

Minutes of the Third Meeting of the  
**ENVIRONMENTAL JUSTICE TASK FORCE**

DATE: March 18, 2008  
TIME: 4:00 p.m.  
PLACE: HeartLove Place, Inc.  
3229 N. Dr. Martin Luther King, Jr. Drive  
Milwaukee, Wisconsin

Members Present

Adelene Greene..... Director, Division of Workforce Development,  
Chair Kenosha County  
Ness Flores..... Attorney, Flores & Reyes Law Offices  
Joette Heckenbach ..... Cope Services, Ozaukee County  
N. Lynnette McNeely..... Attorney, Law Offices of Thomas J. Awen  
Brian Peters..... Housing Program Coordinator, Independence First  
Willie Wade ..... Alderman, City of Milwaukee  
Theresa Schuerman..... Employment Specialist/Migrant Worker Outreach,  
Walworth County Job Center

Guests and Staff Present

Christal Benn ..... Program & Planning Analyst,  
Wisconsin Department of Transportation, Southeast Region  
Robert P. Biebel..... Special Projects Engineer, SEWRPC  
Sonia Dubielzig..... Transportation Planner, SEWRPC  
Philip C. Evenson..... Executive Director, SEWRPC  
Gary K. Korb ..... Regional Planning Educator, UW-Extension/SEWRPC  
Peter McAvoy ..... 16<sup>th</sup> Street Community Health Center  
Karyn Rotker..... Attorney, ACLU of Wisconsin  
Kori A. Schneider ..... Program Manager, Community & Economic Development,  
Metropolitan Milwaukee Fair Housing Council  
Kenneth R. Yunker ..... Deputy Director, SEWRPC  
Sandra Zupan ..... University of Wisconsin-Milwaukee

**WELCOME AND INTRODUCTIONS**

Chairperson Greene called the meeting of the Environmental Justice Task Force to order at 4:08 p.m., welcoming those in attendance. She asked the other Task Force members, staff, and guests present to briefly introduce themselves. Ms. Greene noted that Nancy Holmlund had contacted the Commission offices to express her regrets at missing the meeting.

**APPROVAL OF MINUTES OF NOVEMBER 27, 2007, MEETING**

Ms. Greene noted that not enough Task Force members were present to constitute a quorum. Therefore, the minutes of the last meeting could not be approved or changed; however, she asked if there were any questions or comments on the minutes of the Task Force's second meeting held November 27, 2007. There were no questions or comments.

## **CONTINUED CONSIDERATION OF SEWRPC PUBLIC INVOLVEMENT AND OUTREACH PROCESS**

Ms. Greene asked Mr. Evenson to talk about the Commission's public involvement and outreach process, noting that this was an item of continuing interest from the previous meeting. Mr. Evenson referred to the summary of the public involvement and outreach efforts presented by Mr. Korb at the November 27, 2007 meeting (see Attachment 1 to the minutes). He drew the Task Force's attention to page 2 of the summary, which listed the Task Force suggestions from the previous meeting for additions to the Commission's public involvement and outreach efforts. Mr. Evenson said that he appreciated the suggestions, and that staff would utilize these suggestions in subsequent planning efforts. He added that Task Force members could make further suggestions for additions to the public involvement and outreach activities, and they would be added to the list.

Task Force members raised the following discussion points and comments regarding the public involvement and outreach process:

1. Ms. Schuerman asked Mr. Evenson if Commission staff had set up an e-mail listserve for Task Force members, as had been proposed during e-mail communications between Task Force members. Mr. Evenson replied that the Commission had purchased the software and the listserve should be operational in the next few weeks. Mr. Yunker added that the Task Force members could use the listserve to contribute further improvements to the Commission's public involvement and outreach methods.
2. Ms. Schuerman observed that the language and format of the newsletter she had received describing the Regional Water Supply Plan was very technical and intimidating to readers. She suggested sending introductory, easy-to-grasp materials in advance of the technical newsletters to better prepare readers. Mr. Yunker noted that the first newsletter usually introduces the study in a more general way. He noted that for many studies, the Commission has prepared a short brochure, and developing a brochure for the water supply study would summarize the most important information relevant to the study.

Mr. Flores suggested that the Commission also include an executive summary at the beginning of each newsletter. Mr. Evenson recognized that the Commission sometimes struggles to produce easy-to-understand summaries of its studies. He agreed that the Commission will introduce every newsletter with an executive summary to help readers understand the report and read it in full if they desire.

## **CONTINUED CONSIDERATION OF SEWRPC ADVISORY COMMITTEE SELECTION APPOINTMENT PROCESS**

Mr. Evenson directed the attention of the Task Force to the summary of the advisory committee selection and appointment process as presented at the November 27, 2007, meeting (see Attachment 2 to the minutes). He pointed out the current actions taken by the Commission, and the suggestions of the Task Force for additional Commission actions. In a response to a question from Mr. Evenson, Mr. Korb stated that he had not yet identified additional minority professional organizations to be consulted for appointments to advisory committees, and asked that Task Force members email him their suggestions.

Task Force members raised the following discussion points and comments regarding the advisory committee selection and appointment process:

1. Chairperson Greene asked if there were any advisory committees in the process of formation. Mr. Evenson stated that the Commission would soon commence work on the regional housing study, and the Task Force could review a draft of the advisory committee roster prior to official appointments occurring. In response to a question from Mr. Peters, Mr. Evenson affirmed that the Task Force will have input on who is appointed to the advisory committee.
2. Mr. Flores inquired how many advisory committees currently exist. Mr. Evenson estimated there are about 15 advisory committees, although not all are regional committees. He noted that the structure and agenda of advisory committees vary greatly: some meet regularly, while others rarely; some have membership that is roughly proportional to the population of the represented jurisdictions, while others do not; and some are directly appointed by the Commission, and some include members with appointments made by chief elected officials at the request of the Commission. Mr. Evenson also noted that a list of the advisory committees and their members is available on the Commission's website ([www.sewrpc.org](http://www.sewrpc.org)) under the "About the Commission" category on the site's sidebar.

Mr. Wade inquired whether the mission of each advisory committee was also described on the Commission's website. Mr. Evenson replied that they were not, but that the website would be expanded to include a brief mission statement for each advisory committee. Mr. Yunker noted that the mission for each advisory committee may be apparent in each committee's title.

3. Mr. Wade commented that when recommending individuals to serve on advisory committees, Task Force members should consider the entire experience of the individual, not just whether the person is a racial minority. He stated that an individual's gender or race does not always translate to an understanding of the experiences of socio-economically disadvantaged groups. He added that the Commission and the Task Force should work together to expand the pool of potential advisory committee representatives who are racial minorities, individuals with disabilities, or from disadvantaged backgrounds. Ms. McNeely agreed and added that a single representative for disadvantaged populations on an advisory committee would not necessarily be able to speak to the issues faced by every type of population, such as racial minorities, disabled individuals, or individuals living in poverty.
4. Ms. McNeely inquired why the Commission struggled to appoint diverse advisory committees, observing that the Task Force membership was very diverse. She asked whether the appointed members of the Commission represented the diversity in the Southeastern Wisconsin Region. Mr. Evenson responded that of the 21 Commission members, three are African-American, and one is Hispanic.
5. Mr. Flores suggested the Task Force's recommendations for the advisory committee selection process should be applied as vacancies arise in existing committees. Ms. Heckenbach inquired whether advisory committee member appointments had term lengths. Mr. Evenson replied that advisory committees do not have terms, because sometimes Commission studies take a long time to complete and it is preferable to have the same committee members overseeing the study from start to finish. He further clarified that sometimes vacancies did arise on committees because members move away or change jobs. He stated that some committee appointments are based on job position; the person who occupies the job position will also occupy the spot on the committee.

He also noted that the Commission also does studies from time to time for subareas of the Region, such as a county or municipality, and it is the responsibility of the government entity that requested the study to make appointments, not the Commission. Ms. Heckenbach asked if an existing advisory committee could be expanded to include a representative of an interest or perspective not currently represented on the committee. Mr. Evenson replied that if a good argument were made for the addition, the Commission could request the government entity to add another member to an advisory committee.

Mr. Yunker suggested making the advisory committee appointments a topic for the next meeting. He proposed sending Task Force members the rosters of three example committees along with an explanation of how the members were selected. At the next meeting, the Task Force could discuss the appointment process. He suggested using the rosters of the Regional Water Supply Planning Advisory Committee, the Technical Coordinating and Advisory Committee on Regional Transportation System Planning, and one additional committee to be determined.

6. Ms. McNeely stated that one of the purposes of the Environmental Justice Task Force is to improve the representation of minority, low-income, and/or disabled populations on the advisory committees of the Commission. She stated that the Task Force should move to create a new seat on advisory committees to represent the interests of minority, low-income, and/or disabled populations. Mr. Evenson noted that Ms. Greene is a member of the Commission and stated that he would defer to her to make a recommendation for consideration of the Commission. Ms. Greene stated that she would prefer the Task Force first look at the advisory committees as listed and described on the Commission website; discuss the information on the advisory committee appointment process at the next Task Force meeting as suggested by Mr. Yunker, and then develop recommendations to take before the Commission.

Ms. Greene thanked Task Force members for their guidance and assistance, and proposed moving on to the next agenda item.

#### **CONTINUED CONSIDERATION OF SEWRPC REGIONAL WATER SUPPLY PLANNING EFFORT**

Ms. Greene asked Mr. Evenson and Mr. Biebel to give a presentation further describing the evolving water supply plan, reminding the Task Force that at the last meeting they had expressed further interest in this study. Mr. Biebel, SEWRPC Special Projects Engineer, proceeded, including discussion of regional demographic and economic forecasts, regional land use plan, water supply forecasts, and initial analysis of impacts of the first alternative water supply plan, which represents continued reliance on existing sources of water supply. A memorandum distributed in advance was used in the presentation (see Attachment 3 to these minutes). Discussion and comments regarding Mr. Biebel's presentation included:

1. Ms. Heckenbach asked whether there was a mistake on the summary of the regional water supply plan provided previously to the Task Force as a handout (see Attachment 4 to these minutes). She noted that in the bullet point describing the fourth alternative regional water supply plan, Ozaukee County should not be included in the list of counties where Lake Michigan water supply would be extended west of the subcontinental divide. Mr. Evenson stated that the summary would be corrected by deleting Ozaukee County from the list.
2. Ms. McNeely asked whether the forecasts for water use considered industrial water use, and whether industrial water use was more intensive than other water uses. Mr. Biebel responded that

the forecasts considered all existing and future water uses, including industrial water use. He noted that the intensity of industrial water use has been declining (gallons of water demand per day per acre of industrial development). Mr. Yunker noted that page 7 of the newsletter presented forecast unit water demand factors for each type of land use. He added that based on these factors, residential water use demand (70 gallons per capita per day at 2.5 persons per household and 4 housing units per acre) was approximately equal to commercial and institutional land use unit water demand, but was about one-half that of industrial unit water demand.

3. Mr. Flores inquired if the regional land use plan could be amended, and if the plan has been amended in the past. Mr. Evenson responded that the regional land use plan could be amended by the Commission. He stated that the potential for the water supply study to result in an amendment to the regional land use plan has been recognized from the beginning of the water study. Ms. McNeely asked where there were regulations ensuring regional land use plan implementation. Mr. Evenson responded that under State Statutes, the recommendations in Commission plans are advisory, and the authority to make land use decisions lies with local governments.
4. Ms. McNeely asked whether there were any regulatory provisions that would prevent a local government from allowing development to occur where the local water supply is not sufficient to serve it. Mr. Wade responded that elected local government officials are responsible for permitting land use development. Some municipalities have existing water supply systems that make it easy to expand, including municipalities that purchase water from a nearby existing water supply utility. He noted that many of the communities adjacent to the City of Milwaukee purchase water from the Milwaukee Water Works for this reason.
5. Ms. McNeely asked whether the City of Milwaukee could use the sale of water to adjacent communities in order to leverage agreements with those communities on matters unrelated to water supply, and if the Commission would consider such agreements in its analysis of alternative water supply plans. Mr. Wade confirmed that the City of Milwaukee uses water supply to leverage agreements with surrounding communities. He cited as an example an agreement the City of Milwaukee made to supply the City of New Berlin with water in exchange for assurances that the City of New Berlin would work with the City of Milwaukee on regional cooperation issues such as transportation, low-income housing, and economic development. Mr. Evenson stated that the final water supply plan could be used as a basis for such agreements between cooperating municipalities. As an example, he noted that the Commission's wastewater treatment plan for the Racine area allowed the City of Racine to pursue and implement a tax base sharing agreement with adjacent communities in exchange for wastewater treatment.
6. Mr. Flores inquired how the deep groundwater aquifer in Waukesha County is recharged. Mr. Biebel explained that a layer of impermeable shale lies above the deep aquifer between Lake Michigan and central Waukesha County. The layer of shale limits water from infiltrating from the shallow to the deep aquifer. Therefore, most of the recharge of the deep aquifer in eastern Waukesha must come from rainfall infiltration and the movement of groundwater from western Waukesha County and Jefferson County. Mr. Evenson noted that the Commission historically had objected to the development proposals at Pabst Farms in the City of Oconomowoc near IH 94, due to the need to preserve areas in open space that help recharge the deep aquifer.
7. Mr. Peters inquired about the Commission's involvement in the recent decision to amend the 2007-2010 Transportation Improvement Program for Southeastern Wisconsin (TIP) to include

funding for a full interchange at CTH P and IH 94 in the City of Oconomowoc, near the previously-discussed Pabst Farms development. Mr. Evenson responded that the CTH P interchange with IH 94 is currently a half interchange. The Commission's regional transportation plan has long recommended that the Wisconsin Department of Transportation (WisDOT) consider converting all freeway half interchanges to full interchanges. He noted that the conversion of the CTH P interchange with IH 94 from a half-interchange to a full interchange has been recommended in the regional transportation plan since 1994. He added that the engineering and right-of-way acquisition phases of the interchange project were included in the 2005-2007 TIP (completed in 2005). The request by WisDOT to amend the TIP was to amend the existing project to add the construction element for the years 2008 and 2009.

Mr. Evenson further explained with respect to the TIP that local governmental units submit public transit and arterial highway projects to the Commission for inclusion in the TIP. The Commission staff and Advisory Committees review the proposed projects to ensure consistency between the projects in the TIP and the regional transportation plan, and conformity with the State of Wisconsin's air quality implementation plan for the six-county Southeastern Wisconsin ozone non-attainment area. He noted that inclusion of a project in the TIP does not require that it be implemented, but permits the responsible governmental unit to use federal funds to implement the project. Lastly, Mr. Evenson noted that the Advisory Committees, Commission staff, and Commission have never questioned, or inserted themselves into, the scheduling of projects by an individual unit of government, that is, which of their streets should be resurfaced, reconstructed, or improved first. Those decisions, he said, are best made by the local elected officials concerned.

8. Ms. McNeely asked if the water supply study would also consider a "worst-case scenario" that assumes much more extensive future development than recommended in the Commission's land use plan. Mr. Biebel responded that the study does not propose to consider worst-case scenarios, instead basing evaluation on the regional land use plan. He noted that if development patterns differed substantially from the land use plan recommendations, the water supply forecasts may still apply, but instead of being valid to the year 2035, they would be valid to an earlier year, such as 2025 or 2030. Mr. Yunker noted that the water study could be modified to conduct a sensitivity analysis of a recommended plan, based on higher levels of future water demand.
9. Ms. McNeely asked if the infrastructure for supplying water is different for different types of land uses, questioning whether industrial purposes required a more intensive infrastructure than residential. Mr. Biebel replied that water mains are designed to serve all the properties along their length regardless of whether they are industrial or residential.
10. Mr. Peters asked how much impact water conservation measures would have on the water supply plan. Mr. Biebel stated that the study had done extensive research to determine the effects of water conservation programs, and that the forecasted water use assumed reductions in water use depending on the source of the water supply and service infrastructure needs. As an example, he stated that water conservation measures are projected to reduce water consumption by 4 to 6 percent in the Lake Michigan watershed where no major infrastructure needs exist, while they are projected to reduce consumption by 10 to 18 percent in western Waukesha County due to their infrastructure needs and source of supply. Mr. Yunker called Mr. Peters' attention to Tables 2 and 3 on pages 8 and 9 of the newsletter for the Regional Water Supply Plan for Southeastern Wisconsin (see Attachment 5 to these minutes). The tables summarize the potential for different water conservation program measures to reduce water consumption.

11. Mr. Peters drew the attention of the Task Force to Map 2 on page 4 of the water supply plan newsletter, which showed proposed urban centers and major economic activity centers in the regional land use plan. He observed that many of the economic centers were proposed to be located on the peripheries of communities, such as the economic center located in the southern portion of the City of Elkhorn. He asked if the Commission had recognized that placing economic centers on the periphery would result in new growth at the periphery of communities around the economic center. Mr. Evenson responded that major activity centers are defined as those accommodating at least 2,000 to 3,500 jobs depending upon the type of economic activity. He noted that the City of Elkhorn chose to develop a business park in that location, and the regional land use plan recognizes that the business park currently exists and has employment near that needed for designation as a major center and will reach that employment level before the year 2035.
  
12. Mr. Flores inquired about the relationship between the regional water supply plan and the Great Lakes Water Resources Compact. Mr. Biebel responded that all of the alternative plans in the water supply study would be designed to comply with existing State and Federal law, and to be consistent with the proposed Compact. He proceeded to explain that under the Compact, water from Lake Michigan could be used to supply communities in Southeastern Wisconsin under three scenarios:
  - a. Municipalities located east of the subcontinental divide would be allowed to use Lake Michigan water in all instances.
  - b. Municipalities whose boundaries “straddle” the subcontinental divide could seek approval for a diversion of Lake Michigan water from Wisconsin State government, as long as they meet certain water conservation and other standards and return all withdrawn water to the Lake Michigan basin.
  - c. Municipalities located within a county that straddles the subcontinental divide could also seek approval for a diversion of Lake Michigan water. Such a diversion, however, would require approval by all of the governors of the eight Great Lakes states, and would have to meet certain water conservation and other standards and return all withdrawn water to the Lake Michigan basin.

