

**MINUTES OF THE TWENTIETH MEETING
SEWRPC REGIONAL WATER SUPPLY PLANNING ADVISORY COMMITTEE**

DATE: September 23, 2008

TIME: 9:00 a.m.

PLACE: Lower Level Conference Room
Regional Planning Commission Offices
W239 N1812 Rockwood Drive
Waukesha, Wisconsin

MEMBERS PRESENT

Kurt W. Bauer, Chairman	Executive Director Emeritus, SEWRPC
Robert P. Biebel, Secretary	Special Projects Environmental Engineer, SEWRPC
Kenneth R. Bradbury	Hydrogeologist/Professor, Wisconsin Geological and Natural History Survey
Thomas J. Bunker	Representative, Water and Wastewater Utility, City of Racine
Douglas S. Cherkauer	Professor of Hydrogeology, University of Wisconsin-Milwaukee
Lisa Conley	Representative, Town and Country Resource Conservation and Development, Inc.
Michael P. Cotter	Director, Walworth County Land Use and Resource Management Department
Charles A. Czarkowski	Regional Water Program Expert, Wisconsin Department of Natural Resources, Southeast Region
Daniel S. Duchniak	General Manager, Waukesha Water Utility, City of Waukesha
Charles P. Dunning	Hydrologist, U.S. Geological Survey
Franklyn A. Ericson	Manager, Environmental Operations & Central Services, S.C. Johnson & Son, Inc.
Thomas M. Grisa	Director of Public Works, City of Brookfield
Andrew A. Holschbach	Director, Ozaukee County Planning, Resources, and Land Management Department
Eric J. Kiefer	Manager, North Shore Water Commission
Carrie M. Lewis	Superintendent, Milwaukee Water Works, City of Milwaukee
Mark Lurvey	Agricultural Business Operator, Lurvey Turf Nursery
George E. Melcher	Director, Kenosha County Department of Planning and Development
Paul E. Mueller	Administrator, Washington County Planning and Parks Department
Michael P. Rau	General Manager, We Energies-Water Services
Edward St. Peter	General Manager, Water Utility, City of Kenosha
Dale R. Shaver	Director, Waukesha County Department of Parks and Land Use
James Surfus	Senior Environmental Engineer, MillerCoors, LLC

MEMBERS EXCUSED OR OTHERWISE ABSENT

Julie A. Anderson	Director, Racine County Division of Planning and Development
David Ewig	Water Superintendent, City of Port Washington
Jeffrey A. Helmuth	Hydrogeologist Program Coordinator, Wisconsin Department of Natural Resources, Madison
Terrence H. Kiekhaefer	Director of Public Works, City of West Bend
Thomas J. Krueger	Water and Wastewater Utility Director, Village of Grafton

J. Scott Mathie	Director of Government Affairs, Metropolitan Builders Association of Greater Milwaukee
Jeffrey Musche	Administrator/Clerk, Town of Lisbon
George A. Torres	Director, Milwaukee County Department of Transportation & Public Works
Daniel S. Winkler	Director of Public Works and Utilities, City of Lake Geneva
Steven N. Yttri	General Manager, Water and Sewer Utility, City of Oak Creek

GUESTS

Claus Dunkelberg	Water Industry Specialist, Milwaukee 7
Jodi Habush Sinykin	Midwest Environmental Advocates
Paul G. Hayes	Mid Kettle Moraine Partners Group
Randall R. Kerkman	Administrator, Town of Bristol
William McClenahan	Attorney, Martin Schreiber & Associates, Inc.
Steven H. Schultz	Department Head, Water Supply and Wastewater Treatment, Ruekert & Mielke, Inc.

STAFF

Joseph E. Boxhorn	Senior Planner, Southeastern Wisconsin Regional Planning Commission
Michael G. Hahn	Chief Environmental Engineer, Southeastern Wisconsin Regional Planning Commission
Kenneth R. Yunker	Deputy Director, Southeastern Wisconsin Regional Planning Commission

CALL TO ORDER AND ROLL CALL

Chairman Bauer called the meeting to order at 9:00 a.m. Roll call was taken by circulating an attendance signature sheet, and a quorum declared present.

CONSIDERATION OF MINUTES OF THE MEETING OF JULY 22, 2008

Chairman Bauer noted that copies of the minutes of the July 22, 2008, meeting of the Committee had been provided to all members of the Committee for review prior to the meeting, and asked that the Committee consider approval of those minutes.

Chairman Bauer reminded the Committee members that all of the revisions which the Committee directed to be made in the materials reviewed at that meeting were intended to be fully documented in the minutes, or in attachments thereto. He noted that approval of the minutes would constitute approval of the last portion of Chapter VIII, "Alternative Plans: Description and Evaluation," pages 47 through 65, covering Alternative Plan 4 and the chapter summary and the first portion of Chapter IX, "Alternative Plan Comparative Evaluation and Selection of a Composite Plan," pages 1 through 22 covering the comparative evaluation and the conceptual description of the composite plan. He noted that revised copies of Chapter VIII and Chapter IX in their entirety accompanied the minutes and that the approvals of the appropriate sections would be subject to any comments received today on the minutes.

