

2007 DRAFTING REQUEST

Bill

Received: **07/11/2007**

Received By: **mkunkel**

Wanted: **As time permits**

Identical to LRB:

For: **Louis Molepske (608) 267-9649**

By/Representing: **himself**

This file may be shown to any legislator: **NO**

Drafter: **mkunkel**

May Contact:

Addl. Drafters:

Subject: **Public Util. - gas and water**

Extra Copies: **RCT**

Submit via email: **YES**

Requester's email: **Rep.Molepske@legis.wisconsin.gov**

Carbon copy (CC:) to:

Pre Topic:

No specific pre topic given

Topic:

Water utility conservation requirements

Instructions:

See Attached

Drafting History:

<u>Vers.</u>	<u>Drafted</u>	<u>Reviewed</u>	<u>Typed</u>	<u>Proofed</u>	<u>Submitted</u>	<u>Jacketed</u>	<u>Required</u>
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/1	mkunkel 10/17/2007	bkraft 10/18/2007	pgreensl 10/18/2007	_____	cduerst 10/18/2007		S&L
/2	mkunkel	bkraft	pgreensl	_____	sbasford	sbasford	

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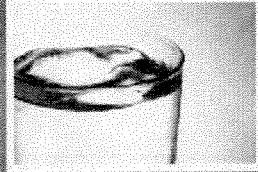
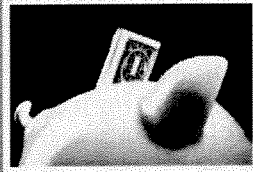
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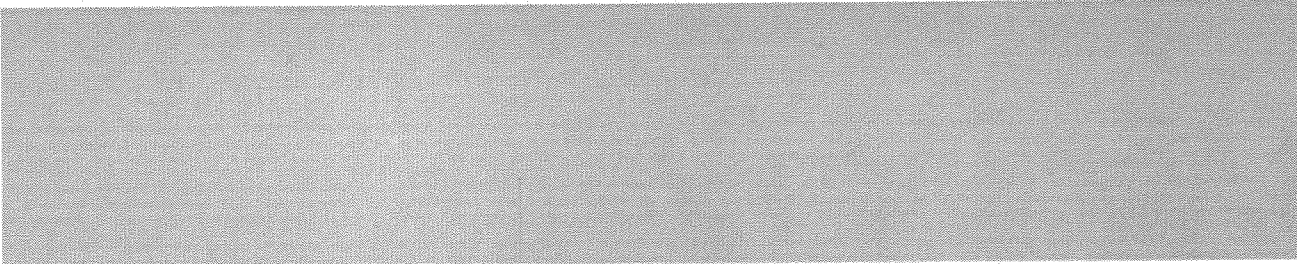
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WATER CONSERVATION &
PROTECTION PLAN

Waukesha Water Utility



GeoSyntec
Consultants



Prepared for:

Waukesha Water Utility
(262)-521-5272

<http://www.ci.waukesha.wi.us/WaterUtility/>

By GeoSyntec Consultants

Jeffrey Edstrom

Bill Ward

(312) 658-0500

www.geosyntec.com

Executive Summary

Overview

Waukesha is proposing a groundwater conservation and protection plan to reduce water use, to ensure the availability of future drinking water supplies and to protect the environment.

Waukesha's existing supply is pumped primarily from a deep confined aquifer. The level of the aquifer has declined over the course of the last 100 years due to pumping from a large number of communities in southeastern Wisconsin and northeastern Illinois. While Waukesha's overall pumpage has decreased over the last 20 years, the aquifer continues to drop due to the fact that it recharges at a slow rate compared to unconfined aquifers in other parts of the state that are recharged by shallow groundwater. The declining aquifers have led to higher concentrations of radium and other contaminants. These problems are forcing the utility to increase water treatment as well as seek new water supplies.

Conserving water provides a number of benefits to water utility customers, the environment, and the utility itself. It saves money for customers by reducing their need for water and by reducing energy costs. The utility saves money through lower energy costs, lower pumping costs, and deferred capital costs. The environment benefits by lessening the strains on water resources.

The following discussion provides background information, a work plan and a schedule for developing a comprehensive water resources protection and conservation program for the City of Waukesha. This discussion concludes with a brief work plan of activities to complete the technical approach in three phases.

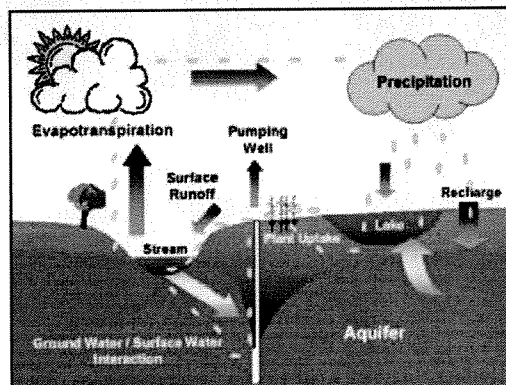


Figure 1. The Water Cycle

Source: Environmental Protection Agency

Recommendations

The Waukesha Water Utility (WU) must make a decision concerning its long-term public water supply. Potential new water supplies all require conservation, whether it is Lake Michigan or local groundwater. The Great Lakes Governors and Premiers will require conservation before Waukesha can obtain a Lake Michigan surface water supply. Growing communities throughout Waukesha County will all need to coordinate their conservation efforts to ensure that there are adequate supplies for their customers if they seek additional local groundwater. Conservation and protection will help ensure the long-term viability of the sources shared with other Waukesha County communities. If the city obtains a Lake Michigan supply, strong conservation measures will be required by the Great Lakes Governors. **Regardless of the source, the conservation program should be comprehensive in protecting water resources throughout the water cycle (See Figure 1).**

The water conservation and protection plan is based on three primary goals:

1. Reduce water use to ensure that public water supplies are stretched
2. Protect sourcewater areas to ensure water sources are protected from pollution
3. Protect stormwater recharge areas to ensure that groundwater resources are replenished

These goals should be pursued through the following water conservation and protection measures:

1. Increase public awareness about water conservation starting with "20% by 2020", "Don't Flush Dollar\$ Down the Drain", and "Don't Get \$oaked by Overwatering Your Lawn" campaigns.
2. Continue upgrading water main to reduce system leakage. Audit system to detect leaks and prioritize upgrades.
3. Adopt a water sprinkling ordinance that restricts outdoor water use, as well as other residential, commercial, and industrial water use restrictions
4. Work with the Wisconsin Public Service Commission to develop a water conserving rate structure.
5. Work with the Wisconsin Public Service Commission to develop a water use reduction program that is based on incentives and public education to decrease Waukesha Water Utility customer use.
6. Investigate the phase-out of residential sewer credit meters to discourage outdoor water use.

7. Work with the City of Waukesha, surrounding communities, and Waukesha County to revise existing subdivision and stormwater management ordinances to ensure that they encourage maximum infiltration of stormwater into local groundwater and wetlands and key infiltration areas for existing water resources. This includes the use of green infrastructure and low impact development.
8. Implement sourcewater protection measures in coordination with the county and Waukesha County communities. Zoning regulations should include the use of overlay zones to delineate recharge areas as well as other best management practices to protect source waters.
9. Investigate the reuse of Waukesha's wastewater. Reuse may involve "gray" water separation or redirection of treated wastewater for regional aquifer recharge.
10. Organize a stakeholder group to assist in updating and implementing the conservation plan.

Introduction and Rationale for the Project

Use of water resources by communities in southeastern Wisconsin and northeastern Illinois has reduced local groundwater availability and threatens streams, rivers and other environmental resources. It has led to a decrease in water quality and has increased the costs of water resource protection and water treatment.

The City of Waukesha, like many other Waukesha County communities located to the west of the Lake Michigan watershed surface divide, draws its water supply from Lake Michigan tributary groundwater in the deep sandstone aquifer located beneath this region (See Figure 2). In the past, this deep aquifer provided a plentiful, high quality source of water. The Maquoketa aquitard protected the deep aquifer from contamination sources in the Milwaukee metropolitan area. Furthermore, because the recharge areas to the west have been largely undeveloped, the deep sandstone aquifer was further protected.

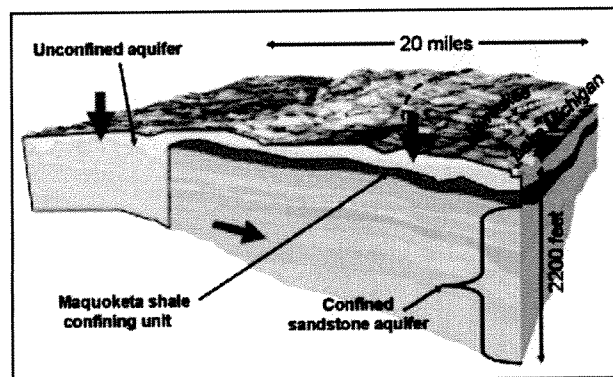


Figure 2. General Hydrogeology of Southeastern Wisconsin

Source: United States Geological Survey

The need for improved groundwater management in the region is further demonstrated by the call for the SEWRPC Regional Water Resource Study and the recent passage of Wisconsin's Groundwater Management Act creating a Groundwater Management Area in Southeast Wisconsin.