Mr. Flores asked what might happen if the Compact is not approved by the Wisconsin legislature. Mr. Biebel explained that current law as set forth in the Federal Water Resources Development Act requires any withdrawal of water from the Great Lakes Basin into another watershed to be returned to the Basin; however, the law lacks a legal definition of “diversion”, does not include standards for use and conservation of the water, and may not withstand legal challenges.

13. Mr. Flores asked when the analysis of the alternative regional water supply plans would be completed. Mr. Biebel stated the current schedule called for the evaluation of alternatives to be completed in late summer of 2008. Mr. Evenson noted that the Regional Water Supply Advisory Committee would consider all four plan alternatives. Mr. Biebel noted that many factors will be considered before a recommended plan is selected, and observed that Alternative 4 may be the most expensive alternative. Mr. Yunker added that each of the alternative plans will be carefully evaluated for a full range of impacts, including groundwater impacts, surface water impacts, cost effectiveness, and environmental justice considerations, among other factors. He stated that the

Task Force has been asked to help define any of the environmental justice considerations to be used in the plan evaluations.

Mr. Flores urged the Commission to allow sufficient time for public comment and public discourse after the alternatives are complete, but before a final recommended plan is selected. He stated that although one of the alternatives may be the best plan, the Commission could face political problems if the majority of the residents in the Region do not agree. Mr. Evenson agreed and stated that the Task Force will be advised of the public meetings and will have an opportunity to comment on the plan alternatives.

## **PUBLIC COMMENTS**

Ms. Greene thanked the Task Force for their active participation, and audience members for their patience. She then asked whether those in attendance wished to comment. The following comments were made:

1. Ms. Rotker stated that the Task Force should analyze the social and environmental justice impacts of the various planning efforts undertaken by the Commission. She stated that the Commission, as a recipient of federal funding, must identify and address disproportionately adverse environmental or human health effects that any of its policies and activities may have on minority and low-income populations. She concluded that the Task Force needed to do more than update the Commission's approach for future public outreach and committee appointment processes. She stated that the land use plan being used as the basis for the water supply plan was developed under the guidance of an Advisory Committee whose members did not have diverse backgrounds, and therefore the Committee may not have considered the needs of minority and low-income population.

Ms. Rotker continued by saying that the Task Force should consider the impacts of the water supply study on disadvantaged populations. She said she had a copy of a memo written by an attorney in 2004 that evaluates the arguments for and against the City of Waukesha purchasing City of Milwaukee water. The memo states that in the 1970's, 42 industries in the New Berlin Industrial Park moved from the City of Milwaukee. She questioned if supplying water to communities in Waukesha County would result in more industries leaving Milwaukee County for suburban communities.

Ms. Rotker stated she hoped the Task Force would seek to hear presentations from agencies other than the Commission about the planning efforts being conducted and the potential impacts of the plans. Finally, she stated that if the Commission pursues a policy of making advisory committees "population proportional", some areas of the Region might still appoint advisory committees with little or no minority representation.

2. Ms. Schneider asked how the water supply study would take environmental justice considerations into account in evaluating the plan alternatives. Mr. Evenson responded that the Commission staff hoped the Task Force would assist in defining the environmental justice considerations to be used in the evaluation.
3. Mr. McAvoy observed that Commission staff are in a difficult position because they must base their current planning efforts on earlier plans. He noted that the water supply plan is based on the land use plan. He stated that the assumptions and recommendations in the land use plan should



be reviewed at this time rather than potentially after completion of the water supply plan. He stated that the Task Force should consider whether there was a “water supply budget” which could affect the assumptions of the land use plan.

### **CONSIDERATION OF ADDITIONAL TOPICS AT FORTHCOMING MEETINGS**

Ms. Greene indicated that the Task Force had identified two items that would remain on the agenda: advisory committee selection process, and environmental justice considerations to be used in the analysis of the water supply plan alternatives.

Mr. Peters stated that Mr. Evenson had announced he would be retiring from the position of Executive Director of the Commission at the end of the year. He asked if the Task Force would have any input in the selection process to determine the next Executive Director. Ms. Greene asked if Mr. Peters had a particular candidate in mind for the position. Mr. Peters stated that he did not, but that he thought the Task Force could provide feedback on the potential candidates for the position. Ms. McNeely agreed with Mr. Peters, and suggested that the Commission establish a hiring process that allows anyone to apply, to open up the process to a more diverse pool of candidates. Mr. Evenson stated that the Commission’s nine-member Executive Committee would meet in the coming week, and they will develop the process for selecting the Executive Director at that meeting. Ms. Greene stated that, as a member of the Executive Committee, she would relay Mr. Peters’ suggestion at the upcoming meeting. She stated that she would bring the results of the Executive Committee decision to the next meeting of the Environmental Justice Task Force.

### **NEXT MEETING**

There being no further comments, Ms. Greene indicated that the next meeting of the Task Force would be on Tuesday, May 27, at the Kenosha County Job Center.

### **ADJOURNMENT**

Ms. Greene again thanked the Task Force and guests for their time and participation. With several Task Force members departing, Ms. Greene declared the meeting adjourned at 6:15 p.m.

Respectfully submitted,

Kenneth R. Yunker  
Recording Secretary

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**SEWRPC Environmental Justice Task Force**

**PUBLIC INVOLVEMENT AND OUTREACH**

Activities Routinely Conducted by the Commission and Reported to Task Force  
On November 27, 2007

- Public meetings and associated activities at multiple junctures, which in recent studies have included: study inception, completion of inventory findings, review of plan alternatives, and preliminary recommended plan stage.
- Open house meeting formats allowing flexibility for attendees, and holding at least one meeting per county at each juncture, all in accessible locations; central city locations for Kenosha, Milwaukee, Racine, and Waukesha County meetings; minority neighborhood centers used for two of three meetings held each time in Milwaukee; and public transit availability where possible for meeting sites.
- Limited English proficiency steps, including arrangements for requested translators, and typically providing one in Hispanic/Latino neighborhood locations.
- Paid meeting ads in minority newspapers, as well as larger media outlets, and published in Spanish as appropriate.
- Newsletters prepared and sent at each study juncture, typically providing study updates, announcing public meetings, and describing planning content.
- Summary brochures shortening newsletter content to four pages, which have been translated into Spanish, used as public meeting handouts, and provided to groups as appropriate.
- Maintaining a list of minority and low-income groups and organizations.
- Personal letters sent to lead contacts of minority and low-income organizations, at each major juncture corresponding to study newsletters and public meetings, requesting meetings with Commission staff at the organizations' convenience, whether one-on-one, with committees/boards, stakeholders, or full memberships (four times during recent long-range land use/transportation planning).
- Telephone calls over the course of studies to arrange meetings, encourage participation, answer any questions, and possibly take comments, for each of the minority and low-income group contacts.
- Website containing all study materials, including committee meeting materials, plan materials, and public meeting handouts, with an open opportunity for comment.
- The establishment of the Environmental Justice Task Force to generate additional ideas and further broaden input, to the benefit of minority and low-income populations.

Additional Suggested Activities by Task Force Members on November 27, 2007

- Seek appearances on radio stations serving large minority and/or low income population audiences.
- Consider Latino/Hispanic media beyond El Conquistador.
- Prepare and provide a short summary of the issues, and opportunities to comment, for possible use in minority and low income group newsletters or websites.
- Use of focus groups, other small group techniques, visioning, brainstorming, and non-traditional meeting places and events, such as fairs and festivals.
- Expansion of list of minority and low-income organizations to be more inclusive.
- Work with job centers in the Region to inform members of minority and low-income population groups about regional planning activities.
- Be sure to treat all comments received with respect.

GKK/lgh/lw  
01/17/08  
#133996 v1 - Public Involvement

Attachment 2

**SEWRPC Environmental Justice Task Force**

**ADVISORY COMMITTEE APPOINTMENTS**

Activities Routinely Conducted by the Commission and Reported to Task Force  
On November 27, 2007

- Contacts (telephone or meetings) with elected officials from communities with substantial minority populations suggesting that their appointments include individuals from minority groups.
- Suggesting to elected officials in letters requesting committee appointments specific individuals from minority groups for such appointments.

Additional Suggested Actions by Task Force Members on November 27, 2007

- Bring proposed new SEWRPC advisory committees to EJTF for their suggestions prior to action by the Commission.
- Maintain a list of minority professional organizations to be consulted as to potential minority candidates for appointment to advisory committees.
- Specifically request elected officials, in the letters which ask them to make multiple committee appointments, to strive to achieve the racial proportionality of their communities in making such appointments. Note in the letters the percentage of minorities in their communities. Also, suggest in these letters potential minority representatives for their consideration.
- When community officials are asked to make multiple appointments, consider dividing the requested appointments between the County Executive and County Board Chair or between the Mayor and Common Council President.

KRY/GKK/mlh/lw/lgh

01/17/08

#133947 v1 - advisory committee appointments

**MEMORANDUM**

TO: All Members of the Environmental Justice Task Force

FROM: SEWRPC Staff

DATE: March 17, 2008

**SUBJECT: STATUS REPORT ON REGIONAL WATER SUPPLY ALTERNATIVE PLANS**

**INTRODUCTION**

At the November 27, 2007, meeting of the Task Force, a briefing was given and Task Force and audience comments were received on the regional water supply plan background and alternative plans. There was an interest expressed in further information being provided and the Task Force was asked to consider if there were any environmental justice-related issues to be addressed as part of the water supply alternative plan evaluation. This memorandum presents additional background on the demographic and land use forecasts used as the basis of the alternative water supply plans and the currently available information on those plans.

More information is available in the *Regional Water Supply Plan for Southeastern Wisconsin Newsletter 2*.

**2035 DEMOGRAPHIC AND LAND USE FRAMEWORK FOR THE DEVELOPMENT OF ALTERNATIVE WATER SUPPLY PLANS**

The regional water supply planning program is intended to consider probable future water supply demands in southeastern Wisconsin to the year 2035 based upon Commission forecasts of population, households, employment, and land use demand. This forecast growth and change has been allocated within the Region based upon the Commission's adopted year 2035 regional land use plan (see Map 1). Regional water supply planning may identify a need to consider revision to the land use plan due to water supply considerations. Should that prove to be the case, the regional water supply plan will include recommendations for land use plan amendment consideration.

The Commission population, household, and employment forecasts for the year 2035 are based upon consideration of three levels of future projections: high, intermediate, and low. This approach recognizes the uncertainty that surrounds any effort to forecast future socioeconomic conditions. The intermediate projections are considered the most likely to be achieved within the Region, and constitute the basis for the Commission's plan preparation efforts. Based upon the intermediate growth projection, the following regional forecasts are used as the forecast for the regional water supply plan for the period from 2000 to 2035:

- The number of jobs in the Region is forecast to increase by about 12 percent from 2000 to 2035.
- The population is forecast to increase by about 18 percent from 2000 to 2035.
- The number of households is forecast to increase by about 24 percent from 2000 to 2035.
- The average household size is expected to continue to decrease, but more moderately than in the past—from 2.52 persons per household in the year 2000 to 2.39 persons per household in the year 2035.

The regional land use plan is intended to provide a guide for land use development within the Region to the year 2035. Implementation of the plan will depend upon the voluntary actions of municipal, county, State, and Federal agencies and units of government acting in cooperation with the private sector.

The year 2035 regional land use plan, as shown on Map 1, contains the following salient recommendations:

- The primary environmental corridors, secondary environmental corridors, and isolated natural resource areas of the Region should be preserved in essentially natural, open uses, continuing to account for about 23 percent of the area of the Region.
- The prime, or most productive, farmland in the Region should be preserved in agricultural use.
- New urban development should be accommodated within and around existing urban centers through infill development, redevelopment, and the orderly expansion of planned urban service areas on lands proximate to these centers that can be readily and economically provided with centralized sanitary sewerage, water supply and public transit services. Particular emphasis is placed on stabilizing and revitalizing the central cities of Milwaukee, Racine, and Kenosha. The regional land use plan envisions that the historic trend in land use decentralization will be moderated, with historic population decreases in Milwaukee County being replaced by population growth, and with growth in outlying counties being moderated.
- The regional plan envisions a range of commercial and industrial areas, including the continued development and redevelopment of the existing major centers, and those now under development.
- The regional land use plan envisions an increase in urban land uses of about 13 percent between 2000 and 2035.

## **MUNICIPAL WATER SUPPLY SERVICE AREAS AND WATER DEMAND FORECASTS**

Under the regional water supply planning program, those areas which may be expected to be served by municipal water supply facilities by the year 2035 were identified. This effort considered existing and planned land use development type and density, relationship to existing water supply service areas, shallow groundwater aquifer characteristics, areas of known groundwater contamination, historical community positions toward water supply service, and local plans. The potential municipal water service areas in the year 2035 are shown on Map 2. In 2007 major portions of these areas were served by 76

water utilities. These existing 76 utilities are expected to continue and be supplemented by new municipal utilities, with the planned service area characteristics as follows:

- The population served by municipal water supply systems is forecast to increase from 1.56 million persons to as much as 2.1 million persons from 2000 to 2035. Of this increase of about 500,000 persons, nearly 200,000 persons are located in existing urban areas served by private wells.
- The amount of new urban land envisioned to be developed and served by municipal water supply systems is expected to increase by 11 percent from 2000 to 2035.
- The total water use demand on an average daily basis for the municipal utilities in the Region is forecast to increase from about 200 million gallons per day (mgd) in 2000 to about 260 mgd in 2035. Of the increase in forecast water use, about 60 percent is due to connection of existing urban areas now served by private systems and 40 percent, or about 23 mgd, is due to demand resulting from new development. This represents a new demand of about 12 percent.

## **ALTERNATIVE WATER SUPPLY PLANS**

As discussed at the November 27, 2007, Task Force meeting, four alternative plans, plus an initially preferred plan, are proposed to be considered, evaluated, and put forward for public review. This would be followed by the development of a recommended plan.

### **Alternative Plan 1—Continuation of Existing Sources of Water Supply**

This alternative plan, as shown on Map 3, would maintain the existing sources of water supply for the Region's water utilities: groundwater for those now using groundwater and Lake Michigan water for those reliant on Lake Michigan water. For those groundwater-based water utilities with water quality or quantity problems, treatment of groundwater and/or alternative groundwater sources (shallow replacing deep groundwater) will be considered.

- Municipal utilities currently served by Lake Michigan water supply—total water use demand is estimated to increase from about 162 mgd in 2000 to about 184 mgd in 2035.
- Municipal utilities currently served by groundwater supplies—total water use demand is estimated to increase from about 38 mgd in 2000 to about 67 mgd in 2035.
- Newly planned municipal utilities—an estimated 24 new utilities would to have a year 2035 water use demand of about 8 mgd. All of these systems are envisioned to use groundwater as the source of supply.
- Development of 99 new shallow aquifer wells and eight new deep aquifer wells.
- Construction of 104 new storage facilities.
- Expansion or modification of three surface water treatment plants.
- An initial capital cost of \$146 million.

An analysis of the impacts of Alternative Plan 1 indicates the following:

- Relatively modest drawdown of the shallow aquifer expected to average less than 1.5 feet by the year 2035. This modest impact is due, in large part, to the buffering effects of surface water base flow interactions by which the groundwater removed by pumping is largely being made up of groundwater which would discharge underground to surface waters.
- A continued (but at a much smaller than the historic average rate) drawdown of the deep aquifer, with countywide averages of between one and 27 feet between 2000 and 2035, with a maximum of drawdown of about 63 feet. However, there are many areas of the Region where little or no change in the deep aquifer is expected and some areas where limited drawups may be expected.
- Of the increase of about 30 mgd in groundwater pumping from all sources between 2000 and 2035, about 60 percent will be derived from groundwater which, in the absence of pumping, would have discharged to surface water. About 27 percent of the pumping will be derived directly from surface water features due to a reversed flow pattern at the surface water-groundwater interface.
- Groundwater-derived baseflow in the surface water system is expected to be reduced due to pumping by about 5 percent on a regional average. Because groundwater-derived baseflow is estimated to represent from 10 to 50 percent of stream flow, the impact of pumping on stream flow is estimated to be 0.5 to 2.5 percent on a regional average.
- The reduction on groundwater-derived baseflow would be greater than 10 percent at 21 of 100 evaluation sites representing groundwater-dependent surface waters.

Three other alternative plans are being considered. These plans are shown conceptually on Maps 4, 5, and 6. Following development and evaluation of the alternative plans, a comparative evaluation of the plans will be made considering the following factors:

- Cost Effectiveness
- Impacts on groundwater system
- Impacts on surface water system
- Environmental justice considerations
- Implementability
- Consistency with State and Federal regulations and policies
- Flexibility and adaptability
- Plan will be advisory to all













Following that comparative evaluation, an initially preferred set of water supply measures will be selected. Those measures, along with the alternatives will be presented for public comment and input.