Dr. Cherkauer referred to the second full paragraph on page 4 of the minutes. He noted that the costs of the pumping stations located at the three sewage treatment plants involved in the return flow had been increased to provide an allowance for the control systems needed to support the active management concept for the return flow. He also noted that, while this agreed-to change had been made, the cost for the return flow facilities in total

were now indicated in the revised draft Chapter VIII to be less than the cost indicated in the earlier draft reviewed at the May 22, 2008, meeting. He questioned the reason for the decrease in cost. Mr. Biebel responded that as the composite plans were being developed, the return flow element associated with Alternative Plan 4 and Subalternative 2 to the Composite Plan were reevaluated and were changed based upon Committee input regarding the location of discharge and length of the return flow pipeline. That reevaluation resulted in changes in the components which resulted in changes to the costs for the two subalternatives for the return flow.

[Secretary's Note: The changes made for the two subalternatives for return flow under Alternative Plan 4 included an increase in the unit price for piping in the more-urbanized portion of the pipeline route, a reduction of one pumping station, and a reduction in pipeline length for the return flow to Lake Michigan, as recommended by the Committee, and the addition of the control system costs. Those changes resulted in a net decrease in the capital cost for the subalternative providing for a return flow to Lake Michigan and a net increase in the capital cost for the subalternative with a return flow to the tributary streams. The operation and maintenance costs for both subalternatives were lowered to reflect a unit cost of pumping based upon average pumpage, the proper way to calculate these costs. Design maximum pumpage values had been mistakenly used in the earlier costs.]

Dr. Cherkauer asked if the costs were now finalized. Mr. Biebel replied that they were at this stage of the planning. He indicated, however, that as a final recommended plan is developed, it is possible that further revisions to the costs may be made. Should any such changes materially affect the recommendations, they would be reported to the Committee.

There being no further corrections or additions, the minutes of the meeting of July 22, 2008, were approved as published on a motion by Mr. Rau, seconded by Dr. Cherkauer, and carried unanimously.

CONSIDERATION OF THE PORTION OF CHAPTER IX, "ALTERNATIVE PLAN COMPARATIVE EVALUATION AND SELECTION OF A COMPOSITE PLAN," PAGES 23 THROUGH 49 COVERING A DESCRIPTION AND EVALUATION OF TWO SUBALTERNATIVES TO THE COMPOSITE PLAN AND SELECTION OF AN INITIALLY PREFERRED COMPOSITE PLAN

Chairman Bauer asked the Committee to consider Agenda Item 3. He noted that all Committee members had received a copy of Chapter IX, "Alternative Plan Comparative Evaluation and Selection of a Composite Plan," for review prior to the meeting. He noted that the portion of Chapter IX, pages 1 through 22, covering the comparative evaluation of the four alternative plans and a conceptual description of the composite plan had been reviewed at the July 22, 2008, meeting. He indicated that the materials to be reviewed at this meeting covered the description and evaluation of two subalternatives to the composite plan and the selection of an initially preferred plan.

Chairman Bauer then asked Mr. Biebel to review the portions of Chapter IX concerned on a page-by-page basis. The following comments were made, questions asked, and actions taken during the review.

Mr. Biebel reported a needed revision to the text of the fifth bulleted item on page 24, the revisions being in the interest of clarity.

[Secretary's Note: The text of the fifth bulleted item on page 24 has been revised for clarity. The revised text and tables are included in the revised version of Chapter IX transmitted with these minutes.]

Mr. St. Peter referred to the planned water supply service area in the greater Kenosha area, as shown on Maps IX-2 and IX-9, noting that the areas in the Towns of Bristol and Paris proposed to be served with public water supplies from Lake Michigan through the year 2035 were indicated. He asked if additional areas could be included which the City of Kenosha may be considering for expansion, possibly beyond 2035. Mr. Biebel indicated that the areas in Bristol and Paris proposed to be served with public water were the same as the areas planned to be served with public sewer. Chairman Bauer noted that the areas shown to be served with public water supply were those identified in the adopted regional land use plan. He indicated that, under that plan, no further urban development was envisioned in the two towns in question by the design year of the plan. Ms. Lewis noted that changes in the water supply service areas, such as those raised by Mr. St. Peter, could be considered later in a subsequent plan updating process. The Committee, by consensus, directed that the water service areas as currently mapped should be maintained unchanged for purposes of presenting the initial recommended plan to the public.

Ms. Conley recalled that the earlier plan chapters had indicated that there could be a recommendation to revise the regional land use plan in areas where the plan indicated that there would be a water supply sustainability problem. She asked where that issue would be addressed. Mr. Biebel responded that, based upon the analyses made, the composite plan provided for a sustainable water supply to the design year 2035 under the development conditions envisioned in the adopted regional land use plan; and that no sustainability problems had been identified that would warrant changing the regional land use plan.

Ms. Lewis indicated that it would be important for the minutes and, perhaps, the report itself to address the issue raised by Ms. Conley. She recalled that there had been discussion on whether the land use plan would drive the water supply plan or vice versa. She indicated that at that time, the Committee Chairman had indicated that, in accordance with sound planning practice, the land use plan would serve as the basis for the water supply plan. However, she said, there was the potential for feedback to the land use plan as Ms. Conley has articulated. Mr. Yunker reiterated that the planning has confirmed that there is adequate water supply to support the land use plan. After further discussion, it was agreed to report the discussion in the minutes and to include appropriate text in the chapter concerned.