Pumping by communities in Milwaukee and Waukesha County over the last century led to a decrease in water levels in the deep aquifers that Waukesha and other communities use for drinking water supply have declined by over 600 feet. As a consequence of this water level decline, radium levels have steadily increased in Waukesha's public water supply wells to the point that they now exceed regulated levels. Waukesha is currently operating under a consent order with the Wisconsin Department of Natural Resources to find a solution to its water resource problems by December 2006.

The City of Waukesha has had success in reducing water use in recent years. The trend for water use is decreasing even as population has increased (See Figure 3). Furthermore, its residential and total per capita water use is among the lowest in southeastern Wisconsin (See Table 1).

Annual Water Use						
County	Residential Water Use			Total Municipal Water Use		Percent Unaccounted for Water
	Total (gallons per day X 1,000)	Per Person (gallons per capita per day)	Per Acre (gallons per acre per day)	Total (gallons per day X 1,000)	Per Person (gallons per capita per day)	
Kenosha	5,619	61	836	13,156	119	12
Milwaukee	51,942	70	1,282	148,378	160	7
Ozaukee	2,570	64	581	5,575	123	14
Racine	7,804	61	832	25,330	175	12
Walworth	2,565	57	474	6,250	111	16
Washington	3,488	66	724	8,411	96	13
Waukesha	11,404	60	506	23,093	102	11
Total Region	85,392	67	911	228,193	145	9

Table 1. Per Capita Water Use in Southeastern Wisconsin by County 2000

Source: Southeastern Wisconsin Regional Planning Commission and Public Service Commission of Wisconsin

However, the Utility's 2005 Master Plan indicates that potential groundwater supplies will be insufficient by 2030 due to growing population in Waukesha and surrounding communities. By 2030, Waukesha's maximum daily pumpage will increase to 17.5 million gallons per day. The deficiencies are only increasing. Continuing to utilize existing deep well sources will lead to the continued depletion of these Great Lakes tributary sources. As population further increases, it will become necessary to utilize much stronger demand-side conservation measures as well as sourcewater protection and stormwater management practices.

“While the overall amount of water pumped has increased for the residential and commercial sectors, per capita use has decreased.”

Over the last decade, water use in Waukesha has increased in the residential and commercial sectors. According to the Utility’s Master Plan, the relative percentages of water use have changed while overall water use has increased slightly. Metered residential water use has increased from 39% of total consumption to 44%, and in the commercial sector from 29% to 34%. These relative increases are primarily the result of decreases in industrial use. Metered industrial use declined from 28% to 17%, and public metered water use from dropped from 5% to 4%. While the overall amount of water pumped has increased for the residential and commercial sectors, per capita use has decreased. As such, the residential and commercial sectors should be targeted for conservation efforts.

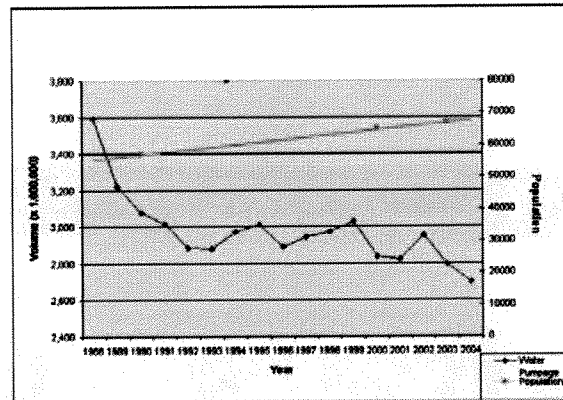


Figure 3. City of Waukesha Water Use and Population
Source: Waukesha Water Utility and the City of Waukesha

As development and population in the region continue to grow, the Southeast Wisconsin Regional Planning Commission (SEWRPC) estimates that groundwater withdrawals in the region are approaching 70 million gallons/day (MGD). The U.S. Geological Survey concluded that this historic heavy pumping rate by Milwaukee and surrounding suburbs in a confined aquifer that recharges more slowly than an unconfined aquifer has resulted in a zone of depression (See Figure 4). The impact has resulted in a reversal of flow in the deep aquifer system away from Lake Michigan, ongoing groundwater drawdown rates at about 6 feet/year, and declining groundwater quality as deeper groundwater contains higher levels of dissolved materials, including radium. All of these trends must be reversed to maintain sustainable groundwater supplies in southeast Wisconsin.

End-of-the-pipe water conservation is not enough to address the impacts of regional water use. Southeast Wisconsin's water resource problem must be addressed more comprehensively to protect, conserve, restore, and improve the groundwater resources that sustain its communities. Water resources can be significantly affected by development activities. Water resources move through the water cycle, sometimes called the hydrologic cycle. The water cycle is the continuous movement of water from ocean, lakes, rivers, and other water bodies to air and land then back to these water bodies through rain and snow in a cyclic pattern as water is used and re-used. Some water infiltrates (or seeps into) the ground or evaporates back into the atmosphere.

Southeast Wisconsin communities will need to supplement their sources of deep groundwater supply with groundwater drawn from shallow wells located in the surficial, sand and gravel aquifers in the less developed portions of Waukesha County. As urban development in the Milwaukee metropolitan area continues to move into Waukesha County, communities must act today to ensure that the groundwater resources in that region are preserved, protected, and enhanced. In addition, the city must look for more innovative ways to promote reuse of wastewater and enhance groundwater recharge. Poorly controlled residential, commercial, and industrial water withdrawals can weaken a community's ability to sustain residents and businesses.

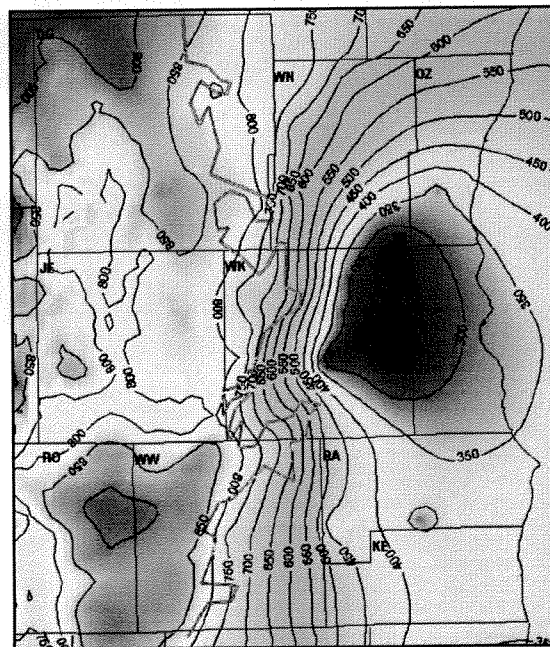


Figure 4. Groundwater Cone of Depression in the Sandstone Aquifer
Source: United States Geological Survey

Technical Approach: Source Water Management and Conservation Plan

Water conservation at the end of the pipe is not enough. Water resources must be protected at every step of the water management cycle through water reuse and enhanced groundwater recharge. Waukesha further recognizes that the city can undertake certain activities in the near term within its corporate jurisdiction, but other activities will need to be coordinated with other communities and the county. The city must work with Waukesha County and its neighboring communities because water resources transcend political boundaries. Regional water management will require additional time and effort to be implemented.

The water management plan encompasses three main activities:

1. Conserving residential, commercial, industrial, and government water use.
2. Protecting existing water resources.
3. Promoting the infiltration and reuse of stormwater and municipal wastewater.

The approach for completing each of these activities is described in the remainder of this report. More timeline details can be found on page 18.

Managing & Implementing Conservation

Introduction and Rationale for the Project

Managing and implementing conservation in Waukesha must be done through a structure that allows for development, implementation, monitoring and review of conservation activities to ensure that they are meeting the timeline and goals of the effort. The Water Conservation program will be implemented in the following eleven tasks:

a) Identify Conservation Goals

Waukesha has set a preliminary goal of a 20% reduction in per capita water use reduction in the city by 2020. This goal is based on prior experience with other municipal water conservation programs in other states. Waukesha is also seeking to reduce peak water demand by 1 million gallons per day (MGD) through controls on water sprinkling. WWU will identify the specific goals for the conservation program and the means to communicate the goals to city officials and the public.

- b) Develop a program that provides monetary and other incentives to water users to reduce water use

Many water utilities use incentive-based programs to encourage water use reductions. This is usually done in tandem with a change in the rate structure that discourages the increased use of water. Appendix B provides background on the types of incentives that are offered as well as the effectiveness of different programs.

- c) Develop a Waukesha Water Utility Conservation Demonstration Program

WWU will (1) document the conservation activities completed by the utility to date, and (2) prepare a demonstration program to further reduce water use within WWU buildings. The demonstration program will include an audit of current WWU water use and opportunities for leak prevention and hardware retrofits. WWU will document the water savings through the program and prepare information for distribution to the public and the press.

- d) Develop a Water Use Profile and Forecast

Document the customer profile and characteristic (e.g., residential vs. commercial) demand by customer type, and overall average and peak water demand. Evaluate forecasts of future demand based on Waukesha Utility and City planning data, SEWRPC forecasts, and county growth data compiled by Southern Illinois University (Dziegielewski, et. al. 2004). Develop a water use profile by analyzing the historic and projected demand by customer sector. Evaluate water loss in the system and the impact of potential infrastructure improvements.