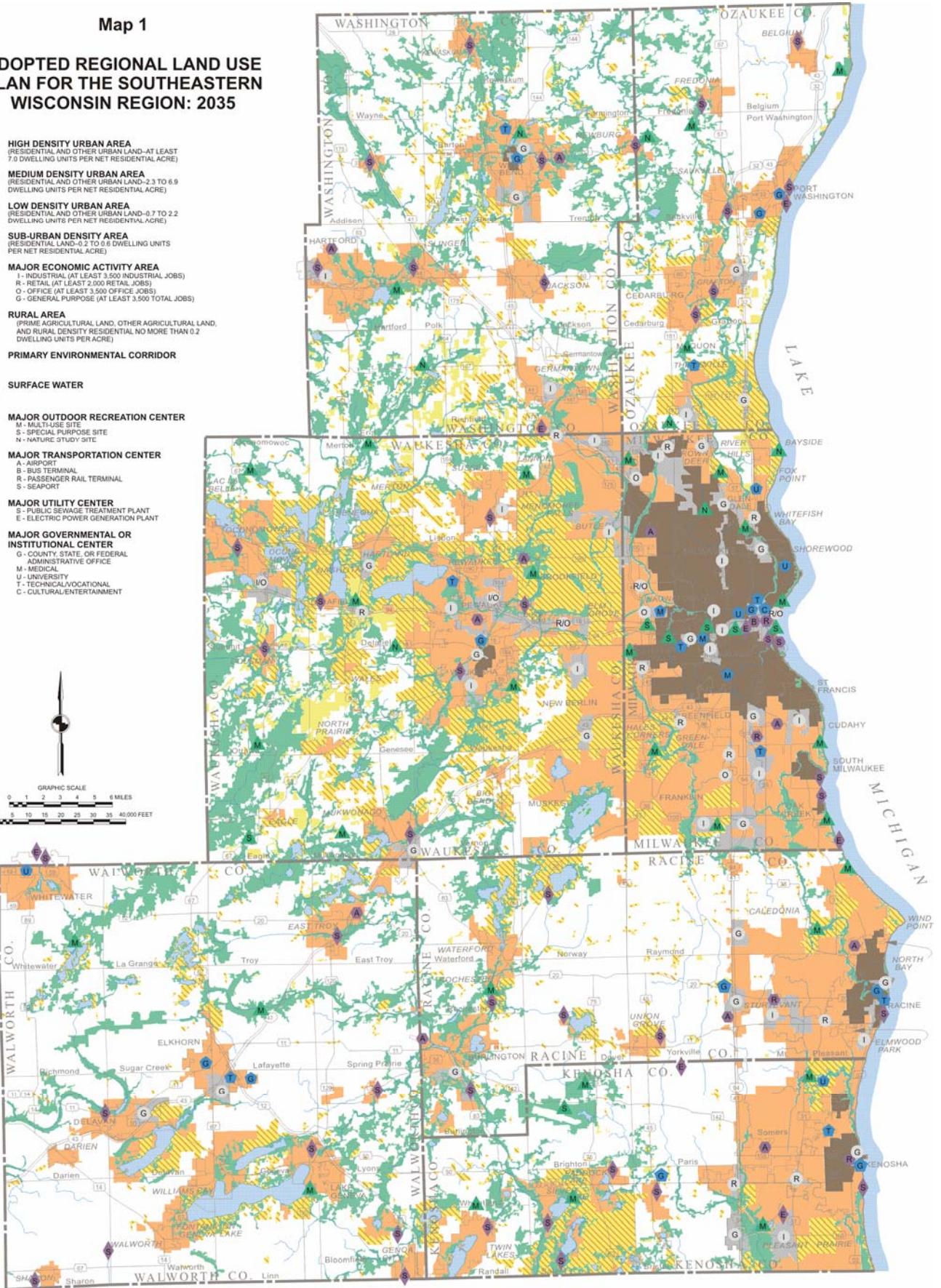
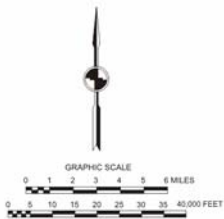
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Map 1

**ADOPTED REGIONAL LAND USE PLAN FOR THE SOUTHEASTERN WISCONSIN REGION: 2035**

-  **HIGH DENSITY URBAN AREA**  
(RESIDENTIAL AND OTHER URBAN LAND—AT LEAST 7.0 DWELLING UNITS PER NET RESIDENTIAL ACRE)
-  **MEDIUM DENSITY URBAN AREA**  
(RESIDENTIAL AND OTHER URBAN LAND—2.3 TO 6.9 DWELLING UNITS PER NET RESIDENTIAL ACRE)
-  **LOW DENSITY URBAN AREA**  
(RESIDENTIAL AND OTHER URBAN LAND—0.7 TO 2.2 DWELLING UNITS PER NET RESIDENTIAL ACRE)
-  **SUB-URBAN DENSITY AREA**  
(RESIDENTIAL LAND—0.2 TO 0.6 DWELLING UNITS PER NET RESIDENTIAL ACRE)
-  **MAJOR ECONOMIC ACTIVITY AREA**  
I - INDUSTRIAL (AT LEAST 3,500 INDUSTRIAL JOBS)  
R - RETAIL (AT LEAST 2,000 RETAIL JOBS)  
O - OFFICE (AT LEAST 3,500 OFFICE JOBS)  
G - GENERAL PURPOSE (AT LEAST 3,500 TOTAL JOBS)
-  **RURAL AREA**  
(PRIME AGRICULTURAL LAND, OTHER AGRICULTURAL LAND, AND RURAL DENSITY RESIDENTIAL NO MORE THAN 0.2 DWELLING UNITS PER ACRE)
-  **PRIMARY ENVIRONMENTAL CORRIDOR**
-  **SURFACE WATER**
-  **MAJOR OUTDOOR RECREATION CENTER**  
M - MULTI-USE SITE  
S - SPECIAL PURPOSE SITE  
N - NATURE STUDY SITE
-  **MAJOR TRANSPORTATION CENTER**  
A - AIRPORT  
B - BUS TERMINAL  
R - PASSENGER RAIL TERMINAL  
S - SEAPORT
-  **MAJOR UTILITY CENTER**  
S - PUBLIC SEWAGE TREATMENT PLANT  
E - ELECTRIC POWER GENERATION PLANT
-  **MAJOR GOVERNMENTAL OR INSTITUTIONAL CENTER**  
G - COUNTY, STATE, OR FEDERAL ADMINISTRATIVE OFFICE  
M - MEDICAL  
U - UNIVERSITY  
T - TECHNICAL/VOCATIONAL  
C - CULTURAL/ENTERTAINMENT

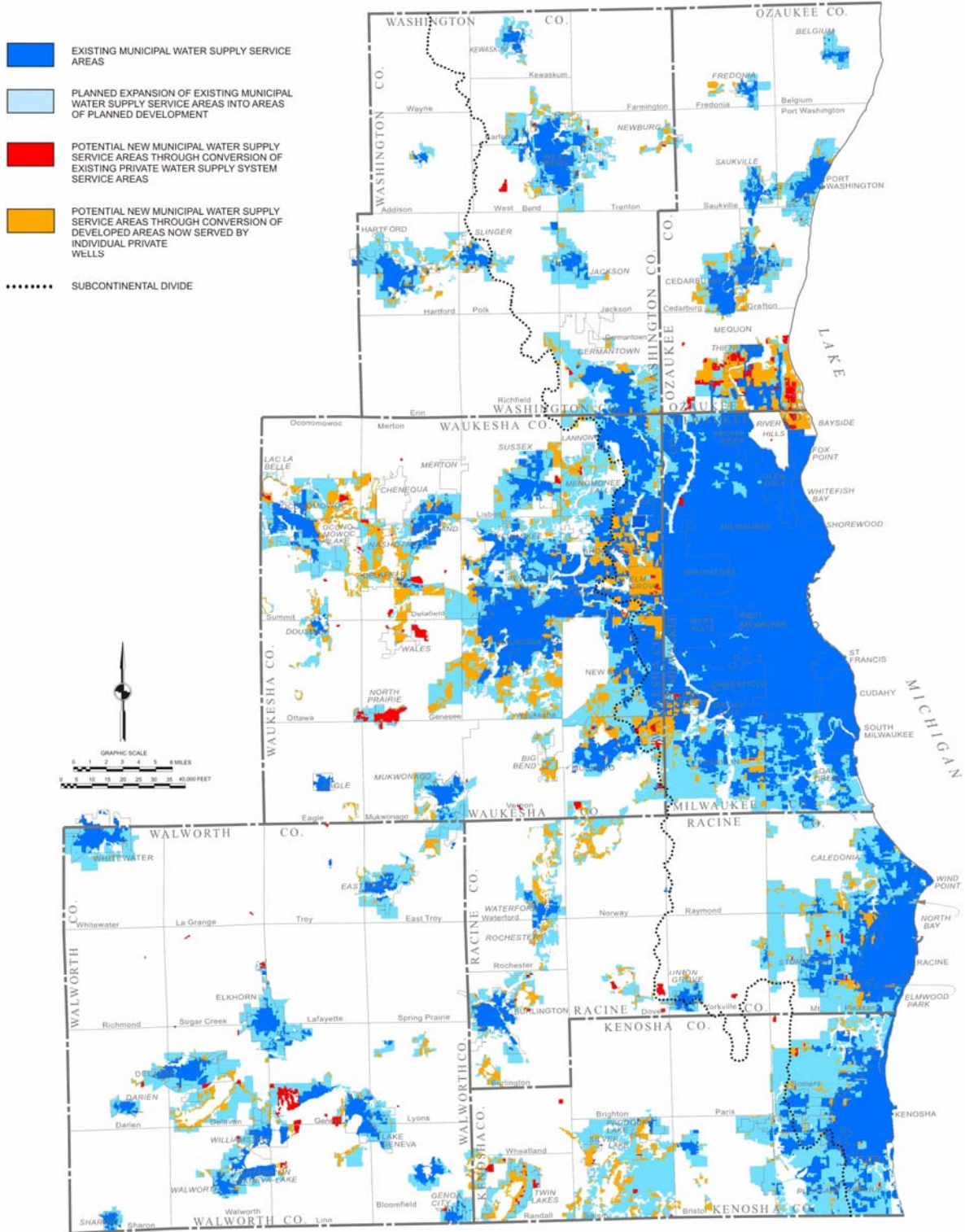


Source: SEWRPC.



Map 2

MUNICIPAL WATER SUPPLY SERVICE AREAS: 2035

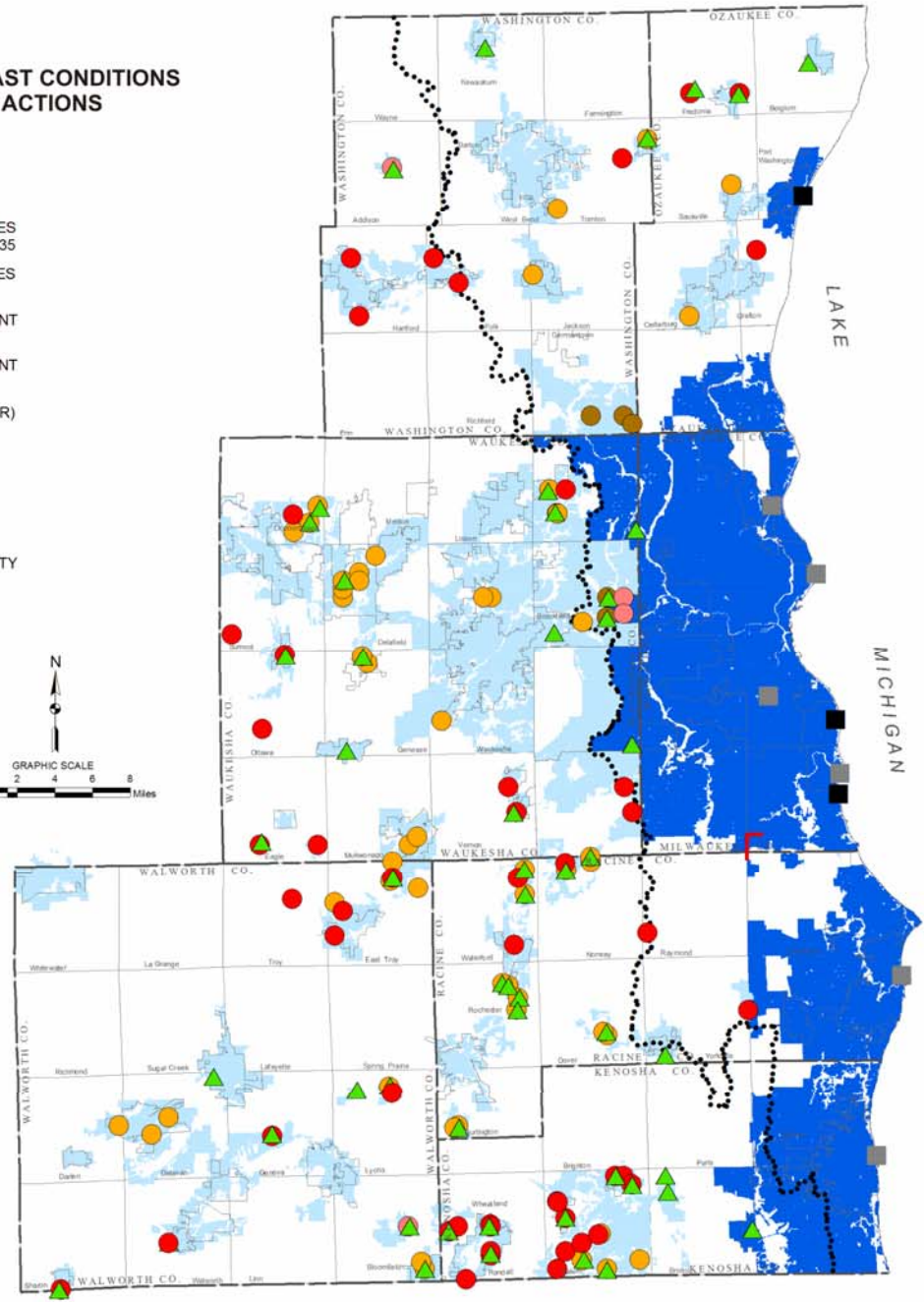
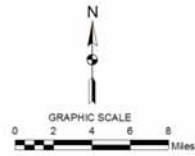


Source: SEWRPC.

Map 3

ALTERNATIVE PLAN 1 - DESIGN YEAR 2035 FORECAST CONDITIONS  
UNDER EXISTING TRENDS AND COMMITTED ACTIONS

- AREAS SERVED BY MUNICIPAL WATER UTILITIES PROVIDING WATER FROM LAKE MICHIGAN: 2035
- AREAS SERVED BY MUNICIPAL WATER UTILITIES PROVIDING GROUND WATER: 2035
- EXISTING MUNICIPAL WATER TREATMENT PLANT NEEDING NO EXPANSION
- EXISTING MUNICIPAL WATER TREATMENT PLANT TO BE EXPANDED
- PLANNED MUNICIPAL WELL (SHALLOW AQUIFER)
- PLANNED MUNICIPAL WELL (DEEP AQUIFER)
- PLANNED MUNICIPAL WELL AND RESERVOIR STORAGE FACILITY (SHALLOW AQUIFER)
- PLANNED MUNICIPAL WELL AND RESERVOIR STORAGE FACILITY (DEEP AQUIFER)
- PLANNED MUNICIPAL WATER STORAGE FACILITY
- PLANNED WATER TRANSMISSION MAIN
- SUBCONTINENTAL DIVIDE






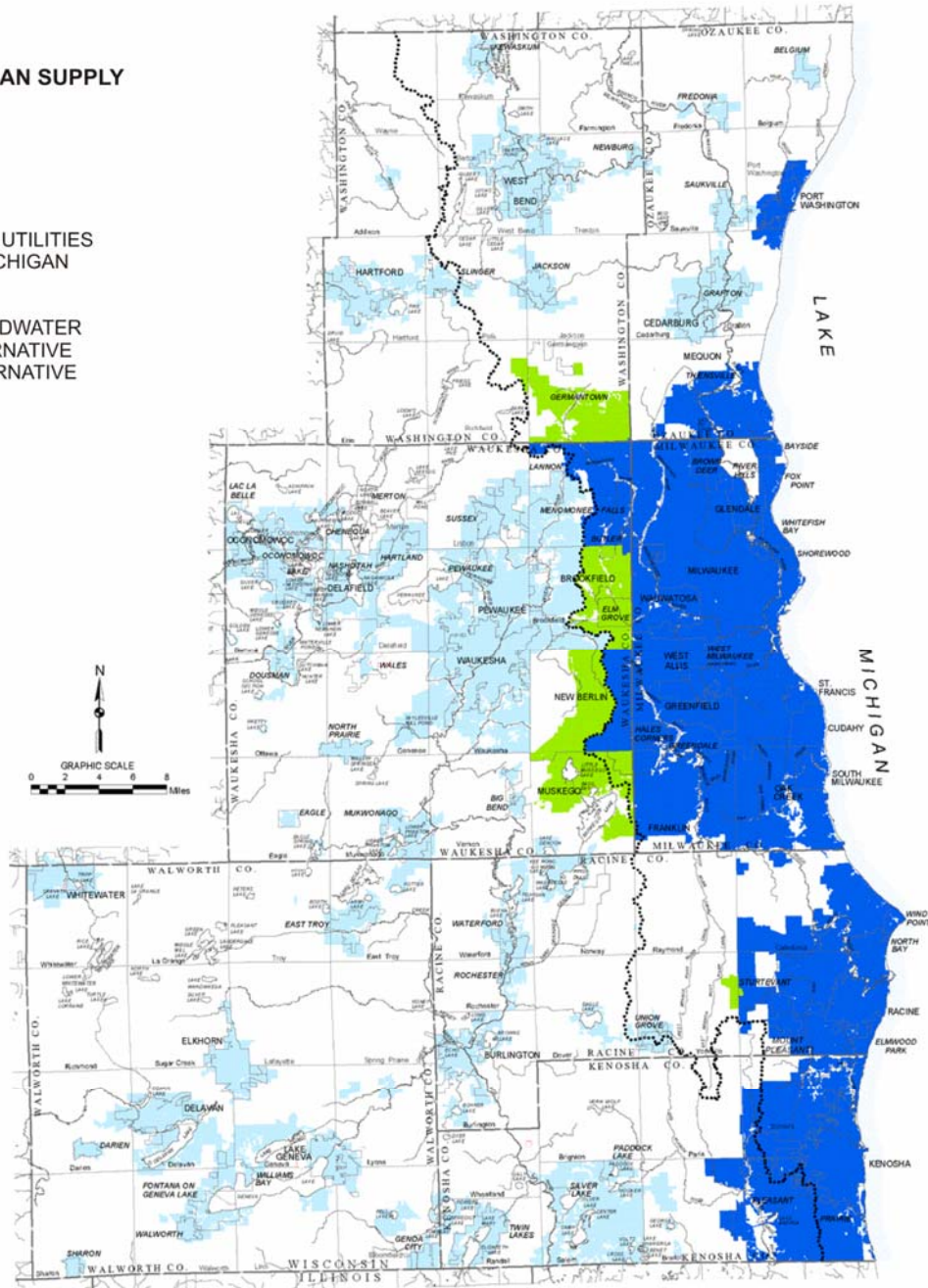
- Existing 2007 water supply facilities
- Enhanced local water conservation programs
- Continued reliance on groundwater sources to meet 2035 demand (light blue)
- Continued reliance on Lake Michigan water sources for all areas now served, meeting 2035 demand (dark blue)
- Recharge of groundwater at new construction sites to the extent required by state law
- Continued reliance on private wells for residential areas (about 180,000 people) plus selected agricultural, irrigation, and industrial uses



