit would be realized through providing expanded, targeted control of pathogens in illicit discharges to stormwater systems and, possibly, in stormwater itself and/or in rural runoff than by allocating funds to physical-chemical treatment.*

⁵²*The first and fifth items in the bulleted list primarily distinguish the integrated watershed-based approach from the regulatory watershed-based approach.*

consistent with the previously-stated facilities plan recommendation calling for evaluation of blending as a means to prevent possible basement backups under certain conditions.

- Possible implementation of physical-chemical treatment to increase the treatment capacity of the South Shore plant if it were ultimately found that additional capacity was needed at South Shore and favorable results were obtained from the recommended long-term demonstration project of physical-chemical treatment with chemical flocculation. As indicated previously, this element may not be needed if favorable results are obtained from further analyses of the variable VRSSI operating strategy and the capacity of the South Shore plant.
- Possible implementation of blending at the South Shore plant if it were ultimately found that additional capacity was needed and the recommended long-term demonstration project of physical-chemical treatment with chemical flocculation results in a conclusion that such a treatment option is not feasible. The estimated capital, annual operation and maintenance, and equivalent annual costs of blending are \$60 million, \$1.0 million, and \$6.1 million, respectively, less than the corresponding costs of the other remaining option, which is physical-chemical treatment with ballasted flocculation. In this case, it is recommended that additional funds be spent on achieving water quality improvements through control of nonpoint source pollution at a level beyond that of the base nonpoint source pollution control component of the regional plan, rather than on physical-chemical treatment with ballasted flocculation.⁵³ Once again, this element may not be needed depending on the results of analyses of the variable VRSSI operating strategy and the capacity of the South Shore plant.
- Revision of the USEPA draft policy regarding blending to specifically establish that it is acceptable to evaluate the water quality impacts of blending as part of a watershed-based approach to water quality management and to use that evaluation as a factor to be considered in determining if blending is to be allowed.

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⁵³As noted previously in this chapter, although a cost savings would accrue to the MMSD if certain components of the MMSD 2020 facilities plan were foregone, the additional funds that could be applied to more effective nonpoint source pollution control measures would not necessarily be provided by MMSD. Chapter XI, "Plan Implementation," provides information on funding sources and assign responsibilities for implementing the various components of the plan.