- e) Develop a Decision Support Tool to Identify Appropriate Conservation Measures by Water User Sector

Based on the type of information presented in Appendix A, WWU will identify qualitative and quantitative criteria for selecting conservation measures. This work will build on the IWR Main application currently being developed by WWU. The decision support tool will evaluate and rank appropriate conservation measures by customer sector.

- f) Evaluate and Design Conservation Measures

WWU will develop detailed plans for the identified conservation measures. Designs will include the types of control measures to be applied, the number of devices needed, the method for distributing and installing the measures, and the anticipated water savings from their application.

g) Identify and Assess Conservation Incentives and Benefits and Costs

WWU will estimate the conservation program benefits, including utility cost savings, as a justification for the conservation measures. WWU will demonstrate why the selected measures provide the greatest water use savings at the least costs.

h) Set Schedule for Conservation Measures and Incentives Implementation

Many of the conservation measures may be applied in phases. Factors governing the implementation schedule may include ease of implementation, cost, customer willingness to participate, and level of anticipated water conservation.

i) Implement Conservation Plan

The WWU will implement the final conservation plan encompassing the information gathered under the preceding tasks and coordinate with a stakeholder group that provides input and support. Circulate the plan to local stakeholders, government officials, and utility staff to generate support for and comment on the plan. Begin implementing the plan's measures and track progress. As part of the plan, anticipate impacts on utility revenues and any need for rate adjustments.

j) Conduct Public Outreach and Education

Actively promote implementation of the conservation plan through public education and outreach in the Waukesha schools and the press. Draw on existing education and outreach materials available through <http://www.everydrop.org>, <http://www.waterwiser.org>, and <http://www.awwa.org>, among others. Prepare outreach materials for distribution with water bills and at community events. Investigate the development of public service announcements and programs to be broadcast through local public access channels.

k) Monitor, Evaluate, and Revise Conservation Program as Needed

Conduct an ongoing monitoring program to assess the effectiveness of water use reduction activities through actual water use savings, customer participation, and costs of device maintenance. Regularly report on the program effectiveness to the Water Utility Commission and through annual reports to the public.

Reducing Water Use

Conservation Through Water Use Incentives and Restrictions

Waukesha has set a preliminary goal of a 20% reduction in per capita water use reduction in the city by 2020. This goal is based on prior experience with other municipal water conservation programs. Waukesha is also seeking to reduce peak water demand by 1 MGD through controls on water sprinkling.

These goals can be met through a combination of reducing leaks in the utility's water system, and reducing outdoor and indoor water use.

Detecting and Reducing Leakage in the Waukesha Water System

Leakage from the water system provides a significant opportunity to reduce the amount of water that is pumped from water supplies by WWU. The WWU should institute a more detailed water audit for the system to identify priority areas for water main replacement. While leaks do go back into the groundwater system, the water does not go back into the deep aquifer that provides most of the utility's water supply. Reducing leaks increases water pressure within the system and reduces energy costs for water pumping.

Adopting an Outdoor Water Use Restriction Ordinance

One of the major difficulties facing the city is meeting peak demand. The highest peak days are during the summer when people are watering their lawns. Some of this peak demand is caused by overwatering of lawns during the middle of the day. Lawn watering during the heat of the day uses six times the amount of water than watering in the morning or early evening. Watering during the middle of the day, therefore, not only increases the amount of water required by the whole system, it unnecessarily increases water bills for the individual consumer. Further, by increasing the amount of water needed by the system, it increases costs for developing new wells and treating the water, affecting all ratepayers.

Studies have shown that an adequate amount of water for a lawn is one inch per week. The city should consider an ordinance restricting outdoor sprinkling to times when watering is more efficient. Outdoor sprinkling should only be allowed before 9 a.m. and after 5 p.m. Further consideration should be given to restricting the number of times per week that lawns can be watered. Example ordinance language is included in Appendix A.

This ordinance should be implemented in conjunction with a public education program to reduce sprinkling, **“Don’t Get Soaked by Overwatering Your Lawn”**.

Non-Sprinkling Related Water Use Ordinance

There are additional water conservation activities that can be required by ordinance. In the Midwest, Illinois’ ordinance requirements provide components that provide a basis for the start for an ordinance. The State of Illinois requires that any communities receiving water from Lake Michigan implement the following water use restrictions to ensure that water is used more efficiently. The requirements include:

- Leakage monitoring and correction for storage, transmission and distribution systems.
- Metering of all new construction.
- Metering of existing nonmetered services as part of any major remodeling.
- The adoption of ordinances which require the installation of closed system air conditioning in all new construction and in all remodeling.
- The adoption of ordinances which require that all lavatories for public use in new construction or remodeling be equipped with metering or self closing faucets.
- The adoption of ordinances which require that all newly constructed or remodeled car wash installations be equipped with a water recycling system.
- Development and implementation of public programs to encourage reduced water use.
- Installation of facilities and implementation of programs to reduce to a reasonable minimum, and to accurately account for, water used for navigational, lockage, and leakage purposes; and pollution treatment, control or abatement purposes.
- If receiving approval to use Lake Michigan water, prepare a phased program designed to end the use of deep aquifer water, other than for emergency or standby use, within five years of the receipt of Lake Michigan water.
- Limit hydrant uses to 1% or less of net annual pumpage in each annual accounting period.
- Adopt water rate structures based on metered water use and that water rate structures be developed which will discourage excessive water use.

Additional ordinance provisions that should be strongly considered include:

- Definitions for water conservation ordinance terminology
- Conservation signage and literature distribution
- Enforcement
- Water waste restrictions
- Conservation fees imposed
- Variance procedures
- Response to water shortage

Example ordinance language is included in Appendix A.

Indoor Conservation Measures

Conservation programs can be targeted in Waukesha in areas where there are likely to be older plumbing fixtures. These are in areas developed prior to 1994, when new plumbing requirements were instituted nationally. Bathroom fixtures, including toilets, faucets, showers, and baths, represent over 50% of indoor water use in the home (see Figure 5). There have also been significant changes in plumbing efficiency over time where there can be significant water savings realized within the city.

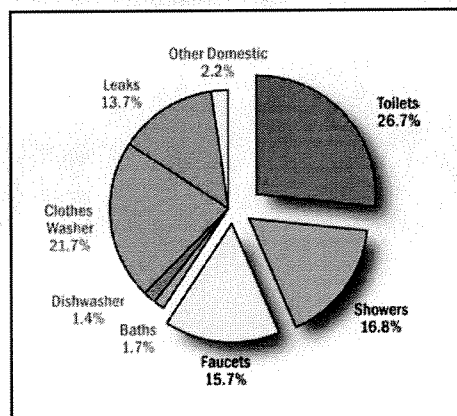


Figure 5. Average Indoor Water Use in a Nonconserving Home

Source: Handbook of Water Conservation and Protection

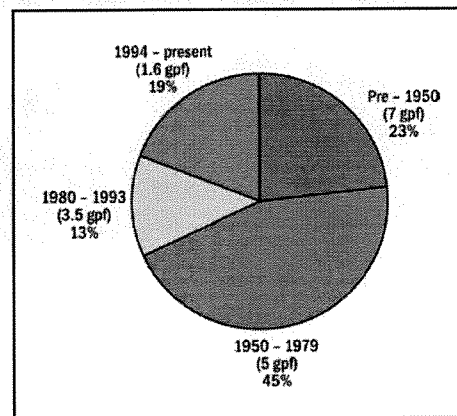


Figure 6. Date of Single Family Home Construction (and original Toilet gallons per flush (gpf))

Source: Waukesha Assessor's Office

Eighty-one percent of single family homes were built prior to 1994 when new plumbing fixtures were required to be water saving (See Figure 6). A map shows the location of areas where the original toilets were 7 gpf (yellow, pre 1950), 5 gpf (red, 1950-1979), and 3.5 gpf (green, 1980-1993). The groupings reveal areas where initial conservation activities can be targeted to maximize their effectiveness. The utility should target these homeowners in areas developed prior to 1994 to educate the owners about the potential savings associated with plumbing upgrades. These areas on the map (See Figure 7) are areas colored in yellow (pre 1950), red (1950-1979), and green (1980-1993). All new toilets installed in homes built since 1994 have 1.6 gallons per flush. If all homes in Waukesha were retrofitted with new toilets, water use would be reduced by up to 500,000 gallons per day, which represents a 5% reduction from the current average daily water use.

"If all homes in Waukesha were retrofitted with new toilets, water use would be reduced by up to 500,000 gallons per day..."

The water savings also represent a potential cost savings for utility customers. In homes that have toilets installed before 1950, a family of four could save \$200 per year. A family of four changing 5 gpf toilets would save approximately \$125 per year, and changing 3.5 gpf toilets would save the same family \$70 per year.

Replacing showerheads installed prior to 1980 can also save significant water and money for homeowners. Replacing showerheads installed before 1980 can save about 5000 gallons per person per year. This saves approximately \$25 per person per year in water and wastewater charges.