Map 4

ALTERNATIVE PLAN 2 - LIMITED EXPANSION OF LAKE MICHIGAN SUPPLY





-  AREAS SERVED BY PUBLIC WATER UTILITIES PROVIDING WATER FROM LAKE MICHIGAN UNDER ALTERNATIVE PLAN 1: 2035
-  AREAS CONVERTED FROM GROUNDWATER TO SURFACE WATER UNDER ALTERNATIVE PLAN 2 AND 3 COMPARED TO ALTERNATIVE PLAN 1: 2035
-  SUBCONTINENTAL DIVIDE

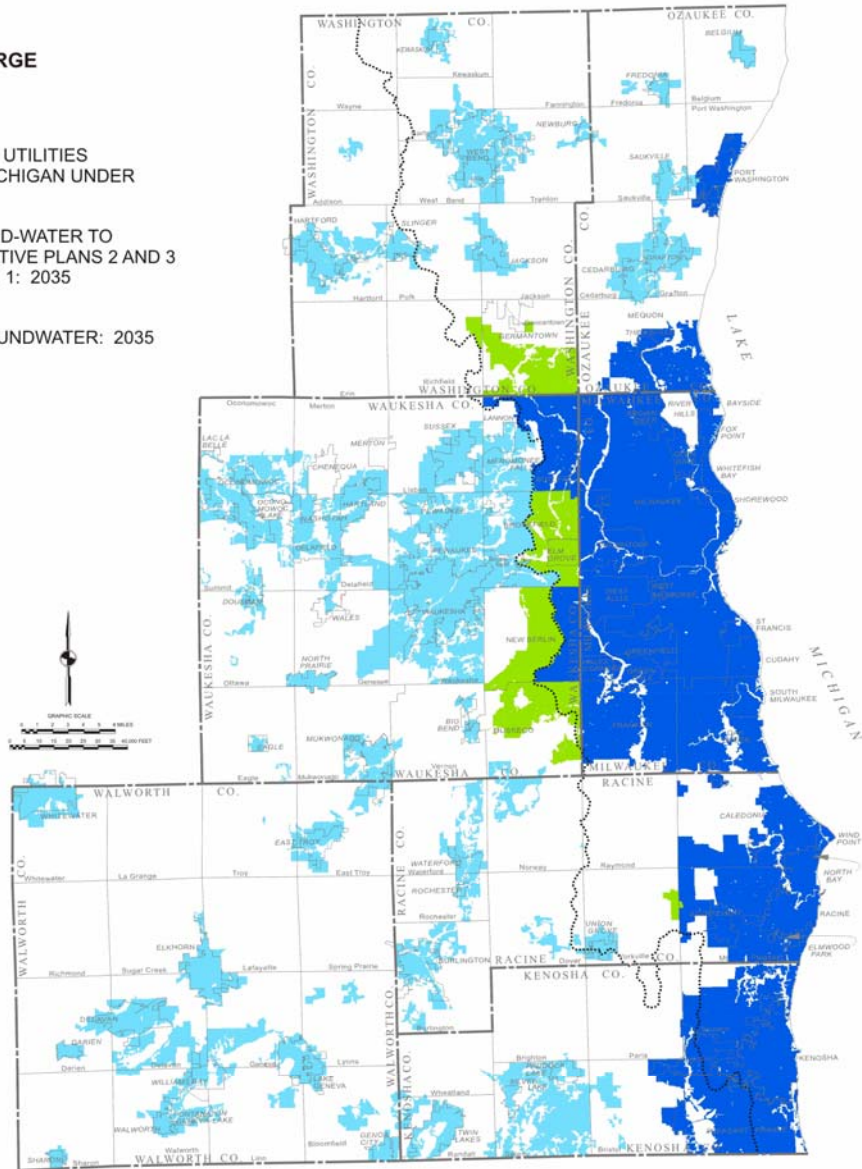


- Includes most aspects of Alternative Plan 1, but converts certain areas to Lake Michigan supply
  - 4 areas east of the subcontinental divide (Germantown, Elm Grove, Brookfield-east and Yorkville) all with existing return flow (green)
  - 2 areas west of the divide (New Berlin-central, Muskego) both with existing return flow (green)
  - Includes conversion of selected treated deep aquifer sources to shallow aquifer sources

Map 5

ALTERNATIVE PLAN 3 - GROUNDWATER RECHARGE

-  AREAS SERVED BY PUBLIC WATER UTILITIES PROVIDING WATER FROM LAKE MICHIGAN UNDER ALTERNATIVE PLAN 1: 2035
-  AREAS CONVERTED FROM GROUND-WATER TO SURFACE WATER UNDER ALTERNATIVE PLANS 2 AND 3 COMPARED TO ALTERNATIVE PLAN 1: 2035
-  AREAS SERVED BY PUBLIC WATER UTILITIES PROVIDING GROUNDWATER: 2035
-  SUBCONTINENTAL DIVIDE



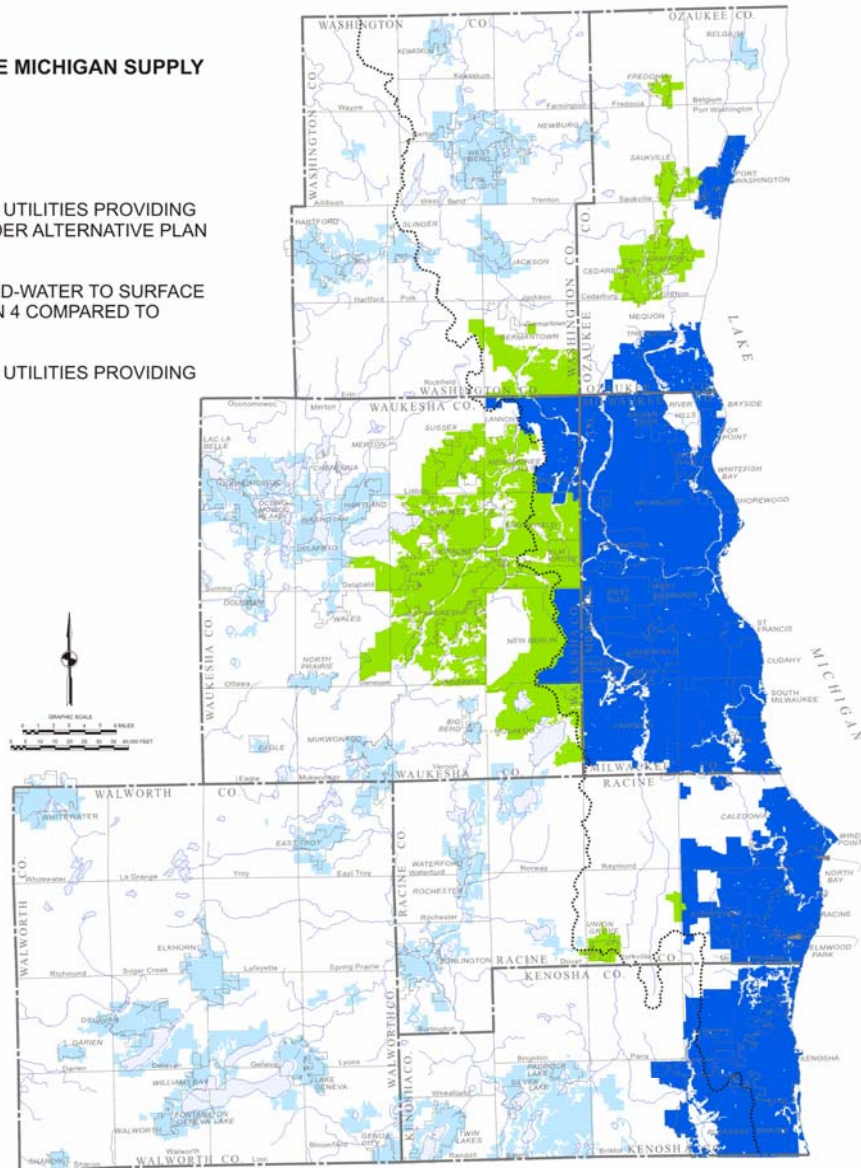
- Includes all aspects of Alternative Plan 2
- Enhancement of rainfall infiltration over 4.0 square miles of open space through bioengineering; sites to be selected
- Protection of most significant groundwater recharge areas through public purchase if necessary
- Recharge of groundwater at new construction sites beyond the extent required in State law
- Redirection of wastewater treatment plant effluent to shallow aquifer after enhanced treatment at 3-4 demonstration locations
- Recharge deep aquifer with treated Lake Michigan water



Map 6

ALTERNATIVE PLAN 4 - FURTHER EXPANSION OF LAKE MICHIGAN SUPPLY

- AREAS SERVED BY PUBLIC WATER UTILITIES PROVIDING WATER FROM LAKE MICHIGAN UNDER ALTERNATIVE PLAN 1: 2035
- AREAS CONVERTED FROM GROUND-WATER TO SURFACE WATER UNDER ALTERNATIVE PLAN 4 COMPARED TO ALTERNATIVE PLAN 1: 2035
- AREAS SERVED BY PUBLIC WATER UTILITIES PROVIDING GROUNDWATER; 2035
- ..... SUBCONTINENTAL DIVIDE



- Includes all aspects of Alternative Plan 2 but with conversion of selected additional areas to lake Michigan supply all with return flow components
  - 4 areas east of the subcontinental divide (Cedarburg, Grafton, Fredonia, Saukville) (green)
  - 4 areas in communities which straddle the divide (Brookfield-west, Menomonee Falls-west, Brookfield-Town, Union Grove) (green)
  - 9 areas which are in communities west of the divide within a straddling county (Pewaukee-City, Pewaukee-Village, Sussex, portion of the Town of Lisbon, Lannon, Waukesha-City, portions of the Towns of Waukesha, Genesee, and Delafield) (green)

**SEWRPC Environmental Justice Task Force**

**REGIONAL WATER SUPPLY PLANNING**

Summary of Report Provided to the Task Force on November 27, 2007

- The forthcoming regional water supply plan is to identify the “best” way in which to meet water use demands in 2035 as those demands are derived from the scale and location of urban development identified in the previously adopted year 2035 regional land use plan.
- The regional water supply plan will promote appropriate water conservation activities to help reduce future demand. In so doing, care must be taken to ensure that ratepayers -- particularly in Milwaukee, Racine, and Kenosha -- who are served by Lake Michigan plants with significant underutilized capacities are not hurt by imposing water conservation efforts that are accompanied by higher water rates.
- The regional water supply plan will identify groundwater recharge areas that need to be protected from inappropriate development.
- The regional water supply plan will address the potential to enhance the recharge of the shallow groundwater aquifer west of the subcontinental divide by promoting the infiltration of rainwater, stormwater runoff, and sewage treatment plant effluent.
- Four basic alternative regional water supply plans have been identified for full evaluation:
  - A plan that would rely upon greater use of the shallow groundwater to meet growing water demands west of the subcontinental divide
  - A plan that would extend Lake Michigan water supply to selected areas east of the subcontinental divide and to two additional areas west of the subcontinental divide, all of which already have existing return flow through the MMSD sewerage system
  - A plan that would enhance groundwater recharge of rainfall and runoff infiltration, combined with selected infiltration of wastewater treatment effluent at strategic locations
  - A plan that would extend Lake Michigan water supply to additional areas west of the subcontinental divide in Waukesha, and Racine Counties, in all cases combined with an environmentally sound return of flow to Lake Michigan
- Neither existing Federal and State law nor the pending Great Lakes Compact would rule out any of the alternatives being considered in the water supply study. The study is being carried-out with all of the ramifications of the existing law and pending Compact in mind.
- As may be found necessary and desirable at the conclusion of the study, the regional water supply plan could propose modifications to the previously adopted regional land use plan.

### **Next Steps Concerning the Water Supply Study**

- As the SEWRPC Technical Advisory Committee completes its work over the next several months, SEWRPC staff will prepare focused materials and brief the Environmental Justice Task Force on the findings of the evaluations of the four alternative plans. This will begin at the Task Force meeting scheduled for March 18, 2008. It is SEWRPC's hope that the Task Force members will carefully consider these findings in the context of the concept of environmental justice. Should the Task Force agree that there are one or more concerns relative to any of the plans with respect to environmental justice, it is intended that these concerns be articulated and appropriately addressed in follow up evaluation work.
- As this process moves along, the Task Force needs to communicate to the SEWRPC staff any concerns that it may have relative to the water supply study procedures being followed and to the substance of the unfolding planning work.

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# REGIONAL WATER SUPPLY PLAN FOR SOUTHEASTERN WISCONSIN

NEWSLETTER 2

DECEMBER 2007

This newsletter is the second in a series of newsletters reporting progress in the regional water supply planning program. The first newsletter provided an overview of the scope and content of the planning program, the planning area, the water supply planning objectives formulated to guide the design and evaluation of alternative and recommended water supply plans, trends in regional water use, and existing sources of water supply.

This newsletter presents:

- regional economic and demographic forecasts and planned land use development to the year 2035. These forecasts and the planned land use development as envisioned in the adopted regional land use plan provide a basis for the preparation of water use forecasts;
- findings and conclusions of an evaluation of the potential effectiveness of water conservation measures;
- forecasts of future year 2035 water use, incorporating forecasts of potential water conservation;
- findings and conclusions of a study of water supply law; and
- conceptual initial water supply plan alternatives proposed for consideration and evaluation.

## BACKGROUND

The regional water supply planning program is to consider probable future water supply demands in southeastern Wisconsin to the year 2035 based upon Commission forecasts of population, households, employment, and land use demand. This forecast growth and change has been allocated within the Region based upon the Commission's adopted year 2035 regional land use plan. Regional water supply planning may identify a need to revise the land use plan due to water supply considerations. Should that prove to be the case, the regional water supply plan will include recommendations for land use plan amendment.

### 2035 Population, Household, and Employment Forecasts

The Commission population, household, and employment forecasts for the year 2035 are based upon consideration of three levels of future projections: high, intermediate, and low. This approach recognizes the uncertainty that surrounds any effort to forecast future socioeconomic conditions. The intermediate projections are considered the most likely to be achieved within the Region, and constitute the basis for the Commission's plan preparation efforts.

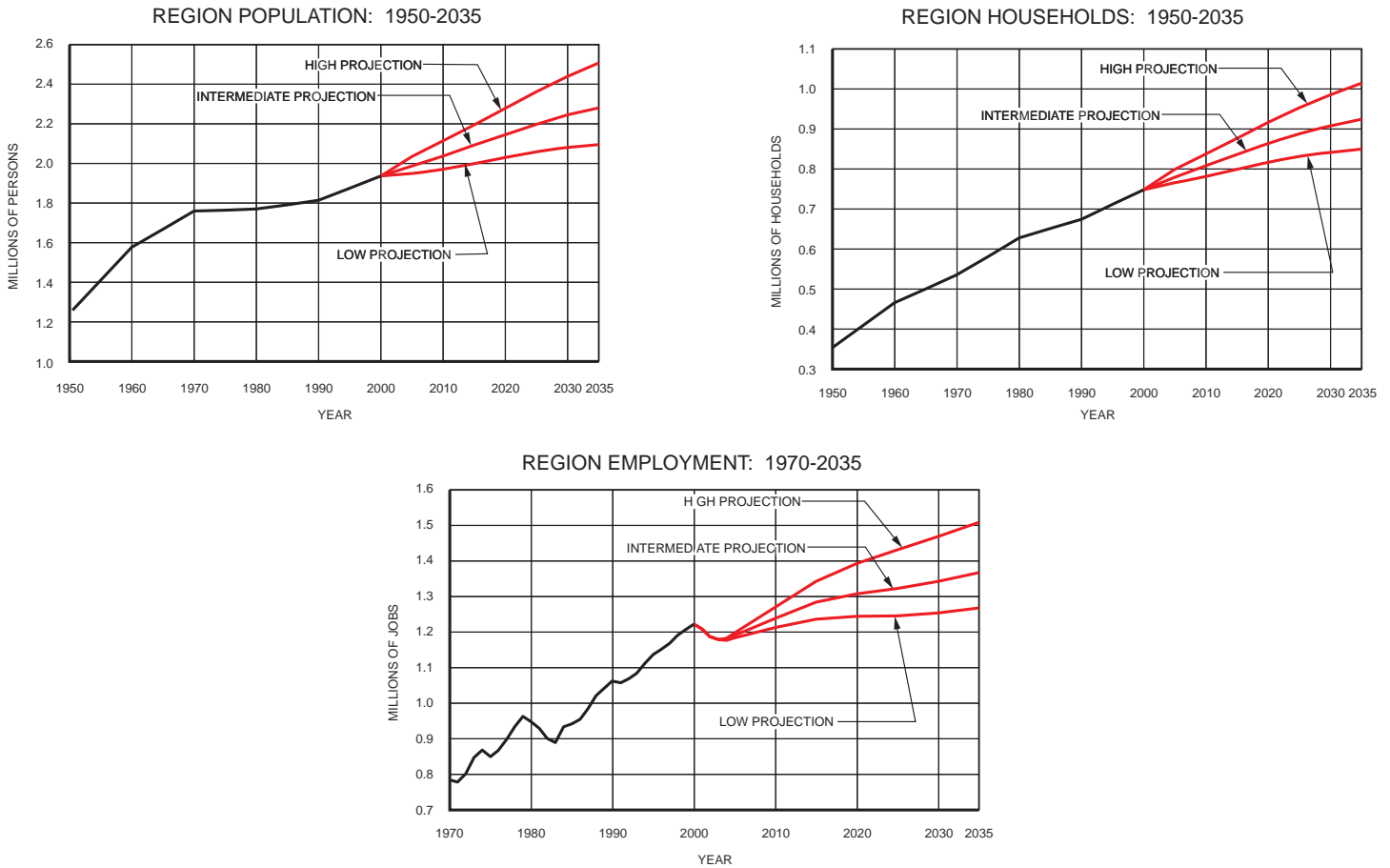
Figure 1 shows actual and projected population, households, and employment in the Southeastern Wisconsin Region through the year 2035. The number of jobs in the Region is forecast to increase by about 12 percent from 2000 to 2035. The strength of

### REGIONAL WATER SUPPLY PLANNING PROGRAM – AT A GLANCE

- Geography:** Seven-county Southeastern Wisconsin Region, including a total of 147 cities, villages and towns.
- Outcome:** An advisory plan providing recommendations necessary to attaining an adequate, sustainable water supply for the Region.
- Application:** Constitutes a major element of the comprehensive plan for the Region for the design year 2035.
- Guidance:** Planning effort is being directed by a technical Advisory Committee with representatives of local, State, and Federal governments, water utilities, private sector business, and environmental and academic interests.
- Context:** Final element of a regional water supply planning program which also included basic groundwater resources inventories completed in 2002, development of a groundwater simulation model for the Region completed in 2005, and technical reports on water supply law and state-of-the-art practices completed in 2007.
- Timeline:** A multi-year planning study, concluding in 2008.

