

## **Preliminary Inventory of Existing Wisconsin Water Conservation and Efficiency Program Elements**

### **BACKGROUND**

Wisconsin law regulates the withdrawal, distribution, treatment, use, and disposal of water. Several state agencies have implemented voluntary and mandatory water conservation and efficiency measures using existing authorities.

### **PURPOSE**

This inventory identifies existing program elements within the Departments of Natural Resources (DNR) and Commerce (COMM), and the Public Service Commission (PSC) that should be considered as part of Wisconsin's water conservation and efficiency efforts.

### **SUMMARY OF PROGRAM ELEMENTS**

#### **Planning**

Wellhead Protection Program. A wellhead protection plan, that includes a water conservation program, is required on all new municipal wells. The conservation program can be mandatory or voluntary, and the types of practices or activities that must be included are not specified. DNR guidance suggests promoting water saving fixtures, conducting water loss surveys, and enacting ordinances restricting outdoor water use.

Reference: NR 811.16(5), Wis. Adm. Code  
Agency: DNR

Stormwater Planning. DNR, in consultation with the COMM, is required to establish a state storm water management plan. The purpose of the plan is to promote the efficient use, conservation, development and protection of this state's groundwater, surface water, soil and related resources while encouraging economic growth.

Reference: 281.33, Wis. Stats.; NR 216  
Agencies: DNR, COMM

Safe Drinking Water Loan Program. Funds provided under this program can be used to develop water conservation plans, water rates, and water system ordinances. As a condition of receiving assistance under the safe drinking water loan program, municipalities are required to develop and adopt a water conservation program, as specified by DNR. Neither statute nor rule specify the measures that should be included as part of the water conservation program.

Reference: 281.61(8m), Wis. Stats.; NR 166.07, Wis. Adm. Code  
Agency: DNR

Clean Water Loan Program. Funds provided under this program can be used for wastewater conservation.

Reference: 281.58(14)(5), Wis. Stats..  
Agency: DNR

Groundwater Management Areas. No conservation requirements currently exist in statute or rule.

Reference: 281.34(9), Wis. Stats.; NR 820.20, Wis. Adm. Code  
Agency: DNR

Construction Approval. Public water utilities and combined water and sewer utilities are required to obtain a PSC certificate of convenience and necessity before constructing, acquiring, or operating certain types of plants, including wells, other sources of supply, pumping stations, treatment facilities, storage facilities, and buildings. Although current practices do not require or include an evaluation of the extent to which proposed construction could be avoided through conservation measures, one of the factors that must be considered as part of PSC’s review is whether the proposed projects would “provide facilities unreasonably in excess of the probable future requirements.”

Reference: 196.49(3), Wis. Stats.; PSC 184, Wis. Adm. Code  
Agency: PSC

## **Water Use Regulation**

High Capacity Wells. Construction, reconstruction, and operation of a high capacity well or a dewatering well requires approval by the DNR. DNR may place conditions on its approval restricting the location, depth, pumping capacity, or rate of flow of the well to avoid impairing the water supply of a public utility.

Reference: 281.34(5), Wis. Stats.; NR 812.09(4), Wis. Adm. Code  
Agency: DNR

Groundwater Protection Areas and Springs. DNR may place conditions on the approval of a high capacity well located near a spring or within 1,200 feet of an outstanding resource water, exceptional resource water, or a trout stream to ensure that the well will not have a significant environmental impact. These conditions may include but are not limited to location of the well, depth of the lower drillhole, depth interval of the well screen, pumping capacity, pumpage schedule, months of operation, rate of flow, ultimate use, and conservation measures.

Reference: 281.34(5), Wis. Stats.; NR 820.30, NR 820.31 Wis. Adm. Code  
Agency: DNR

Surface Water Withdrawals. Permits are required for withdrawals from a stream for the purpose of maintaining the normal level of a navigable water body or for agriculture or irrigation. Permits are also required for any withdrawal from a stream or lake for any purpose that results in a loss of more than 2,000,000 gallons per day in any 30-day period. DNR must specify on each permit issued the quantity of water that may be diverted and the times during which water may be diverted.

Reference: 30.18, Wis. Stats.  
Agency: DNR

Withdrawals Resulting in Water Loss or Interbasin Diversion. New or increased withdrawals from the waters of the state resulting in water loss averaging more than 2,000,000 gallons per day in any 30-day period require approval by DNR. Applicants are required to demonstrate that their current water use and proposed new or increased water use incorporates reasonable conservation practices. For withdrawals that result in an interbasin transfer of surface water, applicants must demonstrate that they have implemented measures to manage and conserve existing water resources and that further use of existing water resources would be impracticable or would have substantial adverse economic, social, or environmental impacts.

Reference: 281.35, Wis. Stats.; NR 142.06, Wis. Adm. Code  
Agency: DNR

## **Metering**

High Capacity Wells. DNR may require high capacity well owners to measure and calibrate the static and pumping well water levels and to report this information monthly.