Develop a Waukesha Water Utility Conservation Demonstration Program

The city began the process of educating the public about the benefits of water conservation in plumbing fixtures with the announcement of the grant of plumbing fixtures at bathrooms in City Hall. The City Hall demonstration project was a first step. WWU will (1) document the conservation activities completed by the utility to date, and (2) prepare a demonstration program to further reduce water use within WWU buildings. The demonstration program will include an audit of current WWU water use and opportunities for leak prevention and hardware retrofits. These water savings will be documented and included in public outreach information for distribution to the public and the press.

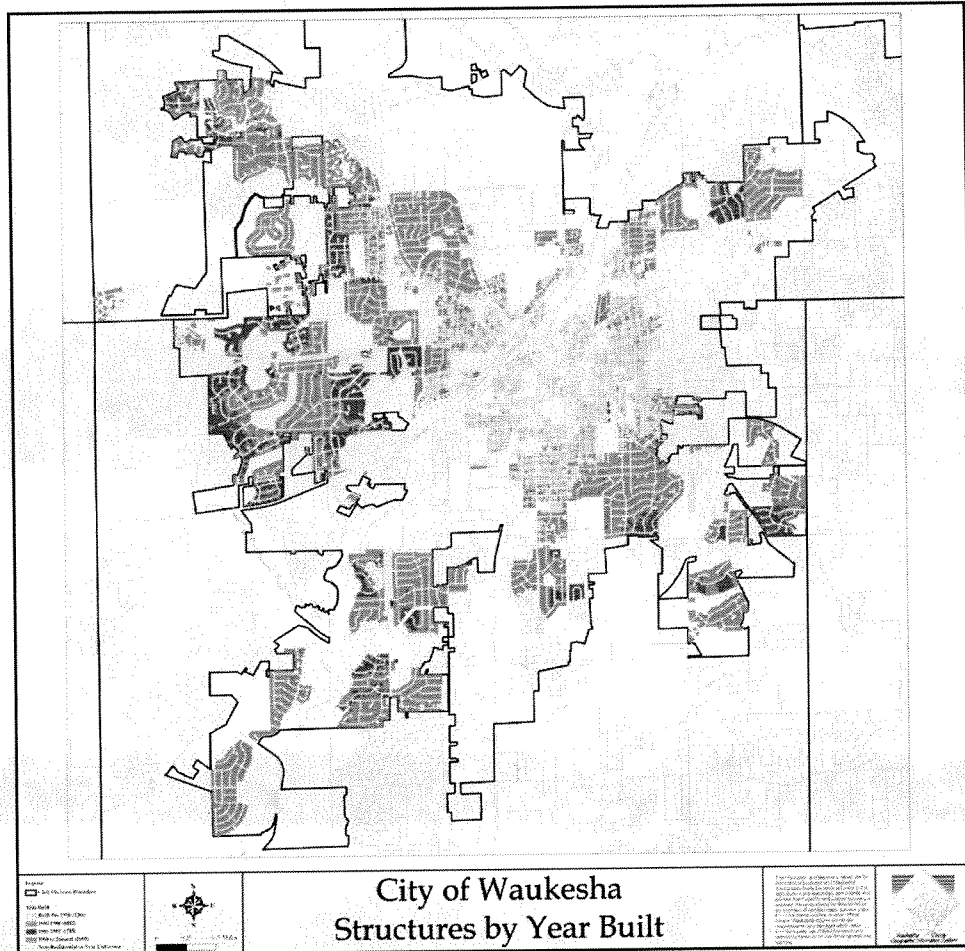


Figure 7. Map of City of Waukesha by Date of Construction

Source: Waukesha Assessor's Office

Implement Inclining Block Rate Structure

Currently, Waukesha has a decreasing block rate structure through which rates decrease as water use increase. This encourages water use and reduces water supply protections. Increasing rates as water use increases builds an incentive for changing plumbing fixtures in the home and reducing outdoor water use. WWU initiated discussions with the Public Service Commission regarding the use of this rate structure. It has not been used in Wisconsin to date, but is in use in other parts of the country. WWU will continue this discussion with the PSC.

Phase Out Residential Sewer Credit Meters

The city should also consider phasing out sewer credit meters for residential units. These meters measure the amount of water that leaves a home through the sewer system. It provides the basis for a credit on the sewer bill. Residences that have the meters do not pay for sewage treatment of the water that does not enter the system. These meters are not in wide usage nationwide because they do not discourage outdoor water use such as sprinkling. Eliminating sewer credit meters would increase the rates for outdoor sprinkling, providing more incentives for reducing water use. Increased revenues obtained by from the phase out of this program could be used by the city to create a conservation incentive program.

Fixture / appliance / location	Type of Incentive (Examples)	Eligibility	Incentive value	Conservation level required / delivered
Showerheads	Rebate for replacement with water-conserving model (A)	Residential and commercial customers	Range from \$25 up to \$150 or 75% of the total cost (whichever is less) for each showerhead retrofitted with an ultra-low flow model	Required maximum of 2.5 gallons per minute per showerhead.
	Free replacement with water-conserving model (A, B, D)	Residential and commercial customers	Value of replacement showerhead.	Delivers 2.5 gallons per minute; has adjustable settings and a non-aerating spray with less temperature loss.
Toilets	Rebate for replacement with water-conserving model (A, B)	Residential and commercial customers; no limit on the number of reimbursed toilets per household or commercial building.	Range from \$25 up to \$150 or 75% of the total cost (whichever is less) for each toilet retrofitted with an ultra-low flow model	Required maximum of 1.6 gallons per flush per toilet.
	Free dye tablets for determining leaks in toilets (A, B, D)	Residential and commercial customers	Value of dye tablets	N/A
Clothes washing machines	Rebate for replacement with water-conserving model (A, B)	Residential customers	Range from \$25 to \$100 for all qualifying clothes washers.	Required to be a Level 1 or 2 clothes washers, as listed and posted online at a region-specific website.
Bathroom faucets	Free aerator attachment (A, B, D)	Residential and commercial customers	Value of aerator	Delivers a flow rate of 1.5 gallons per minute.
Kitchen faucets	Free aerator attachment (A, B, D)	Residential and commercial customers	Value of aerator	Delivers a flow rate of 2.2 gallons per minute (2.0 gpm in some cases).
Pre-rinse spray valves	Free replacement with water-conserving model (A)	Commercial customers (food service industry)	Value of the new, high-efficiency, high-velocity spray valve.	N/A

Institute Incentive Programs.

Many water utilities around the country use incentive-based programs to encourage water use reductions. This is usually done in tandem with a change in the rate structure that discourages the increased use of water. Potential incentives are listed in Table 1. Additional information on incentive programs are listed in Appendix B. Pursuing this option is difficult as the Public Service Commission currently has not authorized costs for these types of conservation programs to be recaptured by utilities. However, the utility should continue discussions with the PSC to ensure that existing and future water sources are protected and used efficiently.

Evaluate Appropriate Conservation Measures by Water User Sector

Based on the type of information presented in Appendices A and B, WWU will work to identify qualitative and quantitative criteria for selecting conservation measures. This work will build on the IWR Main application currently being developed by WWU. The decision support tool will evaluate and rank appropriate conservation measures by customer sector.

Protect Existing Water Resources

Source Water Protection

Source water is water collected from streams, rivers, lakes, or groundwater for public drinking water supplies. Source water protection is designed to protect drinking water sources from sources of contamination. WWU will work with Waukesha County and surrounding communities through the county effort, with Wisconsin Department of Natural Resources (WDNR) through its identified Groundwater Management Area, and with the SEWRPC regional water supply study to ensure an aggressive source water protection effort.

Source water assessments are mandated under the Safe Drinking Water Act, but protection plans are a local management issue. A Waukesha County source water protection plan will include the following components:

1. Establish a stakeholder group involving Waukesha County and its communities, developers, the State, and other interested parties to begin organizing to develop a source water protection plan.
2. Identify the critical recharge areas for the aquifers to establish overlay planning areas for source water protection (see Figure 2). Principal recharge areas for the shallow aquifer system will be identified using previous USGS and WDNR studies, along with aerial photos and soil surveys. Because the shallow system is largely unconfined, recharge occurs throughout the region. However, some areas preferentially recharge the aquifer system, such as areas containing wetlands and hydric soils. The recharge areas will be plotted using GIS as overlays on regional topographic maps.

3. Identify existing and potential future contaminant and recharge impairment threats. The City of Waukesha's source water assessment completed by WDNR indicates that the city's groundwater supply is susceptible to contamination by volatile organic compounds, synthetic organic compounds, nitrate, antimony, and arsenic. The system is moderately susceptible to microbial contamination. The system has low susceptibility to ethylene dibromide contamination. The source water assessment report further notes that no wellhead protection plan or ordinance is in place to protect the city's main production wells. As land in the recharge areas for existing and future production wells is developed, contaminant sources are introduced into the wellhead areas and impervious cover reduces recharge of the aquifer system. The current and future threats to Waukesha County's source water areas will be identified based on current land uses and projected growth patterns. The current and projected threats will be depicted on GIS map products.
4. Set priorities for managing the threats consistent with state statute and policy. Wisconsin is developing a set of statutes and policies governing municipal growth patterns and groundwater protection. Review the statutes and policies to set priorities for management activities in terms of contaminants or development practices to be addressed.
5. Document available and needed management tools to address the threats. A variety of land use planning and management tools are available to Waukesha County communities to affect growth patterns. These include zoning and overlay districts; subdivision, health, stormwater, and other ordinances; use of planned unit developments; and other management tools such as transfer of development rights, conservation easements, and condemnation. Through these management tools, communities can steer development away from critical recharge areas and promote practices such as low impact development and retrofit applications of stormwater best management practices (BMP) to increase stormwater infiltration and groundwater recharge. Identify a suite of existing management tools and recommend additional ordinances and policies based on the experience of other communities.
6. Develop a schedule and work plan for implementing the source water protection plan. Work with the communities to identify realistic schedules for implementing changes to community planning, ordinances, zoning, and other measures. Also, provide estimates of the costs involved in making the changes and will help identify resources available to support the communities.