Figure 1

**ACTUAL AND PROJECTED POPULATION, HOUSEHOLDS,  
AND EMPLOYMENT IN THE SOUTHEASTERN WISCONSIN REGION: 1950-2035**



Source: Wisconsin Department of Administration, U.S. Bureau of the Census, and SEWRPC.

the regional economy is not projected to significantly increase or decrease relative to the State or Nation. Recognized in the employment projections is the continuing shift in the Region from a manufacturing to a service-based economy. The population in the Region is forecast to increase by about 18 percent from 2000 to 2035. This forecast envisions a modest increase in fertility and survival rates in the Region, and anticipates minimal net in-migration through the year 2035. With baby-boomers aging, 20 percent of the Region's population is projected to be 65 years of age or older by the year 2035, as compared to 13 percent in the year 2000. The number of households in the Region is forecast to increase by about 24 percent from 2000 to 2035. The average household size in the Region is expected to continue to decrease, but more moderately than in the past – from 2.52 persons per household in the year 2000 to 2.39 persons per household in the year 2035.

**2035 Regional Land Use Plan**

The regional land use plan is intended to provide a guide for land use development within the Region to the year 2035. Implementation of the plan will depend upon the voluntary actions of municipal, county, State, and Federal agencies and units of government acting in cooperation with the private sector.

The year 2035 regional land use plan contains the following salient recommendations:

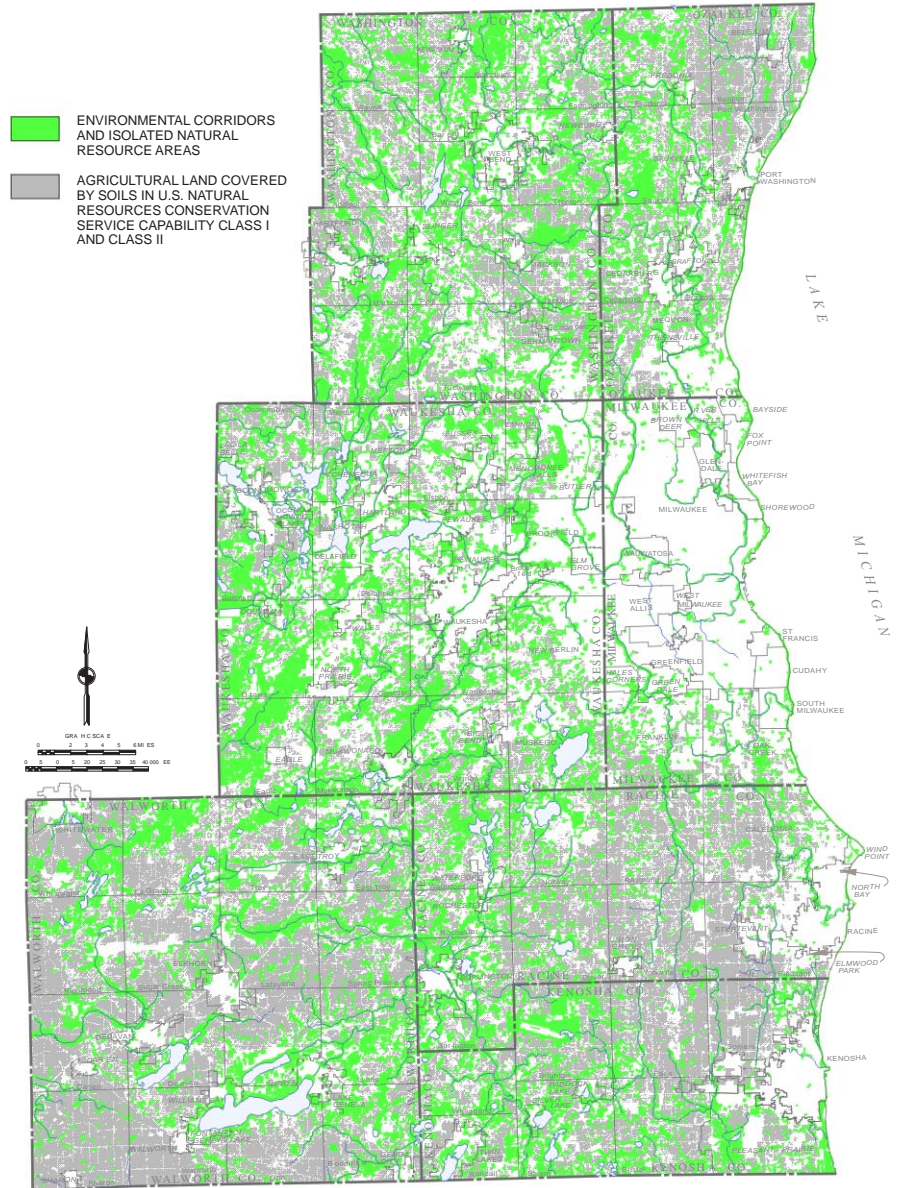
- The primary environmental corridors, secondary environmental corridors, and isolated natural resource areas of the Region should be preserved in essentially natural, open uses, continuing to account for about 23 percent of the area of the Region, as shown on Map 1. These areas encompass the best remaining features of the Region's natural resource base, the lakes, rivers, streams, and associated shorelands and floodlands, wetlands, woodlands, prairie remnants, wildlife habitat, rugged terrain and steep slopes, unique landforms and geological formations, existing and potential outdoor recreation sites, and scenic areas and vistas.

- The prime, or most productive, farmland in the Region should be preserved in agricultural use. The land with soils considered to be most suitable for agriculture is land covered by agricultural capability Class I and Class II soils as determined by the U.S. Natural Resources Conservation Service. As shown on Map 1, farmland with Class I and Class II soils accounted for about 36 percent of the land area in the Region and 75 percent of all farmland in southeastern Wisconsin in the year 2000. Some Class I and Class II farmland that is located adjacent to existing urban centers and within planned urban growth is necessarily proposed to be converted to urban use as a result of planned and orderly growth of those urban centers. It is recommended that the counties in the Region, in cooperation with the concerned municipal units of government, carry out work efforts to identify and preserve prime farmland, considering farmland covered by Class I and Class II soils, and such other factors as the size of individual farm units and overall size of the farming area, the availability of support services, and the degree of encroachment from urban uses.

- New urban development should be accommodated within and around existing urban centers through infill development, redevelopment, and the orderly expansion of planned urban service areas on lands proximate to these centers that can be readily and economically provided with centralized sanitary sewerage, water supply and mass transit services. Map 2 shows these urban centers and growth areas. Particular emphasis is placed on stabilizing and revitalizing the central cities of Milwaukee, Racine, and Kenosha. The regional land use plan envisions that the historic trend in land use decentralization will be moderated, with historic population decreases in Milwaukee County being replaced by population growth, and with growth in outlying counties being moderated. The plan further proposes that the forecast residential growth occur predominately at medium and high densities in planned residential neighborhoods and in more mixed use settings. The plan envisions residential neighborhoods designed as cohesive units, properly related to the larger community of which they are a part, and served by an interconnected internal street, bicycle- and pedestrian-way system; by neighborhood school, park, and shopping facilities; and by sanitary sewerage and water supply facilities. The regional plan also envisions residential development in mixed-use settings including dwellings above the ground floor of commercial uses; residential structures intermixed with, or located adjacent to, compatible commercial, institutional, or civic uses; and residential development integrated into, or located in proximity to, major employment and activity centers. Under the plan, lands in urban uses would increase by about 13 percent from the year 2000 to 2035 to accommodate the 18 percent increase in population, 24 percent increase in households, and 12 percent increase in employment.

Map 1

**ENVIRONMENTAL LANDS AND PRIME FARMLANDS RECOMMENDED FOR PRESERVATION UNDER THE YEAR 2035 REGIONAL LAND USE PLAN**



Source: SEWRPC.

- The regional plan envisions a range of commercial and industrial areas. The largest commercial and industrial areas, in terms of employment levels, are identified as major economic activity centers. These are defined as areas containing a concentration of commercial and/or industrial land having at least 3,500 total jobs or 2,000 retail jobs. Sixty such centers would



accommodate about 50 percent of all jobs in the Region in 2035. The plan envisions the continued development and redevelopment of the Region's existing major commercial and industrial centers, and those now under development or redevelopment, as shown on Map 2.

### Municipal Water Supply Service Areas

Under the regional water supply planning program, those areas which may be expected to be served by municipal water supply facilities by the year 2035 were identified. This effort considered existing and planned land use development type and density, relationship to existing water supply service areas, shallow groundwater aquifer characteristics, areas of known groundwater contamination, historical community positions toward water supply service, and local plans.

The potential municipal water service areas in the year 2035 are shown on Map 3. In 2007 these areas were served by 76 water utilities, and these areas are envisioned to continue to be served by these existing 76 utilities and by new municipal utilities.

The population expected to be served by municipal water supply systems in the Region would increase from about 1.56 million persons in the year 2000, to about 2.10 million persons in 2035, an increase of about 536,000 persons, or about 34 percent (see Table 1). The percentage increase in the population served by municipal water systems is greater than the anticipated growth of the total population, due to an expectation that the number of people presently relying on private water systems will decline, from approximately 370,000 people in the year 2000 to about 179,000 people in 2035, due to the anticipated expansion of municipal water service areas into areas currently served by private systems.

### WATER CONSERVATION

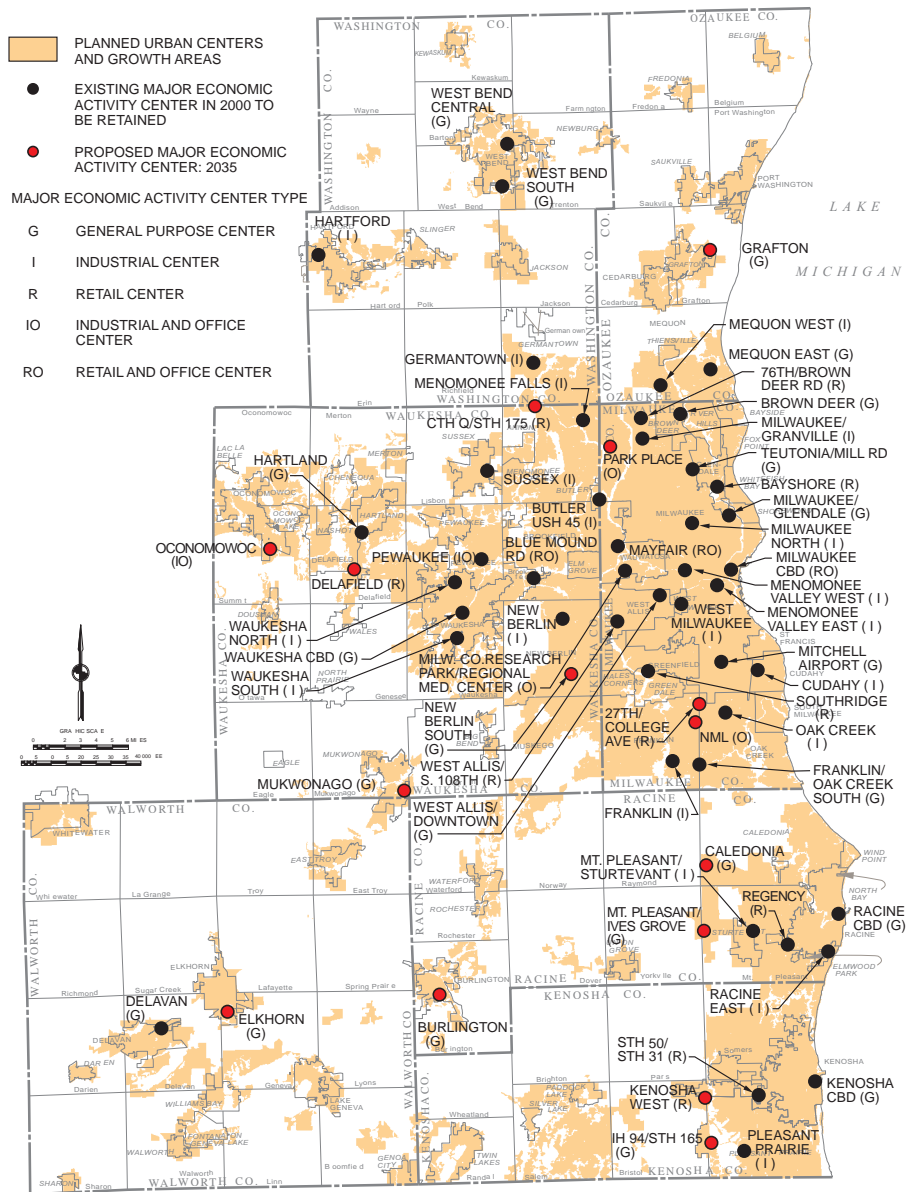
Reasons to pursue water conservation include:

- reductions in the operating costs and potential future capital costs of water treatment, transmission, and distribution;
- attendant reductions in energy consumption and air pollutant emissions; and
- contribution to maintaining a sustainable water supply.

The need for, and implications of, water conservation within the Region may be expected to differ between those areas utilizing Lake Michigan as a source of supply, and those areas utilizing groundwater. With limited exceptions, the areas utilizing Lake Michigan water are located east of the subcontinental divide which traverses the Region. Areas utilizing groundwater lie both east and west of the divide (see Map 4).

Map 2

### PROPOSED URBAN CENTERS AND MAJOR ECONOMIC ACTIVITY CENTERS IN THE REGIONAL LAND USE PLAN: YEAR 2035



Source: SEWRPC.

Table 1

**ACTUAL AND PROJECTED POPULATION CHANGES IN MUNICIPAL AND PRIVATE WATER SUPPLY SERVICE AREAS WITHIN THE SOUTHEASTERN WISCONSIN REGION: 2000 AND 2035**

County	Municipal Water Service Areas				Private Water Service Areas			
	2000 Population	2035 Projected Population	2000-2035 Municipal Water Service Areas Increment		2000 Population	2035 Projected Population	2000-2035 Private Water Service Areas Increment	
			Population	Percent Increase			Population	Percent Decrease
Kenosha.....	111,000	199,900	88,900	80	38,600	10,200	-28,400	-74
Milwaukee.....	917,300	1,004,200	86,900	9	22,900	2,900	-20,000	-87
Ozaukee.....	45,400	86,800	41,400	91	36,900	14,300	-22,600	-61
Racine.....	146,400	196,200	49,800	34	42,400	17,400	-25,000	-59
Walworth.....	56,200	112,100	55,900	99	35,800	27,900	-7,900	-22
Washington.....	66,800	113,000	46,200	69	50,700	44,300	-6,400	-13
Waukesha.....	218,400	385,000	166,600	76	142,400	61,800	-80,600	-56
Region	1,561,500	2,097,200	535,700	34	369,700	178,800	-190,900	-52

Source: U.S. Bureau of the Census and SEWRPC.

