

Chapter 1 – INTRODUCTION

PURPOSE OF THE REPORT

The Groundwater Coordinating Council (GCC) is required by s. 15.347, Wis. Stats., to prepare a report which "summarizes the operations and activities of the council..., describes the state of the groundwater resource and its management and sets forth the recommendations of the council. The annual report shall include a description of the current groundwater quality of the state, an assessment of groundwater management programs, information on the implementation of ch. 160, Wis. Stats., and a list and description of current and anticipated groundwater problems." This report is due each August. The purpose of this report is to fulfill this requirement for fiscal year 2009 (FY 09).

The activities of the Council and its subcommittees, including coordination of groundwater monitoring and research programs, are described in the chapter titled *Groundwater Coordination*. The chapter *Summary of Agency Groundwater Activities* describes groundwater management programs and implementation of ch. 160, Wis. Stats., by the individual state agencies in FY 09. *Condition of the Groundwater Resource* provides an assessment of Wisconsin's groundwater quality and quantity, as well as current and anticipated groundwater problems. The *Benefits from Monitoring and Research Projects* chapter describes how research and monitoring findings are used to better manage groundwater resources in Wisconsin. The recommendations of the Council are contained in *Directions for Future Groundwater Protection*.

SUMMARY OF WISCONSIN'S GROUNDWATER LEGISLATION

1983 Wisconsin Act 410, Wisconsin's Comprehensive Groundwater Protection Act

Wisconsin has a long history of groundwater protection. The first major milestone in this effort was adoption and implementation of 1983 Wisconsin Act 410, Wisconsin's Comprehensive Groundwater Protection Act, which was signed into law on May 4, 1984. The law expanded Wisconsin's legal, organizational, and financial capacity for controlling groundwater pollution. 1983 Wisconsin Act 410 created Chapter 160, Wisconsin Statutes, which serves as the backbone of Wisconsin's program. Chapter 160 provides a multi-agency comprehensive regulatory approach, using two-tiered numerical standards, based on the premise that all groundwater aquifers in Wisconsin are entitled to equal protection. There are a number of major components to Wisconsin's groundwater quality protection program:

- 1) Standards: Under chapter 160, Wis. Stats., the Department of Natural Resources (DNR) must establish state groundwater quality standards based on recommendations from the Department of Health Services. Standard setting is a continuing process based on a priority list of substances detected in groundwater or having a high possibility of being detected, established by the DNR in conjunction with other state agencies. The state groundwater standards are contained in chapter NR 140, Wisconsin Administrative Code. For each substance there is an enforcement standard (ES) which determines when a violation has occurred and a preventive action limit (PAL) which is set at a percentage of the ES. The PAL serves as a trigger for possible remedial action.
- 2) Regulatory Programs: Once groundwater quality standards are established, all state agencies must manage their regulatory programs to comply. Each state regulatory agency must promulgate rules to assure that the groundwater standards are met and to require appropriate responses when the standards are not met. The state regulatory agencies are the DNR (waste and materials management, industrial and municipal wastewater, wetlands, remediation and

redevelopment, and drinking water and groundwater); the Department of Commerce (private sewage systems, petroleum product storage tanks and petroleum environmental clean-up fund); the Department of Agriculture, Trade and Consumer Protection (DATCP) (pesticide use and storage, fertilizer storage, and agrichemical clean up program and fund); and the Department of Transportation (DOT) (salt storage).

- 3) Aquifer Classification: One of the most important features of Wisconsin's groundwater law is an item that was intentionally omitted. When Wisconsin was debating the groundwater protection legislation, the U. S. EPA tried to develop a nationwide groundwater approach. A keystone of EPA's proposal was aquifer classification - each aquifer would be classified according to its potential use, value or vulnerability, and then would be protected to that classification level. Some aquifers would not be entitled to protection and might never again be usable for human water supply. Wisconsin said "no" to aquifer classification. The philosophical underpinning of Wisconsin's groundwater law is the belief that all groundwater in Wisconsin must be protected equally to assure that it can be used for people to drink today and in the future.
- 4) Monitoring and Data Management: At the time the groundwater legislation was created, there was concern that Wisconsin needed a groundwater monitoring program to determine whether the groundwater standards were being met. Therefore, a groundwater monitoring program was created under s. 160.27, Wis. Stats. Money from the Groundwater Account of the Environmental Fund has been used for problem-assessment monitoring, regulatory monitoring, at-risk monitoring, and management-practice monitoring, as well as establishment of a data management system for collection and management of the groundwater data.
- 5) Research: Although all state agencies must comply with the groundwater standards, the processes by which groundwater becomes contaminated, the technology for cleanup, the mechanisms to prevent contamination, and the environmental and health effects of the contamination are often not well understood. In addition, the basic data on geology, soils, and groundwater hydrology is often not available. The UWS and the state agencies have recognized that additional efforts in these research areas are badly needed. The Governor and the Legislature included a groundwater research appropriation for the UWS beginning with the 1989-1991 biennial budget. Since 1992, the UWS, DATCP, DNR and Commerce have participated in a joint solicitation for groundwater-related research and monitoring proposals.
- 6) Coordination: In establishing the groundwater law, the Legislature recognized that management of the state's groundwater resources was a responsibility divided among a number of state agencies. Therefore, the GCC was created to advise and assist state agencies in the coordination of non-regulatory programs and the exchange of information related to groundwater. The Council has been meeting since 1984.
- 7) Local Groundwater Management: The Groundwater Protection Act clarified the powers and responsibilities of local governments to protect groundwater in partnership and consistent with state law.
 - a. Zoning authority for cities, villages, towns and counties was expanded to "encourage the protection of groundwater."
 - b. Counties can adopt ordinances regulating disposal of septage on land (consistent with DNR requirements); cities, villages, or towns may do so, if the county does not. There is limited authority under NR 151 for adoption of local restrictions on land application of