Enhance Stormwater Infiltration and Wastewater Reuse

When it rains or snow melts, some stormwater goes into the ground and some goes into storm sewers. As more development occurs, more hard surfaces, such as rooftops and roadways are created, meaning there are fewer places where rain water can soak into the soil, nourish plants and remain part of the natural water cycle.

If there is less greenspace to absorb water, sewer systems are forced to handle more water, increasing the risks of flooding. Stormwater sent to sewers is no longer available to irrigate lawns or recharge groundwater. This reduces the amount of water available for drinking water and water to support environmental resources.

Stormwater runoff also can pick up pollutants such as oil and grease, chemicals, nutrients, metals, and bacteria as it flows across surfaces and transports it to destinations in groundwater, streams, rivers, and lakes.

Different areas and soils lead to variability in recharge capabilities. The developed areas of southeastern Wisconsin generally have lower recharge capabilities. Western Waukesha County has areas with the highest recharge rates in the region (See Figure 8). This area recharges local shallow aquifers as well as the deep aquifer that currently serves as Waukesha's primary water source.

The City of Waukesha and Waukesha County stormwater management plans must be reviewed to ensure that rainfall and snowmelt can go back into the ground to replenish groundwater and that pollution is reduced from entering streams, rivers and groundwater. This may involve the use of urban BMP retrofits, such as the replacement of concrete stormwater channels with grass swales, installation of porous pavement on public properties, and public education to encourage the use of rain barrels, biofilters, and more advanced practices including green roofs.

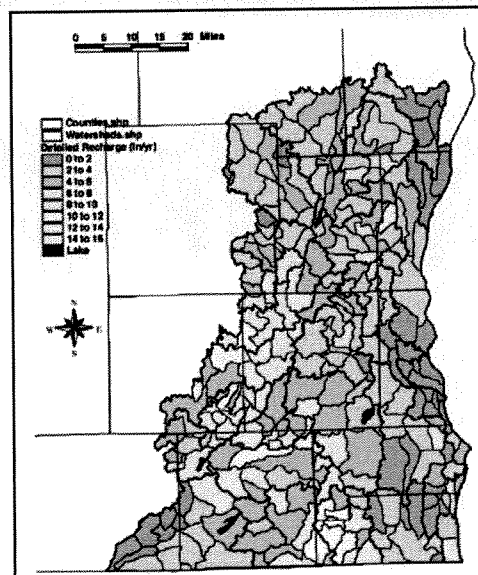


Figure 8. Groundwater Recharge (inches per year) in Southeastern Wisconsin

Source: United States Geological Survey

Waukesha must also coordinate with Wisconsin DNR through the Groundwater Management Areas and with the SEWRPC regional water supply study to ensure that regional stormwater management supports groundwater recharge and protection.

Activities to be pursued include:

1. Identify Opportunities for Stormwater BMP Retrofits on Waukesha City property.
2. Review Proposed Retrofits with Waukesha Public Works Officials.
3. Design Two Stormwater BMP Retrofit Projects.
4. Oversee Stormwater BMP Implementation.
5. Work with Waukesha County to revise the recommended land use plan map (Figure 9) to protect critical recharge areas for shallow and deep groundwater resources (see Figure 8). In particular, land in the Kettle Moraine region is highly permeable and acts as recharge areas for shallow aquifers, the sandstone aquifer, and Lake Michigan.

Planning and Zoning

Waukesha's planning and zoning ordinances must be coordinated with its stormwater management plan to ensure that water is returned to the groundwater naturally rather than into storm sewers. New development must have minimal impact on the natural flow of water to groundwater that supports drinking water supplies and lakes, wetlands, and other environmental resources. Waukesha will consider a performance standard for all new development requiring the maintenance of pre-development hydrologic conditions.

This can be done through revision of local planning and zoning ordinances to require the use of low impact development (LID). It may be necessary to first update the local comprehensive plan to set a goal for open space and conservation planning and design. LID design integrates stormwater management and erosion and sedimentation control into natural systems that keep rainwater on site. This is different from traditional development that uses pipes and drains, ponds, and storm sewers to move water quickly off site and into streams, rivers, and lakes.

Appendix C provides model ordinance language specifically prepared for Wisconsin communities prepared by the University of Wisconsin Extension Service that is potentially appropriate for Waukesha. Appendix D is an example manual developed by the Town of Franklin, Massachusetts to assist planners and developers in implementing best management practices for low impact development.

Ordinance revisions will be completed in the following four tasks.

1. Gather and Review City and County Ordinances.
2. Meet with City and County Planners, Commission Members, and Elected Officials.
3. Evaluate Needed Ordinance Revisions.
4. Draft Ordinance Language.

Waukesha will first promulgate a city ordinance to control sprinkling. WWU will support the ordinance development in the following three tasks.

1. Calculate the peak water use reductions under different sprinkling reduction scenarios (e.g., odd/even restrictions, time-of-day restrictions, sprinkling bans).
2. Prepare draft ordinance language to achieve peak demand reductions.
3. Meet with city officials to review and revise the ordinance language.

Wastewater Reuse and Aquifer Recharge

WWU should investigate the feasibility of wastewater reuse of its wastewater in a manner that will not adversely affect groundwater resources. Waukesha's wastewater is currently discharged to the Fox River, which flows south into Illinois. Waukesha will investigate approaches for returning wastewater to recharge and replenish shallow and deep aquifer systems in compliance with Safe Drinking Water Act standards. Approaches that have been used in other parts of the country include spray irrigation, discharge to drainfields, or deep injection for aquifer storage and retrieval.

WWU will complete the following five tasks:

1. Gather Existing Data on Wastewater Characteristics and Parameters.
2. Develop Treatability Analysis to Determine Engineering Feasibility to Achieve Compliance with Drinking Water Quality Standards.
3. Conduct Bench Scale Tests to Determine Impact of Wastewater Reuse on Soil and Aquifer Materials.
4. Prepare Wastewater Reuse Proposal.
5. Support Proposal Review Process with WDNR.

Timeline for Implementing the Conservation Plan

Short Term Activities

1. Implement Public Education Programs

- Website – educate the public why conservation is important and what they can do to help conserve water and, at the same time, save money. Also, provide information on rain gardens. (Completed)
- 5th Grade Water Education - Continue working with the Waukesha School District by teaching fifth graders the water level in the aquifer, the importance of conservation and some practices that their families can implement. (in place)
- Work with retailers to provide them with information to provide to customers on the benefits of updating indoor fixtures and outdoor watering devices.

2. Continue Water Main & Property Replacement Effort

- Continue to replace old, outdated mains and service laterals. This will help to ensure a reduction in leaks. (In place)

3. Develop Water Conserving Billing Structure

- Continue to work with the Public Service Commission to develop a billing structure that encourages water use conservation.

4. Loop Water Mains

- Have contractors loop the water mains so that this will cut down on future hydrants to be flushed. (In place)

5. Develop Outdoor Water Use Ordinances

- Create and implement ordinances that set limits on when sprinkling is allowed to reduce peak water use, reduce costs for customers, and encourage efficient outdoor sprinkling. (In process)

6. Organize Stakeholder Group

- Create a stakeholder group to advise the utility on the conservation plan.

7. Work with Housing Authority to Update Plumbing

- Begin working with Waukesha Housing Authority to update water fixtures at Waukesha public housing.

8. Work with City Departments and Schools to Reduce Outdoor Water Use

- Identify opportunities for reduced outdoor water use in sprinkling parks and school fields.

9. Audit Water Use in City Buildings

- Audit all city buildings in order to identify ways to reduce water usage.

10. Work with the Focus on Energy Program

- Work with the Focus on Energy program to update showerheads at Waukesha hotels and hand sprayers at Waukesha restaurants.

11. Coordinate Public Education Effort with Meter Change Out Program

- Prepare educational materials to leave with homeowners to make them more aware of water conservation effort.
- Develop initial water audit system to identify homes that have not upgraded original plumbing.

12. Begin Regional Source Water Protection Planning with Surrounding Communities and County

- Work with surrounding utilities to begin coordinating source water protection activities.

Mid-Term Activities

1. Continue Education Programs

- Create Conservation Brochures & Signage.
- Update curriculum for 5th Grade Water Education Classes.
- Press Releases and update public outreach brochures.
- Place water conservation information in WWU bills .