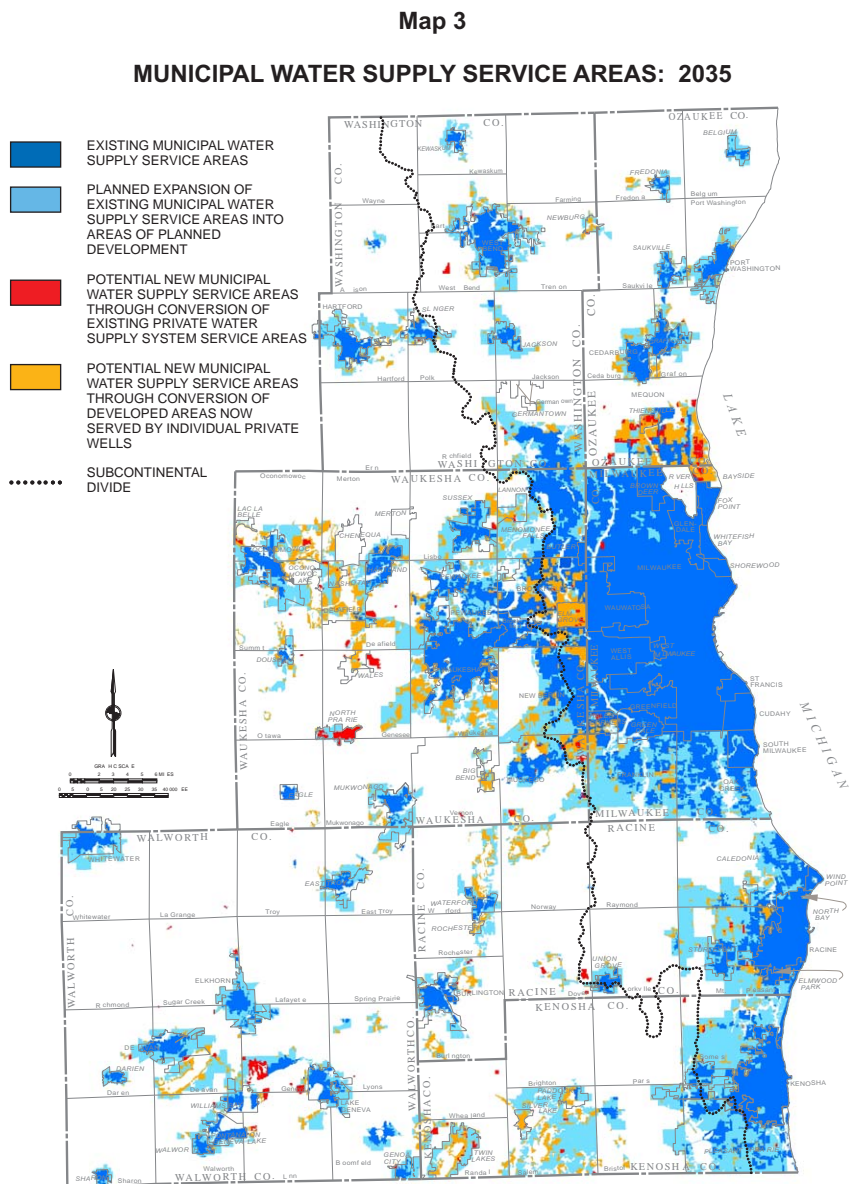
Those areas of the Region served by Lake Michigan supplied systems have access to a bountiful source of high-quality water provided that the Lake is properly protected and managed. Spent water is treated and returned to the Lake in an amount at least equal to the amount of water removed; consequently, there may be more limited reasons to conserve water for the purpose of maintaining a sustainable water supply. However, those areas of the Region served by groundwater-supplied systems need to be concerned with the continued ability of the groundwater aquifers to provide a sustainable water supply. Groundwater levels in the deep sandstone aquifer underlying southeastern Wisconsin have been steadily falling over the last century. This decline is due to pumping for use by urban development within Southeastern Wisconsin and adjacent developing areas, particularly Northeastern Illinois. Up until about 1960, more than one-half of the deep aquifer groundwater pumping in southeastern Wisconsin occurred east of the subcontinental divide. Figure 2 depicts the groundwater aquifers underlying southeastern Wisconsin.

**Water Conservation Approaches**

There are two approaches to water conservation:

1. achieving greater efficiency in utility operations by minimizing the amount of water that must be produced and conveyed to meet water use demand, such as through leak detection and repair; and
2. reducing consumer demand for water, through measures such as modifications of water rates to discourage use, conversion to water-saving plumbing features, water recycling, and education.

In areas of the Region which utilize Lake Michigan as a source of supply, water conservation may be expected to be focused primarily on increasing the



Source: SEWRPC.

efficiency of water utilities along with the most cost effective demand conservation measures.

This approach can have the attendant benefits of reducing the cost of water production and providing more favorable rates for water use while meeting environmental objectives. For Lake Michigan utilities, as already noted, the water supply is abundant and the spent water is treated and returned to the source so there should be few concerns for supply sustainability provided the Lake is properly protected and managed. Moreover, some of the major Lake Michigan water supply systems are operating well below existing capacity. For example, the City of Milwaukee system is operating at less than 50 percent of capacity. Major reductions in consumer demand may be expected to result in corresponding increases in water rates. However, if Lake Michigan utilities were experiencing increasing demand such that existing infrastructure capacity was being approached, reducing consumer water use would be important.

In areas of the Region which utilize groundwater, the sustainability of supply, and in some cases, infrastructure needs, are the driving force for water conservation, and requires consideration of both utility efficiency and increased consumer demand conservation measures. Groundwater supply utilities using the deep aquifer rely upon water resources which are declining, and for all groundwater supply utilities, the spent water is treated and typically discharged to surface water streams rather than returned to the aquifer source.

### Potential Conservation Measures and Water Use Reduction

A summary of water conservation measures, including estimates of effectiveness and cost, is presented in Table 2. The level of municipal water conservation which may be expected to be implemented and achieved will be unique to each community and water utility and dependent upon the composition of its water users, the level of utility efficiency already being achieved, the adequacy of its water supply infrastructure, and the sustainability of its water supply.

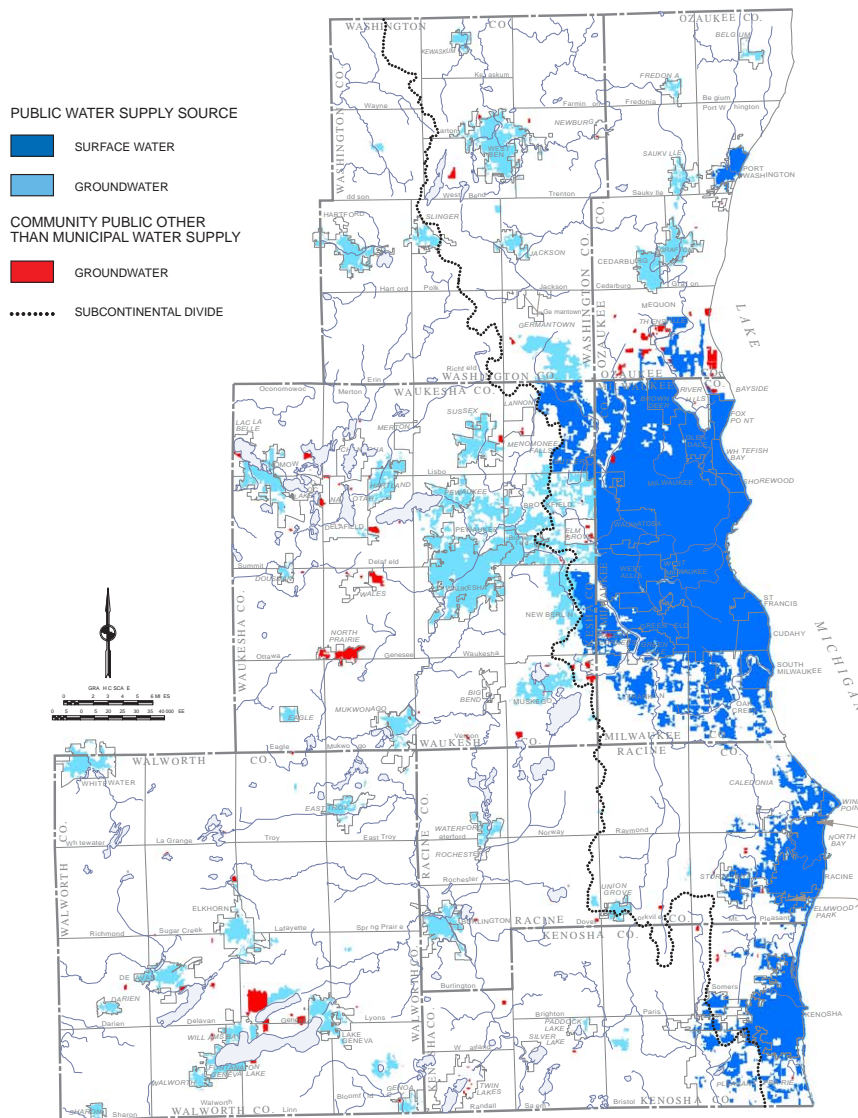
Table 3 presents projected water conservation program effectiveness for water utilities based upon consideration of these factors. The expected water conservation levels above and beyond the estimated 4 percent currently being achieved by water utilities vary from an additional 4 to 10 percent on an average daily basis, and an additional 6 to 18 percent on a maximum daily basis. For more information on such effectiveness, the reader is referred to SEWRPC Technical Report No. 43, *State-of-the-Art of Water Supply Practices*, prepared under the planning program.

### WATER DEMAND FORECASTS

Forecasts of future water demand were prepared by first identifying the increment of forecast regional demographic, economic, and land use growth and change between the years 2000 and 2035. Unit water demand factors as documented in SEWRPC Technical Report No. 43, *State-of-the-Art of Water Supply Practices*, were then applied to this forecast increment of demographic, economic, and land use growth and change to project the increment of growth and change in water use:

Map 4

### AREAS UTILIZING LAKE MICHIGAN AND GROUNDWATER SUPPLY IN SOUTHEASTERN WISCONSIN: 2005



Source: Wisconsin Department of Natural Resources and SEWRPC.



- residential land use, average daily demand—70 gallons per capita per day;
- commercial and institutional land use, average daily demand—800 gallons per acre per day;
- industrial land use, average daily demand—1,500 gallons per acre per day; and
- miscellaneous municipal use, average daily demand—100 gallons per acre of urban service area per day.

Figure 3 illustrates the stability in average residential water use demand over the last several years. The minor variations from year to year may be attributed to the differences in outdoor water use in wet and dry years. Table 4 displays the trends in average water use demand by use category between the years 2000 and 2005. The unit water demand factors utilized to prepare the future water demand forecast assume stability in unit residential water demand, but continuing declines in unit industrial and commercial water demand.

The forecast of year 2035 average daily water use demand comprised of existing year 2000 demand and the forecast increment of demand between 2000 and 2035 were reduced by from 4 to 10 percent on an average daily demand basis, and from 6 to 18 percent on a maximum daily basis, to account for the proposed implementation of utility-specific water conservation measures, with the specific reduction proposed for each utility being based upon the utility source of supply, existing infrastructure, and existing conservation programs.

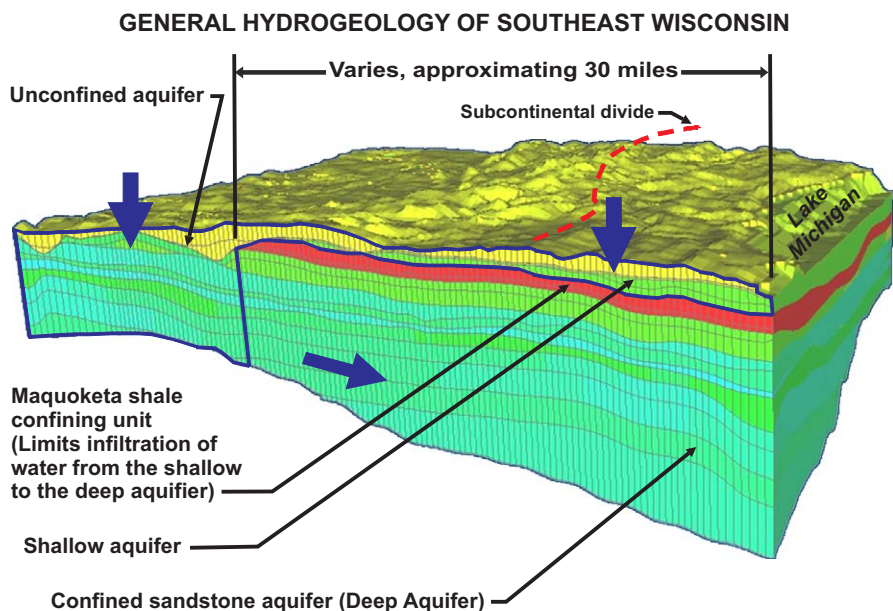
The forecasts of water use demand for each water utility, and by way of summary for each county and for the Region, were compared to a range of alternative projections based on low and high potential levels of demographic and economic growth, including and not including further water conservation as appropriate to each utility, and utilizing the year 2005 rather than the year 2000 as the base year. The use of the year 2005 rather than 2000 as the base year for the forecast, would result in a lower forecast for a few municipal utilities. Figure 4 presents the forecast and alternative projections considered for Milwaukee County. Significant reductions in industrial water use occurred in some municipalities over the period 2000 through 2005.

### Municipal Water Supply System Forecasts

In 2005, there were 79 municipal water supply systems operating within the Region. Due to consolidations, there were three fewer utilities in existence in 2007. It is anticipated that by the year 2035, 24 additional municipal water supply systems will be developed to serve existing urban areas currently not served by municipal water supply.

As presented in Table 1, the year 2000 total resident population served by municipal water utilities in the Region was about 1.56 million persons, or about 81 percent of the 1.93 million total population. The total population expected to be served by municipal water utilities in the Region in 2035 approximates 2.1 million persons, or about 92 percent of the projected 2035 population of 2.3 million. This represents an increase of about 536,000 persons, or 34 percent, over the 2000 level. The area served by municipal water supply systems within the Region is expected to increase by about 62 percent, from about 390 square miles in 2000 to about 631 square miles in 2035, or to about 23 percent of the Region, as summarized in Table 5. About 418 square miles were served by municipal water supply systems in 2005. A significant portion of the increase in land served by municipal water supply systems is due to the expected expansion of existing municipal water service into already developed areas currently served by self-supplied water systems, and the establishment of new utilities to serve existing development currently on private water supply systems. The amount of new urban land envisioned to be developed and served by municipal water systems between 2000 and 2035 approximates 63 square miles, or about a 16 percent increase in existing urban lands served by municipal water utilities.

Figure 2



Private residential wells are generally in the shallow aquifer and 100 to 300 feet deep. Most municipal wells are 200 to 800 feet deep with some up to 2,200 feet deep, and are in both the shallow and deep aquifer.

Source: USGS.

Table 2

POTENTIAL WATER CONSERVATION PROGRAM MEASURES

Program Component	Potential Reduction in Average Daily Water Use <sup>a</sup>	Estimated Annual Cost per Customer <sup>b</sup> Over a 10-Year Period	Comments
Water System Efficiency Actions	-- <sup>c</sup>	--	Includes meter testing for accuracy, leak detection and repair, water main maintenance and replacement, water system survey and audits, and water production refinements. Some of these are in place in all communities in the Region
Moderate-Level Public Informational and Educational Program	1-3%	\$1.50-\$2.50	Includes redesign of water bill, distribution of educational materials, utility staff training, and presentations to schools and civic groups
Higher-Level Public Informational and Educational Program	2-4% <sup>d</sup>	\$2.50-\$3.50	Includes moderate-level program elements, plus development of school curriculum, and broader informational programming involving newspapers, website, and flyers
Outdoor Watering Restrictions	1-2% <sup>e</sup>	\$0.50-\$2.00	Cost varies, depending upon level of enforcement
Plumbing Retrofits At No Cost to Customer	1-2% <sup>f</sup>	\$0.50-\$1.00 <sup>f</sup>	Includes low-volume shower heads and reduced toilet volume devices
Toilet Replacement Rebate Program	1-3% <sup>g</sup>	\$2.00-\$3.00 <sup>g</sup>	Toilet flush volumes: pre-1950 = 7.0 gallons; 1950-1979 = 5.0 gallons; 1980-1993 = 3.6 gallons; 1994 to present = 1.6 gallons  Not allowed under 2006 PSC policies. Effectiveness may be limited at \$100 rebate due to estimated \$100 cost of new toilet and \$150 cost of installation
Water Softener Replacement Rebate Program	<1-1% <sup>h</sup>	\$2.50-\$3.50 <sup>h</sup>	Not allowed under 2006 PSC policies. May be carried out for wastewater utility purposes. Effectiveness may be limited, due to modest rebate of \$150, given cost of new softener and installation of about \$550. Added advantage of reducing chloride in wastewater
Clothes Washing Machine Replacement Rebate Program	1-3% <sup>i</sup>	\$3.00-\$5.00 <sup>i</sup>	Clothes washer water use per load: pre-1980 = 56 gallons; 1980-1990 = 51 gallons; 1990-present = 40 gallons for conventional; 27 gallons for high-efficiency  Not allowed under 2006 PSC policies. Effectiveness may be limited, due to modest rebate of \$200, given cost of new clothes washers of \$700 or more
Water Conservation Rate Structure	2-4%	\$0.10-\$0.20 <sup>j</sup>	--
Rainwater Harvesting	Variable	Variable	Primarily used for outdoor water use. Retro-fitting plumbing for indoor water uses can be expensive and raises concerns over accidental improper use, and dangerous cross connections, and extreme cold weather functioning.

<sup>a</sup>Potential water savings estimates assume a largely residential water use base. Savings for systems with large commercial, institutional, and industrial components will be variable.

<sup>b</sup>Cost estimated on a household residential equivalent unit basis.

<sup>c</sup>Measures are utility specific. Costs and effectiveness will vary with extent of current and past practices, condition and type of water supply system, and level of unaccounted for water.

<sup>d</sup>Costs and effectiveness are total for program, including elements in the moderate public informational and educational program.

<sup>e</sup>Water savings would be substantially higher on a maximum day or week basis.

<sup>f</sup>Cost data and effectiveness assumes 25 percent participation spread over 10 years.

<sup>g</sup>Cost data and effectiveness assumes 25percent participation spread over 10 years. Rebate amount of \$100.

<sup>h</sup>Cost data and effectiveness assumes 20 percent participation spread over 10 years. Rebate amount of \$150.

<sup>i</sup>Cost data and effectiveness assumes 20 percent participation spread over 10 years. Rebate amount of \$200.

Source: SEWRPC.



Based upon the changes in population and land use within each of the municipal water service areas and proposed future water conservation measures, forecasts were made of the future water use demands and pumpage for each utility, as summarized by county in Table 6. The total water use demand on an average daily basis for the municipal water utilities in the Region is forecast to increase from about 201 million gallons per day (mgd) in 2000, to about 258 mgd in 2035, an increase of about 29 percent. The corresponding pumpage is forecast to increase from about 231 mgd to about 303 mgd, or by about 31 percent, on an average daily basis; and from about 347 mgd to about 491 mgd, or by about 41 percent, on a maximum daily basis. Pumpage forecasts include water use demand based upon sales, water used in the production of water and system maintenance, and unaccounted-for water. These forecasts of water use and pumpage serve as an important basis for the consideration and evaluation of future year 2035 alternative plans for municipal water supply systems. The forecasts were prepared by:

- Municipal utilities currently served by Lake Michigan water supply—total water use demand on an average daily basis is estimated to increase from about 162 mgd in 2000 to about 184 mgd in 2035, an increase of about 14 percent;
- Municipal utilities currently served by groundwater supplies—total water use demand on an average daily basis is estimated to increase from about 38 mgd in 2000 to about 67 mgd in 2035, an increase of about 76 percent; and
- Newly planned municipal utilities—an estimated 24 new utilities are estimated to have a year 2035 water use demand of about 8 mgd on an average daily basis. All of these systems are envisioned to use groundwater as the source of supply.