[Secretary's Note: In order to make the description of the composite plan complete, text has been added beginning on page 51 on the land use element. The added text is included in the revised version of Chapter IX transmitted with these minutes. Text describing the recommended plan and the plan implementation actions, respectively, will also be added to Chapters X and XI.]

Dr. Cherkauer indicated that caution should be used in concluding that a sustainable water supply existed in the margins of the study area, given that there were uncertainties involved in the assumptions on future groundwater pumpage in the areas adjacent to the Southeastern Wisconsin Region. He specifically noted Jefferson County and northeastern Illinois. Mr. Biebel responded that estimates had been made and reported to the Advisory Committee with regard to groundwater pumpage for water supply in areas adjacent to the Southeastern Wisconsin Region. Those estimates were based upon an assumption that the pumpage would remain unchanged, with that assumption being made because there were no long-range plans or studies available to indicate the extent or direction of changes. In the case of northeastern Illinois, he noted that there were plans being developed for additional areas to be served by a Lake Michigan supply. Such action would tend to substantially reduce groundwater pumpage and offset the impacts of new development. In the case of Jefferson County, it was noted that the impacts of groundwater pumping may be expected to be localized, given the location and size of the urban centers concerned and the fact that the aquifers concerned are all locally recharged, the confining shale layer being largely absent in that County. He also noted that the historic drawdown in the deep aquifer was relatively modest in far western Waukesha and Jefferson County, and that there was no indication of sustainability problems based upon drawdown or baseflow reductions at the margins of the Region with Jefferson County and with northeastern Illinois or implications that such sustainability issues would be aggravated by activities beyond the study area.

Chairman Bauer indicated that the amount of development which could be expected in Jefferson County was not clear, in that there have been some changes in attitudes of citizens and public officials from pro-development to anti-development.

Mr. Biebel noted that there was a proposal in place to develop groundwater inventories and modeling in the Rock River watershed by the Rock River Coalition. He indicated that those actions may provide improved information on this issue as some future date.

Mr. Bunker indicated he was pleased to see the high-capacity well siting recommendation included in Element 9 of the composite plan on page 21. He reiterated a concern he previously raised related to the potential cost impact of regulations requiring conservation or related to a utility changing from groundwater to Lake Michigan as a source of supply. He indicated that in these cases, industries may decide to develop their own wells as a source of supply. This then places a greater cost on the other utility users and can lead to other problems associated with well impacts. Mr. Biebel indicated that the composite plan Element Component 9 was intended to address the issue Mr. Bunker had raised, and that the issue would also be addressed in the implementation chapter.

Mr. Czarkowski observed that, if water from groundwater sources through sewer infiltration and inflow was sent to Lake Michigan from areas west of the subcontinental divide, State regulations may require permits for the transfer of such water from the Mississippi River basin to the Great Lakes basin. Consideration of this requirement would technically be required to be considered if such transfer involves two million gallons per day or more.

Ms. Conley indicated that the provision of Lake Michigan water to areas west of the divide will tend to promote growth in those areas, rather than supporting development or redevelopment in areas east of the divide. She indicated that there were cost ramifications associated with that which have not been factored into the analysis. Mr. Biebel indicated that there were alternatives considered that provided a range of the levels of Lake Michigan supply to areas west of the divide. The alternatives ranged from no additional use of Lake Michigan supply west of the divide, to a significant expansion of Lake Michigan supply. He noted that, in the case of all alternative plans, the same land use pattern, as set forth in the regional land use plan, was assumed. He also noted that all of the alternatives assumed an increase in water use in Milwaukee County, based, in part, upon redevelopment assumptions within that County. He indicated that this assumption was made despite a record of reduced water use in recent history.

Chairman Bauer noted that over the years, the Regional Planning Commission has been criticized for projecting higher levels of population and employment growth and attendant land use development in Milwaukee County than actually has occurred or than is expected under projections made by such agencies as the Wisconsin Department of Administration. He indicated this was done to support the land use plan objectives of encouraging new development, as well as redevelopment in that County. However, he pointed out that the land use plan has not been effectively implemented in this regard, a primary reason being unwillingness of County and municipalities to make development decisions in accordance with the regional land use plan—and the failure of environmental organizations to actively support the plan when development decisions are being made. Land use development in outlying areas of the Region, he said, could not, in his opinion, be controlled by restricting water supply, but only through sound land use planning and plan implementation. Mr. Biebel indicated that these concepts had been emphasized in Chapter IV.

Mr. Yunker indicated that the initially recommended composite plan did not include provisions for providing Lake Michigan water supplies to significant areas west of the divide. He noted that the central part of the City of New Berlin, a portion of the City of Muskego, and the City of Waukesha were the only areas west of the divide where Lake Michigan water was proposed to be used to replace groundwater supplies.

Mr. Bunker pointed out that the plan does specifically include the costs for providing Lake Michigan water to the communities west of the subcontinental divide and that the costs are significant.