2. Develop Incentives/Rebates Programs

- Evaluate rebate programs for targeted water using appliances and fixtures.
- Evaluate rebates for the outdoor water use equipment (timers, sprayers).
- Continue to work with the Public Service Commission to determine the feasibility and potential success of rebate programs.
- Determine the feasibility of coordinating a residential water audit program with water meter change-out program that would link to an incentive/rebate program.

3. Develop Water Use Restriction Ordinances

- Review plumbing requirements in ordinances: for new construction, remodeling, and retrofits, and Study potential for requiring plumbing updates at time of property sale.

4. Recycle Filtered Backwash Water

- Implement a recycling process for Wells 8, 11, and 12.

5. Implement city Water Audit

- Install water saving fixtures throughout the WWU.
- Work with largest water users to audit facilities.

6. Work with Commercial Sector to Encourage Water Conservation

- Update web site.
- Make up brochures.
- Mail out brochures to commercial properties.

Long Term Activities

1. Continue and Accelerate System Leak Detection

- Update utility detection of leaks to identify priority areas in the system to reduce large leaks and reduce unaccounted for flow.

2. Implement Unidirectional flushing

3. Implement Smart Growth – (Land Use Planning & Zoning)

- Work with others (surrounding communities, City, developers, etc.) to develop best management practices (Low Impact Development Practices) to prevent pollution from moving into the river. Consider revision of city plan, subdivision and zoning ordinances to encourage infiltration of stormwater into the ground.

4. Update Storm Water Management Requirements

- Work with the City of Waukesha and Waukesha County to develop stronger stormwater ordinances to encourage infiltration.

5. Work with Commercial & Industrial Sectors to Audit Water Use

- Work with commercial and industrial customers to identify areas to reduce water use and save customers money.

Date (time) needed _____

LRB - 2960/P1

BILL

→ D-NOTE

MDIT: jld: _____
bjk

Use the appropriate components and routines developed for bills.

AN ACT ^{gen. cat.} [generate catalog] **to repeal . . . ; to renumber . . . ; to consolidate and renumber . . . ; to renumber and amend . . . ; to consolidate, renumber and amend . . . ; to amend . . . ; to repeal and recreate . . . ; and to create . . .** of the statutes; **relating to:** ^{requirements of} water utility conservation ^{conservation} requirements so

SA ✓
Kreb ✓

[NOTE: See section 4.02 (2) (br), Drafting Manual, for specific order of standard phrases.]

Analysis by the Legislative Reference Bureau

If titles are needed in the analysis, in the component bar:

- For the main heading, execute: **create** → **anal:** → **title:** → **head**
- For the subheading, execute: **create** → **anal:** → **title:** → **sub**
- For the sub-subheading, execute: **create** → **anal:** → **title:** → **sub-sub**

For the analysis text, in the component bar:

- For the text paragraph, execute: **create** → **anal:** → **text**

analysis
anal: prelim
 A ^{draft} This is a preliminary draft ^{An} analysis will be prepared for a subsequent version of this draft ^{provided in a later}

FE-S §L ← ✓ ✓

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION #.



ASSEMBLY AMENDMENT ,
TO ASSEMBLY SUBSTITUTE AMENDMENT 1,
TO 2007 SENATE BILL 40

1 At the locations indicated, amend the substitute amendment as follows:

2 1. Page 1279, line 21: before that line insert:

3 H SECTION ~~2933w~~ ^{#(B)} 196.985 [✓] of the statutes is created to read:

4 196.985 ^{stays} Water utility conservation. (1) In this section, "water utility"
5 means a public utility that furnishes water directly or indirectly to the public.

6 (2) The commission shall promulgate rules establishing requirements and
7 procedures for each water utility to do all of the following:

8 (a) Identify goals for reducing per capita water use and communicating the
9 goals to the public.

10 (b) Develop a program that provides monetary and other incentives to water
11 users to reduce water use. The program may include proposed changes in rates that
12 discourage the increased use of water.

1 ✓
2 (c) Develop and implement a demonstration program for reducing water use
3 within water utility buildings. The demonstration program shall include
4 documentation of the water utility's prior water conservation efforts, audits of the
5 water utility's water use, descriptions of opportunities for leak prevention and
6 hardware retrofits, and documentation of water savings achieved through the
7 program.

8 ✓
9 (d) Develop water use profiles and demand forecasts for different classes of
10 customers.

11 ✓
12 (e) Develop a decision support tool incorporating qualitative and quantitative
13 criteria for evaluating, ranking, and selecting water conservation measures that are
14 appropriate for different classes of water customers.

15 ✓
16 (f) Evaluate and design water conservation measures selected under par. (e).
17 For measures that involve water control devices, the designs shall include the types
18 and numbers of devices that are needed, the method for distributing and installing
19 the devices, and the water savings that are anticipated to result from application of
20 the devices.

21 ✓
22 (g) Assess the costs and benefits of the measures selected under par. (e),
23 including water utility cost savings.

24 ✓
25 (h) Establish a schedule for implementing the measures selected under par. (e).

26 (20) The schedule may allow the measures to ^{be} implemented in phases based on factors
27 including the ease of implementation, cost, customer willingness to participate, and
28 the level of anticipated water conservation.

29 ✓
30 (i) Develop and implement a water conservation plan consisting of the actions
31 specified in pars. (a) to (h). The rules shall require a water utility to consult with
32 stakeholder groups and local government officials in developing the plan.

1 (j) Conduct public outreach and educational activities on the plan specified in
2 par. (i). The activities may include distributing information with water bills and at
3 community events, developing public service announcements, and developing
4 programs for broadcast on public access television channels.

5 (k) Conduct an ongoing monitoring program to assess the effectiveness of the
6 plan specified in par. (i) and provide regular reports to the commission and annual
7 reports to the public on the plan's effectiveness. The monitoring program shall
8 address ^{the} impacts [✓] of the plan on the water utility's revenues and the need, if any, for
9 rate adjustments. ~~_____~~

stays

✓
(END)

D-note

**DRAFTER'S NOTE
FROM THE
LEGISLATIVE REFERENCE BUREAU**

LRB-2960/ldn
MDK:.....

Date

bjk
jd
P/dn

Rep. Molepske:

through
pl. seven
pl. nine
① This draft is based on items (a) through (k) on pages 7 to 9 of the Waukesha Water Utility water conservation and protection plan that you provided to me. Note that I made changes to the language included in the plan. ②

Water Conservation and Protection
Please review this draft to make sure it achieves your intent. If you need changes, or if it is okay as drafted, let me know and I will prepare a version that can be introduced.

Mark D. Kunkel
Senior Legislative Attorney
Phone: (608) 266-0131
E-mail: mark.kunkel@legis.wisconsin.gov

**DRAFTER'S NOTE
FROM THE
LEGISLATIVE REFERENCE BUREAU**

LRB-2960/P1dn
MDK:bjk&jld:jf

July 17, 2007

Rep. Molepske:

This draft is based on items (a) through (k) on pages seven to nine of the Waukesha Water Utility *Water Conservation and Protection Plan* that you provided to me. Note that I made changes to the language included in the *Water Conservation and Protection Plan*.

Please review this draft to make sure it achieves your intent. If you need changes, or if it is okay as drafted, let me know and I will prepare a version that can be introduced.

Mark D. Kunkel
Senior Legislative Attorney
Phone: (608) 266-0131
E-mail: mark.kunkel@legis.wisconsin.gov



State of Wisconsin
2007 - 2008 LEGISLATURE

LRB-2960/P1
MDK:jld&bjk/jf

Inserts

stays

PM has been run

PRELIMINARY DRAFT - NOT READY FOR INTRODUCTION

2007 Bill

Thur 10-18 PM

SAV

INSERT 1A

and granting rule-making authority

Planning

1 AN ACT to create 196.985 of the statutes; relating to: water utility conservation
2 requirements

regen.

stays

Analysis by the Legislative Reference Bureau

This is a preliminary draft. An analysis will be provided in a later version. For further information see the state and local fiscal estimate, which will be printed as an appendix to this bill.

fix component

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

SECTION 1. 196.985 of the statutes is created to read:

196.985 Water utility conservation. (1) In this section, "water utility"

means a public utility that furnishes water directly or indirectly to the public.

(2) The commission shall promulgate rules establishing requirements and procedures for each water utility to do all of the following:

(a) Identify goals for reducing per capita water use and communicating the goals to the public.

41 INSERT 1-4 41 (b)

and implement shall

1 (b) Develop a program that provides monetary and other incentives to water
2 users to reduce water use. The program ~~may~~ include proposed changes in rates that
3 discourage the increased use of water.

4 (c) Develop and implement a demonstration program for reducing water use
5 within water utility buildings. The demonstration program shall include
6 documentation of the water utility's prior water conservation efforts, audits of the
7 water utility's water use, descriptions of opportunities for leak prevention and
8 hardware retrofits, and documentation of water savings achieved through the
9 program.

10 (d) Develop water use profiles and demand forecasts for different classes of
11 customers.

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13 criteria for evaluating, ranking, and selecting water conservation measures that are
14 appropriate for different classes of water customers.

15 (f) Evaluate and design water conservation measures selected under par. (e).
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17 and numbers of devices that are needed, the method for distributing and installing
18 the devices, and the water savings that are anticipated to result from application of
19 the devices.