About 60 percent of the forecast increase in water use by municipal utilities between 2000 and 2035, or about 35 mgd on an average daily basis, is due to connecting areas served by private water supply systems and individual private on-site wells to public utilities. Accordingly, only about 40 percent of the forecast increase, or about 23 mgd on an average daily basis, represents new demand—of about 12 percent—on the resource base.

The following additional forecasts were made with respect to water supply:

- Residential Other Than Municipal Community Systems—24 privately owned, self-supplied, water systems which provide water supply services to primarily residential land uses, would remain. These systems serve residential developments, such as mobile home parks and condominium complexes, beyond the cost effective reach of municipal water supply facilities. These 24 systems are expected to continue utilizing groundwater as the source of supply;
- Industrial Water Supply Systems—63 privately owned, self-supplied, water systems which currently provide water for industrial land uses are expected to continue utilizing groundwater as the source of supply;
- Commercial Water Supply Systems—256 privately owned, self-supplied, water systems which currently provide water for commercial land uses are expected to continue utilizing groundwater as the source of supply;
- Institutional and Recreational Water Supply Systems—28 privately owned, self-supplied, water systems which currently provide water for institutional and recreational land uses are expected to continue utilizing groundwater as the source of supply;

**Table 3**  
**FORECAST EFFECTIVENESS OF WATER CONSERVATION PROGRAM LEVELS INCLUDED AS A COMPONENT OF ALL WATER SUPPLY ALTERNATIVE PLANS FOR SOUTHEASTERN WISCONSIN**

Water Utility Category	Future Water Conservation Assumption Over and Above the Current Level <sup>a</sup>	
	Average Day Reduction in Use	Maximum Day Reduction in Use
<ul style="list-style-type: none"> <li>• Lake Michigan Supply with Return of Spent Water</li> <li>• Adequate Water Supply Infrastructure in Place for 10 or More Years</li> </ul>	4% <sup>b</sup>	6% <sup>b</sup>
<ul style="list-style-type: none"> <li>• Lake Michigan Supply with Return of Spent Water</li> <li>• Some Water Supply Infrastructure Needs Expected During the Next 10 Years</li> </ul>	4% <sup>c</sup>	10% <sup>c</sup>
<ul style="list-style-type: none"> <li>• Groundwater Supply</li> <li>• Adequate Water Supply Infrastructure for 10 or More Years</li> <li>• No Major Aquifer Quality or Quantity Issues</li> </ul>	6% <sup>d</sup>	12% <sup>d</sup>
<ul style="list-style-type: none"> <li>• Groundwater Supply</li> <li>• Major Infrastructure Needs Expected During the Next 10 Years</li> <li>• No Major Aquifer Quantity or Quality Problems</li> </ul>	8% <sup>d</sup>	16% <sup>d</sup>
<ul style="list-style-type: none"> <li>• Groundwater Supply</li> <li>• Major Infrastructure Needs Expected During the Next 10 Years</li> <li>• Aquifer Quantity or Quality Problems</li> </ul>	10% <sup>d</sup>	18% <sup>d</sup>

<sup>a</sup> The existing level of water conservation generally carried out by the Region's water utilities is estimated to be currently achieving reductions in average and maximum day water demand of about 4 percent through meter testing, leak detection and repair, and repair and replacement of water mains.

<sup>b</sup> Water conservation program cost may be offset by reductions in operating cost.

<sup>c</sup> Water conservation program cost may exceed reductions in operating costs.

<sup>d</sup> Water conservation program cost will likely exceed reductions in operating costs.

Source: SEWRPC.

Table 4

MUNICIPAL WATER USE BY USE CATEGORY IN THE SOUTHEASTERN WISCONSIN REGION: 2000 AND 2005

Year	Average Annual Water Use					Percent Unaccounted-for Water
	Residential Water Use		Industrial Water Use	Commercial, Institutional, and Multi-Family Residential	Total Water Use	
	Gallons Per Capita Per Day	Gallons Per Acre Per Day	Gallons Per Acre Per Day	Gallons Per Acre Per Day	Gallons Per Capita Per Day	
2000	68	910	4,010	1,054	128	10
2005	70	916	3,003	964	120	11

Source: SEWRPC.

Figure 3

AVERAGE DAILY RESIDENTIAL MUNICIPAL WATER USE PER CAPITA: 1997-2005

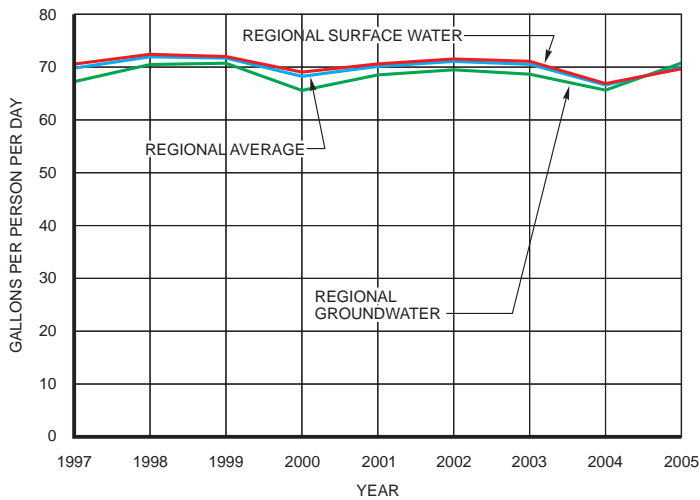
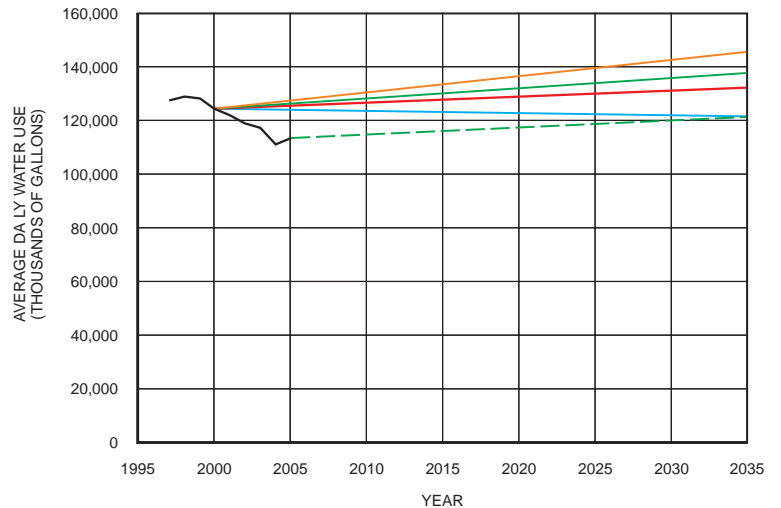


Figure 4

ACTUAL, PROJECTED, AND FORECAST AVERAGE DAILY WATER USE: MILWAUKEE COUNTY



— ACTUAL DAILY WATER USE, 1997-2005

FORECAST

— INTERMEDIATE-GROWTH, 2000 BASE YEAR FORECAST, WITH FURTHER CONSERVATION

ALTERNATIVE PROJECTIONS

— HIGH-GROWTH, 2000 BASE YEAR PROJECTION, WITH FURTHER CONSERVATION

— INTERMEDIATE-GROWTH, 2000 BASE YEAR PROJECTION, WITHOUT FURTHER CONSERVATION

— LOW-GROWTH, 2000 BASE YEAR PROJECTION, WITH FURTHER CONSERVATION

— INTERMEDIATE-GROWTH, 2005 BASE YEAR PROJECTION, WITH FURTHER CONSERVATION

Source: Public Service Commission of Wisconsin and SEWRPC.

- Agricultural Water Supply Systems—52 privately owned, self-supplied, water systems which currently provide water for irrigation and other purposes are expected to continue utilizing groundwater as the source of supply;
- Irrigation Water Supply Systems—70 privately-owned, self-supplied, water systems which provide irrigation water for land uses other than agricultural uses, such as golf courses, are expected to continue utilizing groundwater as the source of supply;
- Power Generation Water Supply Systems—six existing privately owned, self-supplied, water systems provide water for cooling and other uses at thermolectric-power-generation facilities. These facilities include: Pleasant Prairie Power Plant and Paris Generating Station facility in Kenosha County, Valley Power Plant and Oak Creek Power Plant in Milwaukee County, Port Washington Power Plant in Ozaukee County, and Germantown Power Plant in Washington County. Combined, these facilities are reported to use nearly 2 billion gallons of water per day. Most of that water is utilized by the Valley Power Plant, the Oak Creek Power Plant, and the Port Washington Power Plant, all of which use Lake Michigan water. These systems typically return over 99 percent of the cooling water used back to the Lake. Nevertheless, this represents a significant ongoing and important water use under current and future conditions.

**Table 5**

**PROJECTED CHANGES IN MUNICIPAL WATER SUPPLY SERVICE AREAS IN THE SOUTHEASTERN WISCONSIN REGION: 2000 AND 2035**

County	Total Area (square miles)	Municipal Water Service Area					
		Year 2000		Year 2035		Increment 2000-2035	
		Area Served (square miles)	Percent of County	Area Served (square miles)	Percent of County	Number	Percent
Kenosha.....	278.4	29.8	11	66.0	24	36.2	121
Milwaukee.....	242.7	180.9	75	202.3	83	21.4	12
Ozaukee.....	235.5	15.7	7	40.4	17	24.7	157
Racine.....	340.6	37.9	11	64.4	19	26.5	70
Walworth.....	576.5	22.0	4	46.7	8	24.7	112
Washington.....	435.6	21.4	5	40.5	9	19.2	89
Waukesha.....	580.5	82.3	14	170.6	29	88.3	107
Region	2,689.9	390.0	14	630.9	23	240.7	62

Source: U.S. Bureau of the Census and SEWRPC.

**Table 6**

**MUNICIPAL WATER SUPPLY SERVICE AREA DEMAND AND PUMPAGE BY COUNTY IN THE SOUTHEASTERN WISCONSIN REGION: EXISTING YEAR 2000 AND FORECAST YEAR 2035**

County	Existing Year 2000			Forecast Year 2035		
	Average Water Use Demand (gallons per day x 1,000)	Average Daily Pumpage (gallons per day x 1,000)	Maximum Daily Pumpage (gallons per day x 1,000)	Average Water Use Demand (gallons per day x 1,000)	Average Daily Pumpage (gallons per day x 1,000)	Maximum Daily Pumpage (gallons per day x 1,000)
Kenosha.....	11,011	14,847	22,171	21,102	27,786	42,591
Milwaukee.....	124,832	138,612	203,822	132,317	147,277	240,836
Ozaukee.....	5,573	6,542	10,362	10,629	13,212	20,356
Racine.....	23,252	28,584	45,994	28,958	36,808	59,669
Walworth.....	6,346	8,089	13,699	12,036	15,492	25,693
Washington.....	6,426	7,577	12,074	11,682	13,768	21,699
Waukesha.....	23,104	26,962	38,889	41,756	48,996	80,551
Region	200,544	231,213	347,011	258,480	303,339	491,395

Source: SEWRPC.

- Self-Supplied Residential Water Systems - About 179,000 persons, or about 8 percent of the year 2035 resident population of the Region, are expected to be served by private domestic wells. Assuming an average use of 65 gallons per capita per day, these private domestic wells would withdraw about 12.0 million gallons per day from the shallow groundwater aquifer, and be served by onsite sewage disposal systems. About 90 percent of the water withdrawn by these private wells may be expected to be returned to the groundwater via infiltration.

In comparison to Table 6 which presents data on forecast water demand over the next 30 years, Table 7 presents data on the utilization and reserve capacity of existing Lake Michigan water supply treatment plants. In particular, the City of Milwaukee treatment plants currently are operating at less than 50 percent of their capacity, and are projected in the year 2035 to be at about 56 percent of capacity. The projected reserve, or excess capacity, of the Milwaukee treatment plants exceeds the total regional forecast increase in maximum daily water pumpage in the Region over the next 30 years.

**WATER SUPPLY LAW**

An inventory of water supply law was conducted under the study and the findings of this study are documented in SEWRPC Technical Report No. 44, *Water Supply Law*. Although a number of the study findings have implications for the design of alternative plans, and the selection of a recommended plan, for Southeastern Wisconsin, the key findings of the study relate to the regulation of the use of Lake Michigan water to serve areas located west of the sub-continental divide traversing the Region. Both the existing regulatory framework and the currently proposed new regulatory framework were found to be particularly important in this respect.

**Current Regulatory Framework**

Under State law, a user seeking to divert water which would result in a water loss averaging more than two million gallons per day within a thirty day period from the Lake Michigan Basin must obtain a permit from the Wisconsin Department of Natural Resources (WDNR). A “water loss” means a loss of water from the Basin as a result of inter-basin diversion or consumptive use

Table 7

**CAPACITY AND USE OF LAKE MICHIGAN WATER TREATMENT PLANTS WITHIN SOUTHEASTERN WISCONSIN: 2000 AND 2035**

	Existing 2000 Pumpage (mgd)		Forecast 2035 Pumpage <sup>b</sup> (mgd)		Existing Rating Plant Capacity (mgd) <sup>d</sup>	Reserve Capacity (mgd) <sup>d</sup>
	Average	Maximum Day	Average	Maximum Day		
City of Cudahy Water Utility.....	4.8	6.6	4.8	6.0	6.0	None
City of Kenosha Water Utility.....	14.5	21.6	22.2	33.4	42.0	8.6
City of Milwaukee Water Utility.....	125.0	176.6	132.9	212.3	380.0	167.7
Linwood Avenue.....	--	--	--	--	275.0	--
Howard Avenue.....	--	--	--	--	105.0	--
City of Oak Creek Water and Sewer Utility.....	7.0	15.5	14.2	29.2	20.0 <sup>b</sup>	None <sup>b</sup>
City of Port Washington.....	1.3	1.7	1.9	3.1	4.0	0.9
City of Racine Water and Wastewater Utility.....	25.0	39.0	29.2	44.2	60.0	15.8
City of South Milwaukee Water Utility.....	2.7	3.6	2.6	4.3	8.0	3.7
North Shore Water Commission.....	4.2	8.1	4.9	9.6	18.0	8.4

<sup>a</sup>Based upon data from the Wisconsin Department of Natural Resources files. The capacity data given are based upon the capacity of the critical plant component. Other plant components may have higher capacities. Thus, some components may provide a higher reserve capacity than that based upon the capacity of the critical element used to construct the table.

<sup>b</sup>The City of Oak Creek water treatment plant is designed to be expanded in increments up to 48 mgd.

Source: Public Service Commission of Wisconsin, Wisconsin Department of Natural Resources, water utilities, and SEWRPC.

or both. If the water is used outside the Basin but is returned to the Basin, it would not constitute a “water loss”. If the water loss involved averages more than five million gallons per day, the WDNR must notify each of the governors of the eight Great Lakes states and the premiers of the Canadian provinces involved. The WDNR must consider any comments submitted by the governors and premiers in making its decision on the proposal. The eight Great Lakes states are: Illinois, Indiana, Michigan, Minnesota, Ohio, Pennsylvania, New York, and Wisconsin; the two Canadian provinces concerned are Ontario and Quebec.

Federal law prohibits any diversion from the Lake Michigan Basin unless first approved by the governors of the eight Great Lakes states. This prohibition is set forth in the Water Resources Development Acts (WRDA). This prohibition does not apply to any diversions authorized on or prior to November 17, 1986. WRDA does not specifically define what constitutes a diversion. WDNR has taken the position that water taken and used outside the Great Lakes Basin, but then returned to the Basin, is not a diversion subject to the provisions of WRDA.

**Potential Future Regulatory Framework**

On December 13, 2005 the governors of the eight Great Lakes States entered into a Great Lakes - St. Lawrence River Basin Water Resources Compact. If this Compact is approved by the legislators of all of the eight Great Lakes States, and consented to by the Congress of the United States, it would modify the regulations applicable to the use of Great Lakes Basin water.

All diversions would be prohibited, with, however, three limited exceptions under the Compact. A diversion would be defined to occur whenever water is transferred from the Great Lakes Basin into another watershed by any means other than incorporation into a product. The three exceptions from the diversion prohibition are for straddling communities, communities within straddling counties, and intra-basin transfers.

The first exception would allow any incorporated municipality with corporate boundaries lying partially in, and partially out, the basin to seek approval for a diversion from the state concerned, provided that the water is to be used for public water supply purposes and that all water withdrawn is to be returned to the source less an allowance for consumptive use. The exception also requires that for diversions exceeding 100,000 gallons per day, the straddling communities must show that the need cannot reasonably be avoided; the withdrawal is limited to quantities that are reasonable for the intended purpose; and that the withdrawal is shown to have no significant adverse impacts on the natural resources of the Basin; and that water use conservation measures are to be implemented. If the diversion would result in a consumptive use of five million gallons per day or more the proposal must also undergo a multi-state review process, the findings of which must be considered by the state concerned in deciding whether or not to approve the proposed diversion.

The second exception permits communities located within a straddling county to similarly seek approval for a diversion. Approval of a diversion of any size would require approval by all of the governors of the eight Great Lake states. The diversion would have to be accompanied by provision for return flow. The third exception relating to intra-basin diversion would have no practical application within the planning area.

The Village of Pleasant Prairie in Kenosha County has a diversion approved by WDNR. The Pleasant Prairie diversion is to end by the year 2010 when all Lake Michigan water used west of the subcontinental divide is to be returned as treated wastewater to



Lake Michigan rather than to the Des Plaines River. The City of Kenosha has historically used Lake Michigan water west of the subcontinental divide with the return of the spent water to Lake Michigan via the City sanitary sewage system. The Kenosha use was never considered a diversion, provided the spent water was returned to its source.