Ms. Conley indicated that she did not think that the issue of a Village of East Troy well and related impacts on Lake Beulah was covered by the composite plan. Mr. Biebel indicated that the plan Elements 8, 9, and 10 on pages 20, 21, and 22, as well as the recommended well siting procedure set forth on page 23 were intended to generally address the issue raised. However, he agreed that the specific issue relating to the Village of East Troy well was not evaluated on a site-specific basis. He indicated that it was his understanding that the issue had been evaluated on a site-specific basis by the parties involved and that there was ongoing litigation related to the well and its potential impacts. Given that situation, it was concluded no site-specific recommendations were warranted. Mr. Cotter indicated that the plan should not specifically address the East Troy-lake Beulah issue, as the litigation process which is underway will determine the outcome.

Mr. Bradbury referred to the well siting procedure description on page 23. He indicated that as that procedure was undertaken, it would be most desirable to consider the cumulative impacts of multiple wells. Mr. Biebel responded that he was concerned with expanding the scope of the well siting to include composite impacts of multiple wells, as such a change could make the recommendations too ominous and, in some cases, impractical. He indicated that, to an extent, the regional plan considered the multiple impacts on an areawide basis. After further discussion, it was agreed to consider a refinement to the text covering the well siting procedures on page 23.

[Secretary's Note: The text covering well siting procedures on pages 21 and 23 has been refined to indicate that consideration should be given to the composite impact of the multiple wells where future multiple well locations are known and are within locations where the impacts would be expected to be overlapping. The revised text is included in the revised version of Chapter IX transmitted with these minutes.]

Dr. Cherkauer referred to the groundwater pumpage quantities associated with Subalternative 1 to the Composite Plan on the bottom of page 25. He noted that there were inconsistencies between those quantities, the quantities reported on page 27 under the impacts analysis, and the modeled values. Mr. Biebel indicated the quantities would be reviewed and revised as appropriate.

[Secretary's Note: The amounts of groundwater being pumped under the subalternatives to the composite plan on pages 25, 34, and 37 have been revised as appropriate and made consistent. The revised values are included in the revised version of Chapter IX transmitted with these minutes.]

Ms. Conley referred to the groundwater pumpage amounts expected under Subalternative 1 to the Composite Plan on page 25 and noted those amounts exceeded the 2005 amounts and the amounts in some of the alternative plans considered. She questioned if the groundwater would be sustainable under the composite plan. Mr. Biebel responded that the year 2035 groundwater pumpages under Subalternative 2 of the Composite Plan was about the same as the 2005 pumpage, and was less than any alternative plan considered, except Alternative Plan 4 which has substantially more Lake Michigan use. He noted that the analyses associated with the alternative and composite plans specifically evaluated the impacts, including groundwater pumpage and sustainability. He indicated that Subalternative 2 of the composite plan was preferred over Subalternative 1, in part, because of the reduction in impacts to the surface waters and superior performance relating to aquifer sustainability.

Mr. Grisa referred to Map IX-1 and noted that the Lake Michigan supply connections to Brookfield and Elm Grove and other new service areas were shown to be made directly to the Milwaukee Water Works. He asked if those connections could be made to other existing systems. Mr. Biebel responded in the affirmative, noting that under Alternative Plans 2, 3, and 4 other options for connecting to a Lake Michigan supply had been evaluated. He particularly cited the options of connections through the systems of the Cities of Wauwatosa and West Allis. Mr. Biebel indicated, in some cases, the costs of the alternative connections were similar to the costs for direct connection to the Milwaukee Water Works. After further discussion, it was agreed to expand the text to indicate that there were alternative means for connection of utilities to a Lake Michigan supply.

[Secretary's Note: The text covering Composite Plan Elements 2 and 3 on page 14 and the description of subalternatives to the composite plan on page 24 have been revised to indicate other viable options for a Lake Michigan connection were available. The revised text is included in the revised version of Chapter IX transmitted with these minutes.]

Mr. Grisa referred to Map IX-9 and noted the large water main extension from the south side of the City of Milwaukee to serve Waukesha, plus a second connection from a more northerly point to serve eastern Brookfield. He asked if it might be more cost-effective to serve Brookfield and Waukesha with one connection. Mr. Biebel agreed that would be possible. After discussion, it was agreed to add text indicating alternative connections to the Lake Michigan supplies were available and should be considered further during plan implementation phase of project development.

[Secretary's Note: The text on page 37 has been expanded to indicate that alternative connection to Lake Michigan supply sources were available and should be considered further under the plan implementation phase. The expanded text is included in the revised version of Chapter IX transmitted with these minutes.]

Ms. Conley referred to the description of Subalternative 1 to the composite plan section on page 26 and asked if the reference to individual point-of-entry treatment devices was a reference to water softeners. Mr. Biebel responded that in most, but not all, cases, such devices were for water softening purposes. However, he noted that other devices, or dual devices, are also used for purposes, such as iron filtration.

Ms. Lewis asked why the composite plan included provisions for Cedarburg and Grafton to construct a new water treatment plant, rather than to purchase Lake Michigan water from a utility with an existing treatment plant. Mr. Biebel responded that the options of purchasing Lake Michigan water from the Milwaukee Water Works and the City of Port Washington had been evaluated as part of Alternative Plan 4. The costs of the alternatives were similar in cost. He added that there was a local initiative underway by the Village of Grafton to begin exploring the option of a new Lake Michigan water treatment plant. Ms. Lewis indicated that it was becoming more challenging each year to operate a Lake Michigan water treatment plant due to changing regulations and this favored use of existing plans with available capacity. After further discussion, it was agreed to indicate that there were viable options for providing a Lake Michigan supply to the Cedarburg and Grafton areas.