20 (g) Assess the costs and benefits of the measures selected under par. (e),
21 including water utility cost savings.

22 (h) Establish a schedule for implementing the measures selected under par. (e).
23 The schedule may allow the measures to be implemented in phases based on factors
24 including the ease of implementation, cost, customer willingness to participate, and
25 the level of anticipated water conservation.

1 (i) Develop and implement a water conservation plan consisting of the actions
2 specified in pars. (a) to (h). The rules shall require a water utility to consult with
3 stakeholder groups and local government officials in developing the plan.

4 (j) Conduct public outreach and educational activities on the plan specified in
5 par. (i). The activities may include distributing information with water bills and at
6 community events, developing public service announcements, and developing
7 programs for broadcast on public access television channels.

8 (k) Conduct an ongoing monitoring program to assess the effectiveness of the
9 plan specified in par. (i) and provide regular reports to the commission and annual
10 reports to the public on the plan's effectiveness. The monitoring program shall
11 address the impacts of the plan on the water utility's revenues and the need, if any,
12 for rate adjustments.

13

(END) ✓

INSERT 3-12 ✓

bjk

1

INSERT 1A:

This bill requires the Public Service Commission (PSC) to promulgate rules that require water utilities to develop and implement a water conservation plan (plan). In developing the plan, water utilities must do all of the following: 1) identify goals for reducing per capita water use; 2) develop and implement a program that provides monetary and other incentives for reducing water use, including rates discouraging the increased use of water; 3) develop and implement a demonstration program for reducing water use within water utility buildings; 4) develop water use profiles and demand forecasts for different classes of customers; and 5) evaluate, rank, select, and implement water conservation measures that are appropriate for different classes of customers. In addition, the PSC's rules must require water utilities to conduct public outreach and educational activities on the plan, conduct an ongoing monitoring program assessing the plan's effectiveness, and make reports to the PSC and the public on the plan's effectiveness.

The bill also requires the PSC's rules to require water utilities to prepare an environmental assessment before taking any proposed action that affects current or future water supplies. The bill defines "environmental assessment" as a document that does the following: 1) describes the proposed action and the environmental factors that the proposed action affects most directly; 2) evaluates specified environmental effects that would result if the proposed action is taken; and 3) evaluates reasonable alternatives to the proposed action and significant environmental consequences of the alternatives. (The bill's definition is based on a definition promulgated by rule by the PSC for environmental assessments that the PSC itself is required to do for certain proposed actions.) The PSC's rules must also require a water utility to consider the results of the environmental assessment before taking the proposed action.

In addition, the bill imposes requirements on municipalities (i.e., cities, villages, and towns) that operate water utilities. Under the bill, the PSC's rules described above must require a municipality that operates a water utility to prepare an environmental assessment before the municipality takes any proposed action that affects current or future water supplies and consider the results of the environmental assessment before taking the proposed action. Finally, the PSC's rules must also require a municipality that operates a water utility to assess current and future water needs when the municipality engages in planning regarding economic development or land use.

INSERT 1-4:

(a) "Environmental assessment" means, with respect to a proposed action, a document that does all of the following:

1. Describes the purpose and need for the proposed action.

- 1 ✓
2 2. Includes maps, graphs, or other descriptions of the proposed action's location
3 and design. ✓
4 ✓
5 3. Describes those environmental factors that the proposed action affects most
6 directly. ✓
7 ✓
8 4. Evaluates significant positive and negative, short-term and long-term
9 environmental effects that would result if the proposed action is taken, including all
10 of the following: ✓
11 a. Effects on geographically important or scarce resources, such as historic or
12 cultural resources, scenic or recreational resources, prime farmland, threatened or
13 endangered species, and ecologically important areas. ✓
14 b. Conflicts with federal, state, or local plans or policies. ✓
15 c. Significant controversies associated with the proposed action. ✓
16 d. Irreversible environmental effects. ✓
17 e. New environmental effects. ✓
18 f. Unavoidable environmental effects. ✓
19 g. The precedent-setting nature of the proposed action. ✓
20 h. The cumulative effect of the proposed action when combined with other
21 actions and the cumulative effect of repeated actions of the type proposed. ✓
22 i. The foreclosure of future options. ✓
23 j. Direct and indirect environmental effects. ✓
24 k. Other relevant environmental matters. ✓
25 5. Evaluates the reasonable alternatives to the proposed action and significant
26 environmental consequences of the alternatives, including those alternatives that
27 could avoid some or all of the proposed action's adverse environmental effects and the
28 alternative of taking no action. ✓

end of insert 1-4

Ljk

1

2

INSERT 3-12:

3

✓
(L) Prepare an environmental assessment before taking any proposed action that affects current or future water supplies and consider the results of the environmental assessment before taking the proposed action.

4

5

6

✓
(3) The commission's rules under sub. (2) shall also require a municipality that operates a water utility to do all of the following: ✓

7

8

✓
(a) Prepare an environmental assessment before the municipality takes any proposed action that affects current or future water supplies and consider the results of the environmental assessment before taking the proposed action. ✓

10

11

✓
(b) Assess current and future water needs when the municipality engages in planning regarding economic development or land use. ✓

12

end of insert 3-12



Public Service Commission of Wisconsin

Daniel R. Ebert, Chairperson
Mark Meyer, Commissioner
Lauren Azar, Commissioner

610 North Whitney Way
P.O. Box 7854
Madison, WI 53707-7854

January 2, 2008

To: Representative Louis Molepske, Jr.
71st Assembly District

From: Eric Callisto, Executive Assistant
Public Service Commission of Wisconsin

RE: Water Conservation Legislation

changes 2-4
may include illustrative not required
YC 2-11
including all changes "may" include

Thank you for giving the PSC the opportunity to review the initial draft of this water conservation legislation. The overall objectives of this bill - planning, establishing goals, implementing conservation measures, and reporting results - are things that the PSC supports.

3-22

In the last two years the Commission has engaged directly with Wisconsin water utilities to promote water conservation, and we are happy to report that we have made significant progress. This state continues to have an extraordinary water resource, one that is not amenable to uniform regulation in the area of conservation. It has been the Commission's approach to foster conservation where appropriate, while leaving flexibility for other communities to promote their water as a tool of economic development. With that spirit in mind, relevant PSC staff have reviewed the bill and provide the following comments. These comments generally would lead to changes that promote flexibility and reduced costs for the utilities.

4-2

4-5

The Commission is not taking a position on the legislation at this time, but we look forward to working with you and any cosponsors as the bill moves forward. Please feel free to contact me (266-1261), our Assistant Administrator for Water, Dave Sheard (266-9640), or our Water Conservation Coordinator, Jeff Ripp (267-9813) if you have any additional questions.

- The planning, evaluation, and reporting requirements would be costly, especially for small utilities that may need to hire consultants to complete this work. It would be preferable that the bill provide broad guidelines and general criteria for utilities to follow when developing water conservation plans, without listing the specific contents of each plan. The details of what should be included in a plan could be developed in administrative rules.
- Currently, Wisconsin is developing statewide water conservation goals and objectives for the Great Lakes Basin as part of the Great Lakes Compact effort. This bill should be written in a way that provides sufficient flexibility to accommodate any recommendations or requirements that come out of this effort.

§ 1 (2) →

- Some conservation planning requirements already exist in Wisconsin law, including wellhead protection plans and the state revolving loan fund. While these are not comprehensive, this bill should attempt to reconcile any new requirements with requirements in existing law.
- The bill requires utilities to establish per-capita water use goals. While this is one measure of efficiency, it may not provide a good metric for all utilities. It is difficult to measure because the number of people in each home is often unknown. Further, it would be difficult to identify a specific per-capita use goal that is appropriate statewide. The bill should allow flexibility in establishing goals that are tied to specific concerns within each community, such as peak demand, total water use, use by different customer classes, etc.
- The bill requires utilities to develop a decision support tool and to evaluate and implement demand-side conservation and efficiency measures, such as financial incentives for water-saving devices. While these measures may make sense for some communities, not all water conservation measures will be cost-effective for all utilities. The PSC would prefer that utilities have additional flexibility in evaluating conservation options.
- The bill focuses mostly on demand-side conservation measures. However, for some utilities, significant water savings could be achieved through supply-side measures. Existing law already requires utilities to meter all customers and to meet efficiency standards in their distribution and storage systems. The bill should recognize the efforts already underway and include opportunities to meet conservation and efficiency goals through improvements in supply-side efficiency.
- It is not clear what is meant by "rates that discourage the increased use of water". Does this mean that all utilities would have to use inclining block rates? Would uniform and seasonal rates be appropriate in some cases? The rate design should reflect the specific goals of the community and the economics of the utility, rather than a one-size fits all approach. The PSC continues to work with water utilities to set water rates that reflect the cost of providing service to various customer classes while addressing concerns about fairness, affordability, and complexity.
- The bill does not provide a mechanism to enforce the planning requirements. Who will be responsible for reviewing the plans for compliance with the proposed requirements? What are the consequences for non-compliance? Additional resources at the PSC may be needed to verify compliance with the conservation and efficiency planning requirements.
- The bill requires each utility to develop its own program to pay for rebates on water-efficient hardware. This may not be the most efficient way to structure such a program. An alternative may be to develop a program similar to the "Focus on Energy" program

§ 1 (2) (a)

supply side

that is funded by all water users, not just public water utilities. The creation of any such program that dramatically increases water rates would likely be highly controversial.