manure and waste.

- c. Counties can regulate (under DNR supervision) well construction and pump installation for certain private wells.
- d. Property assessors must consider the time and expense of repairing or replacing a contaminated well or water supply when assessing the market value of real property; they must consider the "environmental impairment" of the property value due to the presence of a solid or hazardous waste disposal facility.

Wisconsin's Groundwater Protection Act, 2003 Wisconsin Act 310

After several years of discussion on groundwater quantity issues in the state, and as the result of bipartisan effort and support in the legislature, significant groundwater quantity legislation was passed in both houses of the legislature in March of 2004. On Earth Day, April 22, 2004, Governor Doyle signed the new groundwater protection law, 2003 Wisconsin Act 310, expanding the State's authority to consider environmental impacts of high capacity wells and establishing a framework for addressing water quantity issues in rapidly growing areas of the state. This legislation recognizes the link between surface water and groundwater, and the impact wells may have on groundwater quality and quantity.

The DNR received appropriations and positions to administer the new legislation in the 2005-2007 biennial budget and subsequently hired five staff in late-FY 06. These staff began implementing the new programs created by the law including well notification and fee collection, pumpage reporting, high-capacity well application review, data management, inspections, staff support for the Groundwater Advisory Committee (GAC), and development of a new administrative rule. The rule, Ch. NR 820, formally defines the extent of Groundwater Management Areas as required by Act 310 and also creates a mechanism for evaluating proposed high capacity wells to determine whether the well will have a significant environmental impact on springs, trout streams, outstanding and exceptional resource waters.

Major components of 2003 Wisconsin Act 310 include:

1) *Tracking well construction and water use.* As of May 1st, 2005, well owners are required to obtain prior approval for construction of high capacity wells (those that pump more than 100,000 gallons per day), must pay an application fee of \$500, and submit an annual pumping report to DNR. For any new well that is not a high capacity well, the owner must notify DNR of the well location prior to construction and pay a fee of \$50. The fees directly support the administration of this Act, including tracking well construction, review of high capacity well applications, and collection of groundwater data. In addition, fees support increased inspections and enforcement of well construction activities, further helping to ensure a safe drinking water supply. The law requires all high capacity well owners to report water use on an annual basis, including those wells with approvals issued before enactment of the law. Collection of pumping data will assist in evaluating proposed new wells, monitoring approval conditions, identifying trends, calibrating groundwater flow models, and improving water use estimates. This will contribute to a better understanding of groundwater resources throughout the state and improve management of the resource.

2) *Expanded regulation of high capacity wells.* The Act directs DNR to consider the environmental impacts (consistent with ch. NR 150, Wis. Adm. Code) associated with high capacity wells in the following situations:

- Wells located in a "groundwater protection area" (an area within 1,200 feet of an Outstanding or Exceptional Resource Water or Trout Stream).

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- Wells that may have a significant environmental impact on a spring with a flow of at least one cubic foot per second for at least 80% of the time.
- Wells where more than 95% of the amount of water withdrawn will be lost from the basin.

In these cases, DNR may deny or limit an approval to assure that these wells do not cause significant environmental impact. There are also protections and exceptions for public water utility wells. For example, the DNR must weigh the public health and safety benefits of a proposed well in a groundwater protection area or near a spring if it is to be used for a public water supply. A municipal water supply well may be located within a GPA or near a spring provided there are no other reasonable locations available and the DNR is able to balance the well's environmental impact and its public health and safety benefits.