[Secretary's Note: The text on pages 14 and 37 has been revised to indicate that other viable options for a Lake Michigan connection for the Cedarburg-Grafton area are available. The revised text is included in the revised version of Chapter IX transmitted with these minutes.]

Ms. Conley referred to Maps IX-4 and IX-5 and asked if there was a known relationship between the loss or gain in baseflow and the amount of wastewater treatment plant effluent in the streams which were cross-hatched to indicate they received wastewater treatment plant effluent. Mr. Biebel responded that the amount of wastewater treatment plant effluent would almost always be expected to be greater than the baseflow changes due to groundwater pumping. He noted that baseflow changes rarely would be on the order of 500,000 gallons per day. However, wastewater treatment plant effluent quantities almost always exceed that amount. He also indicated that the wastewater generated in a community always exceeded the water used. Thus, a typical increase in wastewater discharge, compared to water withdrawn, was indicated. Dr. Cherkauer suggested that the focus be on the streams which did not receive wastewater treatment plan effluent discharges.

[Secretary's Note: The text covering baseflow reduction in streams on page 28 has been revised to indicate that the impacts of a loss of groundwater-derived baseflow have been mitigated from a quantity perspective in streams which received wastewater treatment plant effluent. The revised text and tables are included in the revised version of Chapter IX transmitted with these minutes.]

Dr. Cherkauer referred to the text on pages 28 and 29 and Map IX-5 referring to streams with baseflow reductions of 25 percent or more under Subalternative 1 of the Composite Plan. He recommended that the map and text be checked for consistency. Mr. Biebel indicated that this would be checked.

[Secretary's Note: The text on pages 29 and 30 covering the streams with 25 percent baseflow reduction has been checked and revised as appropriate to be consistent with Map IX-5. The text is included in the revised version of Chapter IX transmitted with these minutes.]

Ms. Conley referred to the section of the text on surface water quality impacts on pages 42 and 43. She noted that it was indicated that the phosphorus concentrations in the return flow were indicated to be similar to the ambient concentrations in the receiving stream. She noted that despite this comparison, there would be an increase in the phosphorus loading to Lake Michigan. Mr. Biebel agreed, but noted that the loading from the return flow would be insignificant compared to the loading from the larger wastewater treatment plants discharging directly to the Lake or from nonpoint sources. He also noted that the concentrations being discharged would be much lower than would be permitted for discharges directly to the Lake. After further discussion, it was agreed to add phosphorus loadings as an additional issue to be considered.

[Secretary's Note: The text covering the water quality impacts of the return flow under Subalternative 2 to the Composite Plan on page 48 has been revised to add the issue of phosphorus loading. The revised text is included in the revised version of Chapter IX transmitted with these minutes.]

Mr. Grisa referred to the description of the return flow component on the bottom of page 35 and indicated he thought that the return to the Root River was being considered by the City of Waukesha. Mr. Biebel noted that consideration was given to returning flow to both the Root River and to Underwood Creek. However, the City of Waukesha Water Utility preferred option was to return the flow to Underwood Creek. Mr. Duchniak agreed. He noted that if the water were purchased from the City of Milwaukee, the Underwood Creek tributary would return the water closer to the source of supply than the Root River option and, thus, this would be more consistent with the provisions of the Great Lakes Compact.

Dr. Cherkauer raised concerns regarding the return of wastewater via Underwood Creek as described on page 35. He indicated there were real costs involved which were not addressed relating to bank erosion and sediment. He noted that the return flow would increase the baseflow in Underwood Creek by five times, the median flows by two times, and the 10th percentile flow by 50 percent. He indicated that these were major changes in the flow regime which could result in bank erosion and downstream sedimentation. He also indicated that increased phosphorus and nitrogen loadings could contribute to algal blooms. He added that the costs of these impacts may be borne by the Milwaukee Metropolitan Sewerage District and not the Waukesha Water Utility. Dr. Cherkauer also noted that flooding problems could also be increased.

Mr. Biebel indicated that the section of Underwood Creek impacted was currently lined downstream the proposed point of discharge and that any effort to remove the lining and redesign the channel would have to result in a design which would prevent erosion under a full range of flows. He also noted that erosion in Underwood Creek was largely the result of extreme high-flows, and that the return flow would be diverted to the Fox River well before such conditions would occur. He also noted that the concept of the active flow management concepts would halt any return flow during periods of high flow well before bankfull conditions would occur. Thus, concern over flooding was not warranted and the issue of erosion was not likely to be a major concern, but should be evaluated in detail.

Mr. Bunker noted that the effluent from the Waukesha wastewater treatment plant meets current permit levels and is currently discharged to the Fox River and no algae blooms are apparent. Mr. Biebel added that the effluent quality was very high, with suspended solids concentrations at about one to two milligrams per liter and phosphorus concentrations less than 0.2 milligrams per liter.