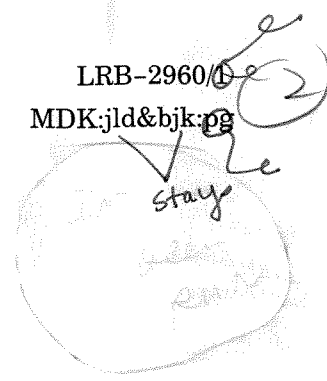
- The PSC does not have jurisdiction over economic development and land use planning. Thus, it may be more appropriate to require another state agency to work with the PSC to develop rules related to water planning as part of larger comprehensive planning efforts.

§1 (3)

- It is not necessary to redefine an environmental assessment in this bill. Existing law establishes criteria for conducting environmental assessments, including water utility activities. For example, construction of new facilities is already subject to environmental review requirements. This provision would create inconsistencies in the manner in which utility actions are reviewed, and place a higher burden on public water utilities.

EJC:AR:pr:\w\cmt\ramirez 2007\Rep Molepske 1-2-08

66.1001 (2) (d) §(e)
cities, villages, some towns
(possibly all towns)
counties
Jan 1, 2010



2007 BILL



SAV

regen. cont.

The rules may require

1 AN ACT to create 196.985 of the statutes; relating to: water utility conservation
2 ~~planning~~ requirements and granting rule-making authority.

Analysis by the Legislative Reference Bureau

This bill requires the Public Service Commission (PSC) to promulgate rules that require water utilities to ~~develop and implement a water conservation plan~~ (plan). ~~In developing the plan,~~ water utilities ~~must~~ do all of the following: 1) identify goals for reducing per capita water use; 2) develop and implement a program that provides monetary and other incentives for reducing water use, ~~including~~ rates discouraging the increased use of water; 3) develop and implement a demonstration program for reducing water use within water utility buildings; 4) develop water use profiles and demand forecasts for different classes of customers; and 5) evaluate, rank, select, and implement water conservation measures that are appropriate for different classes of customers. In addition, the PSC's rules ~~must~~ require water utilities to conduct public outreach and educational activities on the plan, conduct an ongoing monitoring program assessing the plan's effectiveness, and make reports to the PSC and the public on the plan's effectiveness.

The bill also ~~requires~~ the PSC's rules to require water utilities to prepare an environmental assessment before taking any proposed action that affects current or future water supplies. The bill defines "environmental assessment" as a document ~~that does~~ the following: 1) describes the proposed action and the environmental factors that the proposed action affects most directly; 2) evaluates specified environmental effects that would result if the proposed action is taken; and 3) evaluates reasonable alternatives to the proposed action and significant

programs

programs

programs

allows

establish

which may include

may

water conservation program

does any or all of

that assesses environmental impacts of a proposed actions including a document that

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environmental consequences of the alternatives. ~~The bill's definition is based on a definition promulgated by rule by the PSC for environmental assessments that the PSC itself is required to do for certain proposed actions.~~ The PSC's rules ~~must~~ also require a water utility to consider the results of the environmental assessment before taking the proposed action.

In addition, the bill imposes requirements on cities, villages, and towns (municipality) that operate water utilities. ~~Under the bill, the PSC's rules described above must~~ require a municipality that operates a water utility to prepare an environmental assessment before the municipality takes any proposed action that affects current or future water supplies and consider the results of the environmental assessment before taking the proposed action. ~~Finally, the PSC's~~ rules must also require a municipality that operates a water utility to assess current and future water needs when the municipality engages in planning regarding economic development or land use.

For further information see the *state and local* fiscal estimate, which will be printed as an appendix to this bill.

The people of the state of Wisconsin, represented in senate and assembly, do enact as follows:

- 1 **SECTION 1.** 196.985 of the statutes is created to read:
- 2 **196.985 Water utility conservation.** (1) In this section:
- 3 (a) "Environmental assessment" means ~~with respect to~~ a proposed action, a
- 4 document that does all of the following:
- 5 1. Describes the purpose and need for the proposed action.
 - 6 2. Includes maps, graphs, or other descriptions of the proposed action's location
 - 7 and design.
 - 8 3. Describes those environmental factors that the proposed action affects most
 - 9 directly.
 - 10 4. Evaluates significant positive and negative, short-term and long-term
 - 11 environmental effects that would result if the proposed action is taken, ~~including~~ all
 - 12 of the following:

the bill requires the PSC to promulgate rules that

a document that assesses the environmental impacts of

including

Such evaluation may include any or

Environmental assessment may include

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1 a. Effects on geographically important or scarce resources, such as historic or
2 cultural resources, scenic or recreational resources, prime farmland, threatened or
3 endangered species, and ecologically important areas.

4 b. Conflicts with federal, state, or local plans or policies.

5 c. Significant controversies associated with the proposed action.

6 d. Irreversible environmental effects.

7 e. New environmental effects.

8 f. Unavoidable environmental effects.

9 g. The precedent-setting nature of the proposed action.

10 h. The cumulative effect of the proposed action when combined with other
11 actions and the cumulative effect of repeated actions of the type proposed.

12 i. The foreclosure of future options.

13 j. Direct and indirect environmental effects.

14 k. Other relevant environmental matters.

15 5. Evaluates the reasonable alternatives to the proposed action and significant
16 environmental consequences of the alternatives, including those alternatives that
17 could avoid some or all of the proposed action's adverse environmental effects and the
18 alternative of taking no action.

19 (b) "Water utility" means a public utility that furnishes water directly or
20 indirectly to the public.

21 (2) The commission shall promulgate rules ~~establishing~~ requirements and
22 procedures for ~~each~~ water utility to do all of the following: any or

23 (a) Identify goals for reducing per capita water use and communicating the
24 goals to the public.

requiring water utilities to establish water conservation programs

may

The rules may establish

SECTION 1

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1 (b) Develop and implement a program that provides monetary and other
2 incentives to water users to reduce water use. The program ~~shall~~ ^{may} include proposed
3 changes in rates that discourage the increased use of water.

4 (c) Develop and implement a demonstration program for reducing water use
5 within water utility buildings. The demonstration program ~~shall~~ ^{may} include
6 documentation of the water utility's prior water conservation efforts, audits of the
7 water utility's water use, descriptions of opportunities for leak prevention and
8 hardware retrofits, and documentation of water savings achieved through the
9 program.

10 (d) Develop water use profiles and demand forecasts for different classes of
11 customers.

12 (e) Develop a decision support tool incorporating qualitative and quantitative
13 criteria for evaluating, ranking, and selecting water conservation measures that are
14 appropriate for different classes of water customers.

15 (f) Evaluate and design water conservation measures selected under par. (e).
16 For measures that involve water control devices, the designs shall include the types
17 and numbers of devices that are needed, the method for distributing and installing
18 the devices, and the water savings that are anticipated to result from application of
19 the devices.

20 (g) Assess the costs and benefits of the measures selected under par. (e),
21 including water utility cost savings.

22 (h) Establish a schedule for implementing the measures selected under par. (e).
23 The schedule may allow the measures to be implemented in phases based on factors
24 including the ease of implementation, cost, customer willingness to participate, and
25 the level of anticipated water conservation.

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5-13

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^{rules under}
(3) The commission's rules under sub(2) may require a water utility to do any or all of the following

1 (i) Develop and implement a water conservation plan consisting of the actions
2 specified in pars. (a) to (h). The rules shall require a water utility to consult with
3 stakeholder groups and local government officials in developing the plan
4 (b) Conduct public outreach and educational activities on the plan specified in
5 par. (i). The activities may include distributing information with water bills and at
6 community events, developing public service announcements, and developing
7 programs for broadcast on public access television channels.

8 (k) Conduct an ongoing monitoring program to assess the effectiveness of the
9 plan specified in par. (i) and provide regular reports to the commission and annual
10 reports to the public on the plan's effectiveness. The monitoring program shall
11 address the impacts of the plan on the water utility's revenues and the need, if any,
12 for rate adjustments.

13 (l) Prepare an environmental assessment before taking any proposed action
14 that affects current or future water supplies and consider the results of the
15 environmental assessment before taking the proposed action.

16 (3) The commission's rules under sub. (2) shall also require a municipality that
17 operates a water utility to do all of the following:

18 (a) Prepare an environmental assessment before the municipality takes any
19 proposed action that affects current or future water supplies and consider the results
20 of the environmental assessment before taking the proposed action.

21 (b) Assess current and future water needs when the municipality engages in
22 planning regarding economic development or land use.

23 (END)

move to after 4-25

Commission shall promulgate rules that

the water conservation program

following

may

program

Basford, Sarah

From: McKinny, Chris

Sent: Monday, February 18, 2008 5:00 PM

To: LRB.Legal

Subject: Draft Review: LRB 07-2960/2 Topic: Water utility conservation requirements

Thank you!

Please Jacket LRB 07-2960/2 for the ASSEMBLY.

02/19/2008