Reference: NR 812.39(2), Wis. Adm. Code  
Agency: DNR

Public Water Supplies. All public water supplies, except other-than-municipal water systems having source capacity less than 70 gallons per minute, are required to install a water meter at each source to accurately measure the daily quantity of water pumped or delivered. Metering is also required for all community water systems utilizing chemical addition.

Reference: NR 811.11(4), Wis. Adm. Code  
Agency: DNR

Public Water Utilities. Public water utilities are required to meter all water sold or consumed, except for water used for fire protection, street or sewer flushing, construction, or similar purposes where metering is not practical. For these uses, the amount of water consumed may be estimated.

Reference: PSC 185.31, Wis. Adm. Code

Agency: PSC

Meter Testing and Replacement. PSC establishes meter accuracy requirements, procedures for meter testing and replacement, and minimum frequencies for meter testing for public water utilities. Utilities are required to keep records of meter testing results.

Reference: PSC 185.61, 185.71, and 185.76, Wis. Adm. Code  
Agency: PSC

## **Water Use Reporting**

Community Water Systems. Municipal water systems are required to report monthly the quantity of water pumped each day. Other-than-municipal water systems having a groundwater source capacity exceeding 70 gallons per minute are required to report monthly the quantity of water pumped each month and static and pumping groundwater depth measurements.

Reference: NR 811.05(2), Wis. Adm. Code  
Agency: DNR

High Capacity Well Reporting. Wells owners pumping more than 100,000 gallons of groundwater per day from all wells on their property are required to report monthly pumping statistics to DNR on an annual basis.

Reference: 281.34(5) and (6), Wis. Stats.; NR 820.13, Wis. Adm. Code  
Agency: DNR

Withdrawal Registration and Reporting. Any person withdrawing an average of more than 100,000 gallons per day in any 30-day period is required to register that withdrawal with DNR. The registration must specify the source of the withdrawal, the location of discharge or return flow, and the location and nature of the water use. In addition, any person that is required to register their withdrawal is also required to annually report the actual or estimated average annual and monthly volumes and rates of withdrawal and the actual or estimated average annual and monthly volumes and rates of water loss resulting from the withdrawal. This requirement applies to any withdrawal from the “waters of the state”, which includes both surface water and groundwater.

Reference: 30.18, Wis. Stats.; NR 142.03, Wis. Adm. Code  
Agency: DNR

Public Water Utilities. Public water utilities are required to keep records of the amount of water pumped into the distribution system each day from each station. This information is reported to the PSC as monthly totals as part of the annual reporting process. Also, utilities are required to report the volume of water sold by customer class (e.g., industrial, commercial, residential, public authority) as well as an estimate of the amount of water

used for utility operations such as main and hydrant flushing. Utilities that withdraw water from the Great Lakes are also required to report this information to DNR.

Reference: PSC 185.44, Wis. Adm. Code  
Agency: PSC

### Efficiency/Water Loss

Plumbing Code Requirements. The Wisconsin Uniform Plumbing Code establishes standards for all plumbing within the state. These standards require that lavatory faucets, showerheads, urinals, urinal flushing devices, water closets, and water closet flushing devices not exceed the maximum flow rates summarized in Table 1. In addition, COMM requires that plumbing systems be designed and adjusted to use the minimum quantity of water consistent with proper performance and cleaning.

**Table 1**

Standards(maximum flow rates) for Water Conserving Fixtures\*  
Wisconsin Department of Commerce

<b>Fixture Type</b>	<b>Wisconsin Standard</b>	<b>ASME<sup>+</sup> Standard</b>
Lavatory faucet	3.0 gpm	2.2 gpm
Public lavatory faucet	3.0 gpm	0.5 gpm
Metering faucet		0.25 gal/cycle
Sink faucet	3.0 gpm	2.2 gpm
Shower head	3.0 gpm	2.5 gpm
Bath/shower		
Service sink		4.0 gpm
Lawn and sediment		4.0 gpm
Laundry tray		4.0 gpm
Water closet (except blowout type)	4.0 gal/flush	1.6 gal/flush
Water closet (blowout type)	4.0 gal/flush	3.5 gal/flush
Urinals	1.5 gal/flush	1.0 gal/flush

\*At 80 p.s.i.g.

<sup>+</sup> American Society of Mechanical Engineers

Reference: COMM 81 – 87, Wis. Adm. Code  
Agency: COMM

Water Accounting and Loss Control. Public water utilities are required to minimize system losses and to keep records of the volume of water pumped and sold. Unaccounted for water (e.g., leaks, meter inaccuracies, theft) must be less than 25 percent of total pumpage for Class C and D utilities and less than 15 percent of total pumpage for Class AB utilities.

Reference: PSC 185.85, Wis. Adm. Code  
Agency: PSC

Pressure Management. PSC establishes standards of pressure for public water utilities. Under normal conditions, the pressure at the residential fixture cannot be less than 20 p.s.i.g and the pressure at the customer meter cannot exceed 125 p.s.i.g. Water loss caused by leaks from distribution and storage facilities may be minimized by reducing excessive pressures.