Dr. Cherkauer noted that the Fox River was a larger stream than Underwood Creek. Mr. Biebel agreed, but noted that the increase in baseflow and low-to-medium flows would be viewed by many as being positive for fish and aquatic life and recreational uses. He noted that the Wisconsin Department of Natural Resources (WDNR) fishery and water quality staff has met several times to consider the potential positive and negative impacts of the return flow options. He noted that the initial reaction was generally positive. Mr. Duchniak indicated that the WDNR staff were of the opinion that an improvement in the fishery in the tributary streams could be achieved with the return flow.

Mr. Grisa noted that Underwood Creek normally has a flow in Brookfield even during dry periods.

Mr. Rau noted that, as a resident who lived near Underwood Creek, he would welcome an increase in baseflow.

Mr. Grisa noted that if Waukesha were to contribute flow to the Menomonee River, they may have to contribute to the watercourse improvement projects.

Dr. Cherkauer indicated that the Committee was being asked to make a decision without complete information about this issue. He asked if a flow routing model had been used to analyze the impacts. Mr. Biebel indicated in the negative, indicating that flow routing and sediment modeling would be a major work effort beyond the scope of the water supply planning effort.

Chairman Bauer noted that Dr. Cherkauer has raised some valid points. He noted that if the impacts of the return flow to Underwood Creek prove to be untenable, the composite plan which would then be selected would have to be amended to include return flow directly to Lake Michigan. Under that scenario, the cost of Subalternatives 1 and 2 to the Composite Plan were within 10 percent of each other, and the costs are, thus, considered equal. Consideration of the other factors would still favor Subalternative 2 to the Composite Plan as the initially preferred plan. He asked if the Committee would favor changing Subalternative 2 to include a return flow directly to Lake Michigan. Dr. Cherkauer noted another option would be a discharge split between Underwood Creek and the Root River.

Mr. Ericson stated that it was good to have a description of all options. He noted that the options would be scrutinized by the Wisconsin Department of Natural Resources and no approvals would be given if major environmental problems were expected.

Mr. Bunker stated that under the proposed plan, the City of Waukesha would be given as much flexibility as possible in considering options. He noted that, because of the complexity of the options and the related stream and effluent standards, more-detailed study will be required as implementation takes place. Ms. Lewis agreed with Mr. Bunker, indicating that more-detailed evaluation was needed before a final selection of the best option for return flow could be made.

Chairman Bauer observed that the initially recommended plan to be presented for public review and reaction would include a recommendation that the City of Waukesha would use Lake Michigan as a source of supply rather than groundwater. However, the required return flow could be presented in the form of alternatives with no recommendation with respect to the best configuration for the needed return flow pending more-detailed environmental evaluations. He asked Dr. Cherkauer if he was in agreement with the use of a Lake Michigan supply for the City of Waukesha if the return flow alternatives are all presented with no attendant recommendation. Dr. Cherkauer indicated in the positive. Ms. Lewis agreed with Dr. Cherkauer to the extent that the alternatives for return flow should all be presented with no recommendations with respect to the best return option pending more-detailed evaluations.

After further discussion, it was agreed to modify the text to provide information on the alternatives for return flow with no alternative being recommended and all options being preserved, as well as the need stated for further

more-detailed evaluation of the options prior to a recommendation being developed during the plan implementation phase.

Mr. Grisa asked if the cost table would be revised also. Mr. Biebel indicated in the affirmative, noting that a range of costs would be provided for Subalternative 2 to the Composite Plan.

[Secretary's Note: The text covering Subalternative 2 to the Composite Plan on pages 36 and 37 and Table IX-23 has been revised to reflect the maintenance of all the alternative options for the return flow component. The revised text and table are included in the revised version of Chapter IX transmitted with these minutes.]

Ms. Lewis asked if the Compact compliance costs were included. Mr. Biebel indicated that the composite plan was consistent with the Compact and that the costs for implementation of projects included a 35 percent allowance of items, such as contingencies, administration, legal, and engineering. He indicated these costs were considered to cover the preliminary design and detailed evaluation needed to apply for the necessary permits.

Ms. Conley referred to the statement in the first partial paragraph on page 42, that additions to the streamflow in the Fox River are not additive due, in part, to interactions with quarries. She asked for clarification. Mr. Biebel responded by indicating that, if all the discharges to the Fox River, including wastewater treatment plant effluent and pumping from quarries in the Waukesha, Pewaukee, Lisbon, and Sussex areas are added up, they exceed the measured downstream river flow. He added that, therefore, there must be groundwater recharge occurring along the River, as well as groundwater discharges into the quarries.

Ms. Conley referred to the section on phosphorus concentrations in the return flow, as set forth in the second paragraph on page 46. She recommended that the phosphorus loadings, as well as the concentrations, were also important to consider, as such loadings can contribute to algae blooms. Mr. Biebel reiterated that the concentrations of phosphorus in the return flow would be relatively low, in the order of 0.1 to 0.2 milligrams per liter. Mr. Yunker recommended that the loadings be set within the context of other sources of phosphorus. Ms. Lewis agreed that the context of the loading be included.

[Secretary's Note: The phosphorus inputs of the return flow on page 48 has been revised to indicate the annual loading and the comparison of that loading to other sources to Lake Michigan. The revised text is included in the revised version of Chapter IX transmitted with these minutes.]

Mr. Bunker indicated that literature does not support the contention that small increases in phosphorus can cause algae blooms in Lake Michigan. He added that algae blooms are more the result of increased light penetration resulting from actions, such as zebra and quagga mussel activity.