### Implications for Plan Design

All of the alternative plans to be considered under the study and the recommended plan are to be designed to fully meet the requirements of existing State law; of the Federal Water Resources Development Act; and of the proposed Great Lakes Compact.

## CONSIDERATION OF ALTERNATIVE REGIONAL WATER SUPPLY PLANS

A number of initial alternative regional water supply plans are proposed to be considered and evaluated.

### Alternative Plan 1—Continuation of Existing Sources of Water Supply

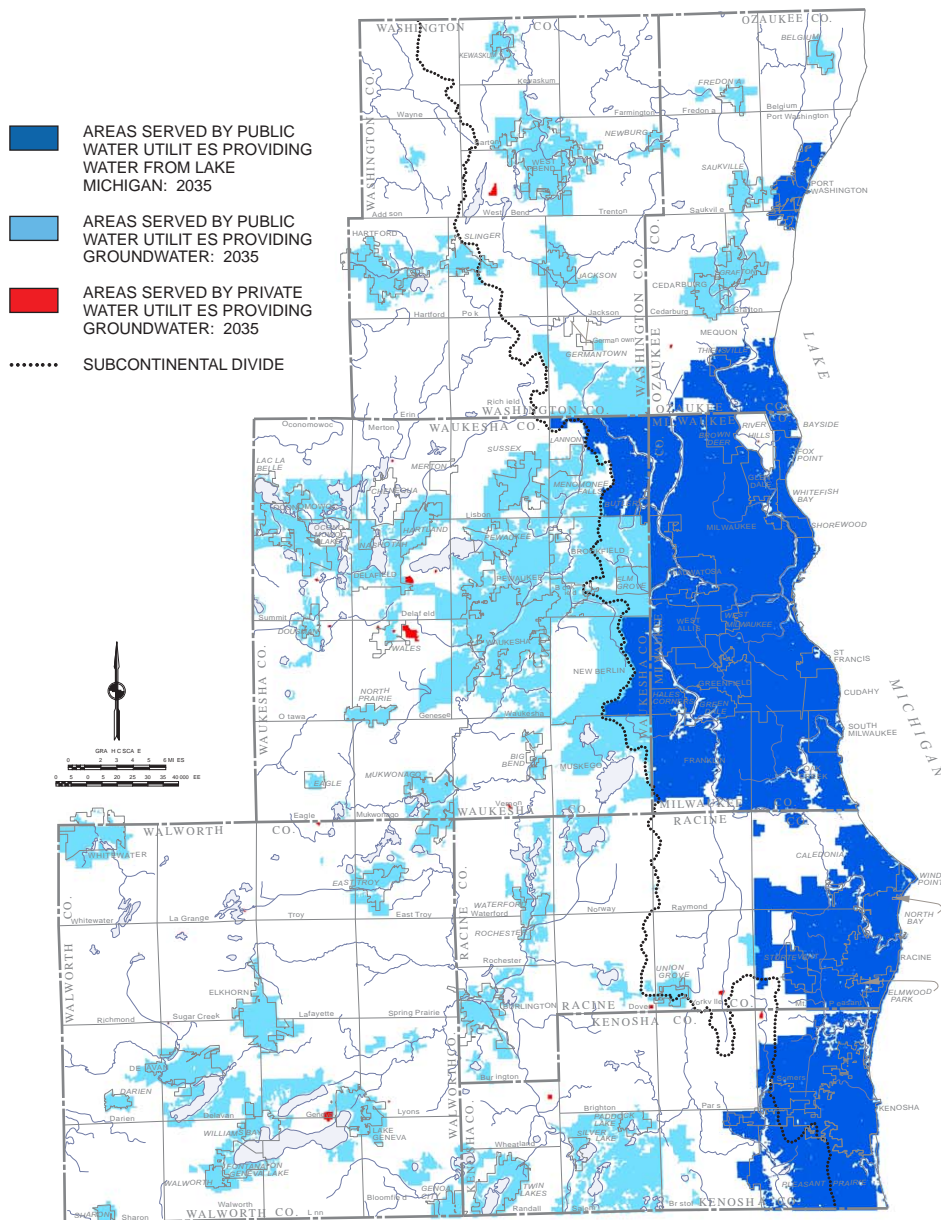
This alternative plan, as shown on Map 5, would maintain the existing sources of water supply for the Region's water utilities: groundwater for those now using groundwater and Lake Michigan water for those reliant on Lake Michigan water. For those groundwater-based water utilities with water quality or quantity problems, treatment of groundwater and/or alternative groundwater sources—shallow replacing deep groundwater as a source—will be considered. In the Kenosha area Lake Michigan water would continue to be provided west of the subcontinental divide by the City of Kenosha Water Utility to portions of the City of Kenosha, portions of the Village of Pleasant Prairie, the Town of Somers, and portions of the Town of Bristol, recognizing longstanding inter-municipal agreements, and investment in Lake Michigan water supply infrastructure, and provision for return flow already in place.

### Alternative Plan 2—Limited Expansion of Lake Michigan Supply (Limited to East of Subcontinental Divide and to Straddling Communities with Existing Return Flow)

This alternative plan, as shown on Map 6, would only differ from Alternative Plan 1 in that four selected communities located east of the subcontinental divide (the Villages of Germantown and Elm Grove; the eastern portion of the City of Brookfield; and a portion of the Town of Yorkville) would be converted from groundwater to Lake Michigan as the source of water supply, along with two communities straddling the subcontinental divide (the central portion of the City of New Berlin which is located west of the divide and the City of Muskego which is largely located west of the divide) but which already have return flow to Lake Michigan in place.<sup>1</sup>

<sup>1</sup>For purposes of the regional water supply planning effort, a Lake Michigan water supply return flow component is defined as the return of treated wastewater from the area under consideration, either directly via a sanitary sewerage system, or indirectly via treatment plant effluent conveyance through a pipeline, a watercourse, or some combination. The return flow must equal or exceed the amount taken from the source of supply, less an allowance for consumptive uses.

Map 5  
**ALTERNATIVE PLAN 1 - CONTINUED RELIANCE ON GROUNDWATER SUPPLY EAST AND WEST OF THE SUBCONTINENTAL DIVIDE**



Source: SEWRPC.

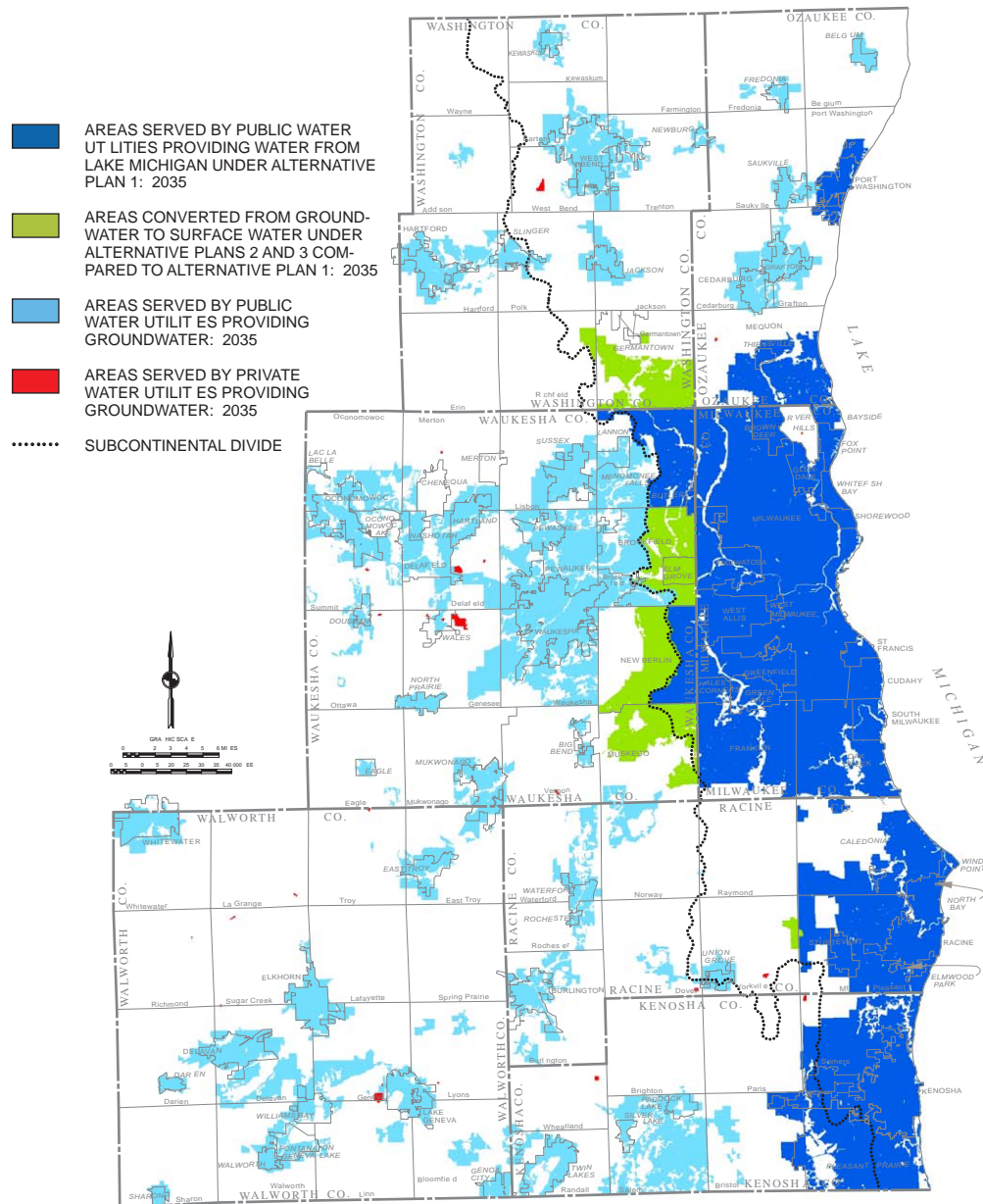
**Alternative Plan 3—Limited Expansion of Lake Michigan Supply and Enhanced Groundwater Recharge**

This alternative plan would be the same as Alternative Plan 2, but would also include shallow groundwater aquifer recharge measures using local rainfall and treated wastewater. The shallow groundwater aquifer recharge measures would include:

- Enhancement of current rainfall infiltration requirements of new development set forth in Chapter NR 151 of the Wisconsin Administrative Code, specifically, attempting to achieve 80 percent or more of pre-development rainfall infiltration after development.
- Enhancement of rainfall infiltration through bioengineering of about four square miles of open space at sites to be selected, specifically to minimize the impacts of groundwater water use on lakes, streams, and wetlands.
- Identification and protection of the remaining most significant groundwater recharge areas within the Region either through preservation or development in a manner which would preserve their natural hydrology and rainfall infiltration.
- The development of systems for further treatment and discharge of wastewater treatment plant effluent into the shallow aquifer at selected locations. Such recharge systems may violate current State regulations and policies regarding groundwater management, and could require changes to, or variances from, those regulations and policies.

Map 6

**ALTERNATIVE PLAN 2 - LIMITED EXPANSION OF LAKE MICHIGAN<sup>d</sup> SUPPLY**



<sup>a</sup> Alternative Plan 3 would maintain the same sources of water supply as alternative Plan 2, but would also include measures to increase groundwater recharge.

Source: SEWRPC.

This alternative will also examine—and provide a separate cost and impact evaluation—of groundwater injection wells intended for aquifer replenishment with treated Lake Michigan water from existing Lake Michigan water treatment facilities as a source, and the deep aquifer as the receptor. Injection wells would be located east of the subcontinental divide. Wells would be designed so that the deep sandstone groundwater at the point of injection would be flowing toward Lake Michigan, or toward wells where return flow would be to the Lake. Such injection wells would also require changes to, or variances from, State regulations and policies; and implementation would face issues of who pays for the injected water.



## Alternative Plan 4—Substantial Expansion of Lake Michigan Supply

This alternative plan, as shown on Map 7, would further expand the use of Lake Michigan as a source of water supply—replacing groundwater as the source of supply—beyond that proposed in Alternative Plan 2, including expansion to communities located east of the subcontinental divide, communities straddling the subcontinental divide, and non-straddling communities in counties straddling the subcontinental divide.

- The additional communities using Lake Michigan water supply east of the subcontinental divide would include: the City of Cedarburg, and the Villages of Fredonia, Grafton, and Saukville, all in Ozaukee County.
- The additional communities using Lake Michigan water supply straddling the subcontinental divide would include: the western portion of the City of Brookfield, the western portion of the Village of Menomonee Falls, the Town of Brookfield, all in Waukesha County, and the Village of Union Grove in Racine County.
- The non-straddling communities using Lake Michigan water supply in a county which straddles the subcontinental divide would include: the Cities of Pewaukee and Waukesha, and the Villages of Lannon, Pewaukee, and Sussex, all in Waukesha County.

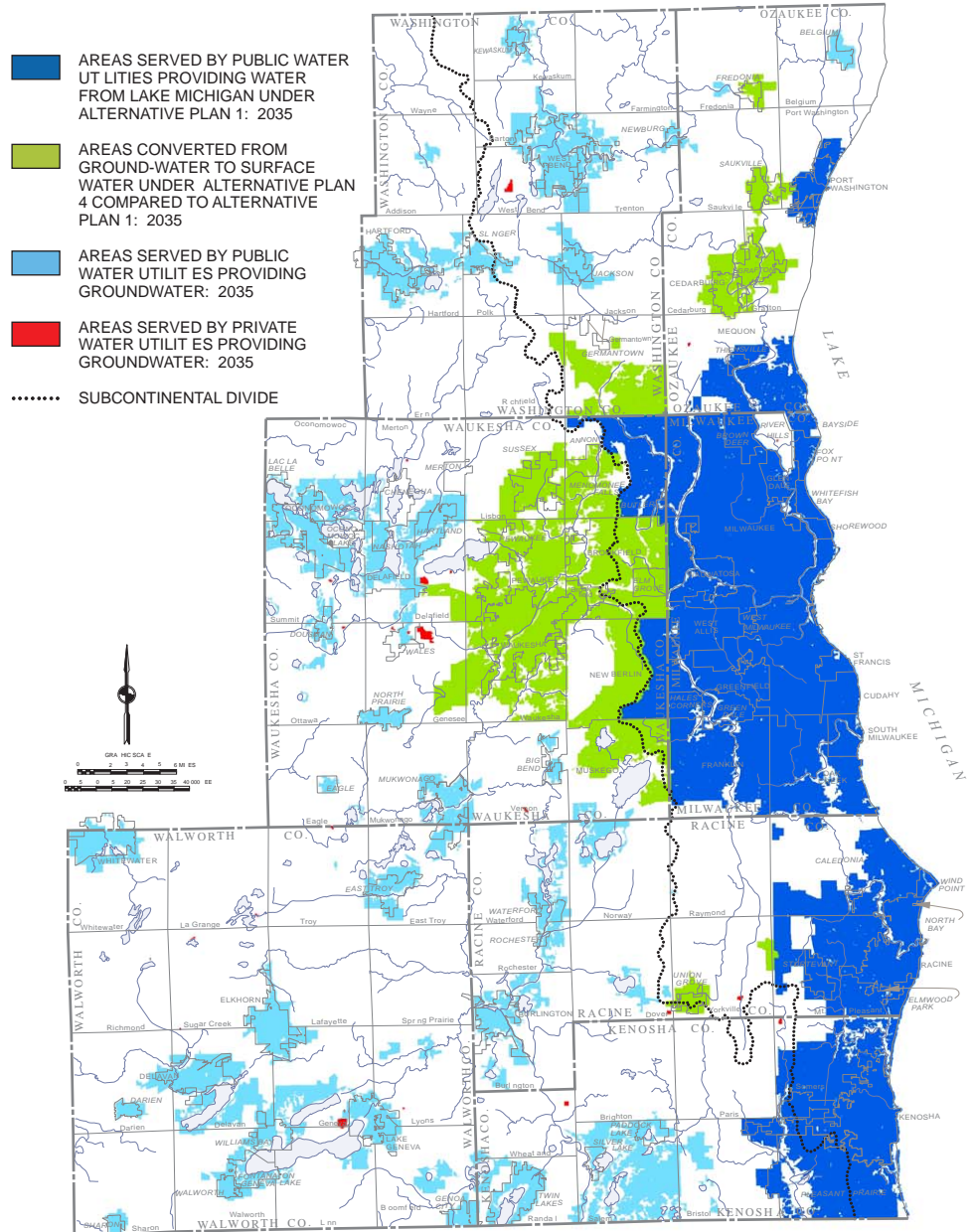
For all communities converting from groundwater to Lake Michigan water, return flow of treated wastewater to Lake Michigan would be provided.

## EVALUATION OF ALTERNATIVE PLANS AND NEXT STEPS

Each of the alternative plans will be evaluated with respect to cost; potential environmental impact including the impact on lakes, streams, and wetlands; potential impacts on the shallow and deep aquifers; water supply sustainability; and feasibility of implementation. The plans will also be evaluated with respect to environmental justice considerations, specifically, impacts on minority and low income populations. Based on the findings of the evaluation of the alternative plans, a recommended plan will be developed. Proposals may be considered to modify the regional land use plan and development, and in so doing alter water supply demand and needed supply and attendant costs and impacts. The next newsletter will summarize the findings of the evaluation of the four alternative plans, and potential conclusions regarding the next steps in the planning effort.

Map 7

### ALTERNATIVE PLAN 4 - FURTHER EXPANSION OF LAKE MICHIGAN SUPPLY



Source: SEWRPC.

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## CONTACT INFORMATION

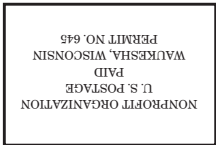
Further information on the regional water supply study, including all study materials—Advisory Committee meeting minutes, plan chapters, presentations, and study reports—are all available on the Commission's website.

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This newsletter was mailed directly to a list of individuals and organizations that have expressed interest in receiving such information. If you did not receive this newsletter directly, and would like to receive future issues, please contact the Commission using the contact information above.

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