Reference: PSC 185.82, Wis. Adm. Code  
Agency: PSC

### **Pricing/Water Rates**

Billing. Water charges must be based on meter readings. Readings can occur monthly, bimonthly, quarterly, or for other periods authorized by law. Utilities are required to provide at least one year of consumption information upon customer request.

Reference: PSC 185.32, Wis. Adm. Code  
Agency: PSC

Water Rates. PSC is authorized to establish reasonable and just rates for water service that allow the utility to furnish reasonably adequate service. Current law does not require PSC or water utilities to consider conservation and efficiency as part of the rate-setting process. However, PSC can approve rates that are intended to promote conservation and efficiency as long as the rates are deemed to be just and reasonable under existing procedures.

Reference: Ch. 196, Wis. Stats.  
Agency: PSC

### **Reuse and Recycling**

Wastewater Permits. Wastewater reuse is not specifically addressed under Wisconsin law. However, industrial and domestic wastewater can be applied to fields under a Wisconsin Pollutant Discharge Elimination System permit, which indirectly allows for the reuse of wastewater for irrigation.

Reference: NR 110, NR 113, NR 206, NR 214, and NR 243 Wis. Adm. Code  
Agency: DNR

Graywater Reuse and Stormwater Harvesting. Since 2003, COMM has recognized and encouraged graywater reuse and stormwater harvesting by enacting changes to the plumbing code. In general, the reuse of blackwater (wastewater from toilet and urinal flushing) is prohibited because of public health concerns.

Reference: 82.10 and 82.34, Wis. Adm. Code  
Agency: COMM

Labeling. Systems that convey non-potable water, such as treated wastewater for reuse, must be properly labeled.

Reference: 82.40(3)(d), Wis. Adm. Code  
Agency: COMM

Plan Review. Plumbing plan review is required for any system that is intended to infiltrate stormwater, harvest rainwater for use, or reuse wastewater. COMM's website contains a "Plumbing Product Register" that lists approved devices and systems for these purposes.

Reference: 82.20, Wis. Adm. Code  
Agency: Commerce

Underground Injection Control. Construction or use of a well to store or dispose of storm water runoff directly into groundwater is prohibited under the Underground Injection Control (UIC) program. Under the UIC program, construction or use of a subsurface fluid distribution system for dispersal of storm water runoff into unsaturated material overlying the uppermost underground source of drinking water shall be done in a manner that complies with the groundwater standards in [Ch. NR 140](#), Wis. Adm. Code, complies with the requirements of Ch. COMM 82, Wis. Adm. Code, and does not result in the endangerment of an underground source of drinking water.

Reference: NR 815, Wis. Adm. Code; COMM 82, Wis. Adm., Code  
Agency: DNR, COMM

## **Education and Outreach**

COMM's Division of Safety and Buildings conducts training sessions on various plumbing-related topics and has created publications that are available on COMM's website.

PSC conducts outreach and training to public utilities related to rate-setting, improving efficiency of operations, and reducing water losses from distribution systems. PSC has also created pages on its website that provides information to utilities and public on water conservation practices, with links to additional information.

DNR conducts a variety of education programs to help people of all ages understand and appreciate our state's natural resources. Water-specific efforts include Project WET, groundwater model teacher workshops, groundwater study guide, lake monitoring, and water action volunteers. Multiple publications are available on the DNR website along with information for ordering hard copies where available.

## Miscellaneous

Stormwater Infiltration. New residential and non-residential construction that disturbs more than one acre is required to incorporate measures designed to infiltrate stormwater. The purpose of this requirement is to limit runoff, recharge groundwater supplies, and improve surface water quality.

Reference: NR 151.12(5), Wis. Adm. Code  
Agency: DNR

Water Quality Standards. State wetland water quality standards require the maintenance of dry season stream flow and groundwater flow into, out of and through wetlands. These standards apply to any project requiring a permit that may impact water quality or wetlands.

Reference: NR 103.3(1)(b), Wis. Adm. Code  
Agency: DNR

Green Tier. Green Tier provides participating businesses with flexibility to improve environmental performance while boosting productivity, cutting costs, and growing their business. Participants receive streamlined environmental requirements, regulatory flexibility, lower transaction costs, shared responsibility for environmental performance, and public recognition.

Reference: 299.83, 299.85, Wis. Stats.  
Agency: DNR

Focus on Energy. This program works with eligible Wisconsin residents and businesses to install cost effective energy efficiency and renewable energy projects. Focus on Energy's projects include efforts to achieve energy savings through reduced residential hot water use and improved industrial and commercial water use efficiency. This includes working with water and wastewater utilities to improve efficiency of their pumps, motors, and processes.

Reference: 25.96, Wis. Stats.  
Agency: PSC

WaterSense Program. PSC has joined EPA's WaterSense program as a promotional partner. In this role, PSC will encourage public water utilities to join the partnership to promote water efficiency. The program is voluntary and identifies water saving products and services that meet efficiency and performance standards. PSC can use the WaterSense program logo on its information and educational materials.

Reference: None  
Agency: PSC