Ms. Lewis referred to the components of the low-level water conservation program components listed on page 53 and noted that she did not recall water conservation rate structures being included in that program. Mr. Biebel responded that the details of each program level had not been provided previously. He added that the measures included under each program level were intended to be a guide for the utilities to consider for inclusion under each level. It was intended that the specific components for each utility program be developed on a utility-by-utility basis.

Mr. Bunker noted that rate structure changes were a significant consideration which may negatively affect the economics for major water users and, thus, impact the industrial base of a community.

Ms. Lewis indicated that the water conservation rate structure belonged under the intermediate-level program. Mr. St. Peter agreed, and also questioned the outdoor watering restriction component.

After further discussion, it was agreed to move the water conservation rate structure measure to the intermediate-level water conservation program.

Mr. Shaver recommended, and it was generally agreed, to add a clarification to the first sentence of the first full paragraph on page 47, indicating that the measures for each water conservation program level were intended to be considered by the utilities on a utility-specific basis.

Mr. Yunker recommended, and it was generally agreed, that the text for each water conservation program level be expanded to generally indicate which type of utilities would be included in which level of program.

Mr. Biebel indicated that the text for the water conservation measures should also be expanded to indicate that any other measures required under the Compact or under the State rules currently being drafted would also apply.

[Secretary's Note: The text covering the water conservation measures on pages 53 and 54 have been revised to reflect the changes recommended. The revised text is included in the revised version of Chapter IX transmitted with these minutes.]

Ms. Lewis referred to Table IX-34 and noted that the rankings of the first, third, and fourth objectives were very close to being equal based upon the evaluation of the individual standards as set forth in Table IX-33. She then indicated that the primary differences between the two subalternatives to the composite plan related to the relative importance of the second objective relating to the conservation and wise use of the surface and groundwater supplies and the fifth objective which related to responsive and adaptive plans. Mr. Biebel responded that the Subalternative 2 to the Composite Plan was considered superior in meeting the second objective, which could be considered more important than the fifth objective. He noted, however, that the evaluation did indicate that both subalternatives meet the objectives in a similar way. Ms. Lewis suggested that text under the concluding paragraph on page 51 did not do justice to all the considerations which went into the evaluation, and recommended the text be expanded and accordingly. The Committee concurred by consensus.

[Secretary's Note: The text covering the conclusions of the subalternative evaluation on page 51 has been revised and a summary section has been added to explain the considerations associated with the evaluation of the two subalternatives of the composite plan. The revised text and summary section are included in the revised version of Chapter IX transmitted with these minutes.]

Ms. Conley referred to Table IX-1 and noted that the rating for Objective No. 1 should be 1.0 for Alternative Plan 3 and 2.0 for Alternative Plan 4. The change was duly noted. Mr. Yunker noted that the correct ratings had been carried over to Table IX-2 which summarized the ratings of the five objectives.

Ms. Conley referred to the high-level water conservation program described on page 54. She noted that the rainwater harvesting and graywater reuse components were being incorporated into new housing units. She cited the Metropolitan Builders Association Trend Home as an example. She indicated that such system should not be considered impractical or unaffordable. Mr. Biebel responded that he was familiar with was the Trend Home system and that the costs of a graywater system was expected to range from \$9,000 to \$12,000, and that the cost of the rain harvesting system was expected to range from \$3,000 to \$10,000. Given such costs, plus operation and maintenance requirements and costs, it may be expected that such measures would be included in only a very limited number of new buildings where there is an individual preference or other special circumstance would dictate the inclusion. He indicated that the cost of retrofitting these measures into existing structures would be much higher and much less likely to come about on any broad scale. He indicated that the initially preferred plan was written, not to discourage the use of such measures if dictated by individual preferences, but that the economics, effectiveness, and practicality did not warrant inclusion of such measures at the regional level.

Mr. Melcher noted that maintenance and repair of a graywater reuse or rain harvesting systems was an important consideration. He noted such maintenance was essential to maintain public health and the effectiveness of the systems. Mr. Bunker added that a risk assessment procedure and associated regulatory framework have not been developed in Wisconsin to specifically address some of the serious potential health hazards related to graywater reuse and rain harvesting systems.

Mr. Grisa referred to the cost of the water conservation program cited in the second full paragraph on page 48. He asked if the water conservation measures would reduce the other plan costs. Mr. Biebel responded that the design 2035 water demands had been developed accounting for the water conservation measures and costs of the water supply facilities to support the 2035 conditions reflected the reduced demands.

[Secretary's Note: The text covering the water conservation measures on page 55 has been expanded to indicate that a reduced water demand was accounted for in developing the needed water supply facilities and associated costs included for each of the alternative plans. The expanded text and tables are included in the revised version of Chapter IX transmitted with these minutes.]

Ms. Lewis noted that if the costs for the high-level water conservation measures approached \$20,000, the payback in water savings would be very long. She noted that typical water bills were on the order of \$100 per quarter.

Ms. Conley indicated that the Advisory Committee could recommend policy changes which would selectively recommend more-stringent water conservation where supplies are stressed. Mr. Biebel responded that a review of the initially recommended plan indicates that there are not at the regional level areas where the supply is anticipated to be stressed to the extent that significantly costly additional high-level conservation measures would be warranted. However, he noted that such measures could be considered in areas where there is a need for mitigating the impacts of a new well, as set forth in the well siting analysis recommendations.

Mr. Shaver reported that the County had recently been evaluating the level of conservation to include a new building for the Retzer Nature Center in conjunction with Leadership in Energy and Environmental Design (LEED) benchmarks. He noted that some of the measures could not be justified based upon the economics of the situation and the return on investment. He noted that some measures could only be justified in the case like the Retzer Nature Center with its environmental education function.

Mr. Holschbach noted that the costs for conservation measures may decrease over time as more are installed.

Mr. Shaver indicated that he agreed with the conclusion in the chapter on the economics of the high-level water conservation measures. He noted these practices could impact the availability of affordable housing. However, he added that the plan should not discourage people from considering the higher-level measures if there were personal or other reasons to do so.

Ms. Lewis noted that the areas served, or to be served, with a Lake Michigan supply would have to implement the requirements of rules currently being developed by the Wisconsin Department of Natural Resources staff as a component of the Great Lakes Compact implementation.

[Secretary's Note: The text covering the water conservation evaluation on page 56 has been revised to more explicitly encourage the consideration of a high level of water conservation should personal choices or other circumstances dictate. In addition, the need to consider the potential water conservation requirements which may be included in the WDNR rulemaking process currently underway to implement the Great Lakes Compact. The revised text and tables are included in the revised version of Chapter IX transmitted with these minutes.]

Mr. Grisa asked how the program levels for each utility as listed in Appendix K were arrived at. Mr. Biebel indicated that the levels were based upon the existing source of supply, the sustainability and quality of that source, and expected infrastructure needs. He noted that those utilities with a Lake Michigan source of supply were assigned a low-level water conservation program. Those utilities with a groundwater source of supply were assigned an intermediate- or advanced-level program, depending upon the aquifer sustainability and quality issues and the need for future infrastructure. After further discussion, it was agreed to refine the basis and decision-making for recommended levels of water conservation in order to factor in the initial plan recommendations relating to the source of supply, rather than only considering the existing source.

[Secretary's Note: The text of Chapter IX covering water conservation on page 59 and Appendix K have been revised to incorporate consideration of the source of supply included in the preliminary recommended plan. The revisions are included in the revised version of Chapter IX and the revised version of Appendix K transmitted with these minutes.]

Ms. Conley asked if the cost savings expected from the water conservation programs could be added to Appendix K. Mr. Biebel indicated that that would be difficult, since the levels of water conservation assumed were embedded into the costs for all of the alternative plans. He agreed to review the procedures to see if the savings could be segregated.

[Secretary's Note: After review of the analyses used to evaluate the alternative plans, it was concluded that specific cost savings resulting from water conservation measures could not be identified, since the effect of the water conservation measures is embedded in the design of each water demand used for all alternatives. To do so would require reestimating the alternatives with different higher water demands assuming no water conservation. However, the text on page 49 has been revised to reference the state-of-the-art report for costs and effectiveness of various water conservation measures.]

Chairman Bauer recommended, and the Committee agreed by consensus, to add a summary section to the chapter which would briefly summarize the selected composite plan to be considered further through a public presentation and review process.

There being no further questions or comments, pages 23 through 49 (now pages 24 through 59) of Chapter IX, "Alternative Plan Comparative Evaluation and Selection of a Composite Plan," covering the description and evaluation of two subalternatives to the composite plan and the selection of an initially preferred plan, of SEWRPC Planning Report No. 52, *A Regional Water Supply Plan for Southeastern Wisconsin*, was approved as amended on a motion by Mr. Melcher, seconded by Mr. St. Peter, and carried with Ms. Lewis abstaining and all others voting in favor.

OTHER BUSINESS

Chairman Bauer indicated that the initially preferred composite plan would now be subject to public review. The public outreach activities would include meetings with county-based municipal official organizations and the holding public informational meetings. The results of the public meetings and the other preceding outreach activities may require changes to be made in the preliminary recommended plan.

He indicated that the Commission staff would advise the Advisory Committee of any scheduled meetings in their related counties. He noted that the first such meeting was scheduled to be held with the Milwaukee County Intergovernmental Coordinating Council on October 13th at the SEWRPC Milwaukee County office in the Milwaukee County Research Park. Chairman Bauer encouraged the Advisory Committee members to brief their political management and to attend the appropriate meetings and lend support to the planning program as may be appropriate. In addition, a meeting has been scheduled in November with the Walworth County elected officials.

DATE AND TIME OF NEXT MEETING

After brief discussion, it was agreed that the next meeting of the Advisory Committee would be tentatively scheduled to be held at the Commission offices on Tuesday, December 16, 2008, beginning at 9:30 a.m. Chairman Bauer noted that a draft of Chapter X, "Recommended Regional Water Supply Plan," should be ready for Committee consideration. [The next meeting of the Advisory Committee was subsequently rescheduled for June 30, 2009, at 9:30 a.m.]

ADJOURNMENT

There being no further business to come before the Committee, on a motion by Mr. Bunker, seconded by Mr. Ericson, and carried unanimously, the meeting was adjourned at 11:47 a.m.

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