3) *Designation of groundwater management areas.* The Act directed the DNR to establish two groundwater management areas, one in Southeastern Wisconsin and another in the Lower Fox River Valley. These designated regions encompass areas where the water level of the deep sandstone aquifer has been drawn down more than 150 feet since pre-development. In the Lower Fox River Valley, this includes Brown County and portions of Outagamie and Calumet Counties, while in Southeastern Wisconsin it includes Waukesha, Kenosha, Racine, Milwaukee, and Ozaukee Counties, and portions of Washington and Walworth Counties.

The intention of the groundwater management area is to encourage a coordinated management strategy among the state, local government units, regional planning commissions, and public and private users of groundwater to address problems caused by over-pumping of the deep aquifer, including increased levels of radium, arsenic and salinity. The DNR will assist local government units and regional planning commissions in those areas as they undertake research and planning related to groundwater management.

4) *Creation of a Groundwater Advisory Committee.* The Act established the Groundwater Advisory Committee (GAC) and directed the GAC to submit two separate reports to the legislature with recommendations regarding:

- management of groundwater within groundwater management areas and any other areas of the state where a coordinated strategy may be needed.
- regulation of proposed wells that are located in groundwater protection areas, that have a water loss of 95 percent or more, or that have a significant environmental impact on a spring;
- adequacy of the definition springs;
- adaptive management approaches;
- potential for the use of general permits; and
- factors to be considered in determining whether a high capacity well causes significant environmental impact.

In 2005, Representatives from the well drilling industry and municipal, environmental, agricultural and industrial interests were appointed by the Governor and Legislature to the GAC. The GAC met regularly from April 2005 through December 2007. The committee issued a report to the Legislature in December, 2006 regarding groundwater management areas (the report is available at: <http://dnr.wi.gov/org/water/dwg/gac/GACFinalReport1206.pdf>). The GAC completed its charge in 2007 with submission of a second report to the Legislature assessing the effectiveness of Act 310. (The report is available at <http://dnr.wi.gov/org/water/dwg/gac/GACFinalReport1207.pdf>). The GAC concluded that Act 310 is working as originally intended as a first step in integrated water management. The GAC, while acknowledging that more work remains to build upon initial improvements in groundwater management provided under Act 310, also recognized that the law has provided an added level of environmental protection for trout streams, outstanding resources waters, exceptional resource

waters and springs. The 2007 report contains extensive recommendations and alternatives for enhancing the effectiveness of Act 310. Pursuant to Act 310, the GAC was terminated at the end of 2007.

The GCC will track progress of the implementation of the law and provide assistance on education, research, monitoring, planning, and data management needs related to the new legislation to help facilitate effective management of groundwater resources in the state.

Great Lakes Compact and 2007 Wisconsin Act 227

In May 2008, Wisconsin ratified the Great Lakes – Saint Lawrence River Basin Water Resources Compact (Compact) and enacted legislation to implement the Compact in the state. By July 8, 2008, all eight Great Lakes states had ratified the Compact through state legislation. On September 23, 2008 the U.S. Congress consented to the states’ ratification, and the President signed Congress’ Consent resolution on October 3, 2008. As a result, the Compact took effect on December 8, 2008 – significantly sooner than expected.

The Compact is the legally binding implementation for the Great Lakes states of the Great Lakes – Saint Lawrence River Basin Water Resources Agreement (Agreement), also signed in December 2005 by the Great Lake states, Ontario and Quebec. The Agreement, a good faith pact among the states and provinces, parallels the Compact, but lacks enforceability because states cannot enter into legally binding treaties with foreign governments.

The Compact addresses water quantity management in the Great Lakes – Saint Lawrence River Basin (Basin). It sets out requirements for Basin water uses in the areas of registration, reporting, management, and water conservation and efficiency. It also prohibits diversions of Basin water with limited exceptions for straddling communities, communities in straddling counties and intrabasin transfers (transfers of water from one Great Lake basin to another).

Under the Compact, states are required to develop a program for management of Basin withdrawals, including both groundwater and surface water withdrawals that relies on a decision making standard for new or increased withdrawals. States are also required to develop and implement a Basin water conservation and efficiency program. These programs will be reviewed by the Regional Body (a Body comprising the governors of the Great Lakes states and the premiers of the Canadian provinces of Quebec and Ontario) on a regular basis. The Compact also calls for the submission of initial withdrawal amounts (or baselines) for water users, annual reports on Basin water use, and periodic assessments of cumulative impacts to the Regional Body.

Wisconsin’s legislation implementing the Compact—2007 Wisconsin Act 227—is extensive.

Registration - Act 227 calls for statewide registration of existing and new water withdrawals with the capacity to withdraw more than 100,000 gallons per day averaged over 30 days.

Reporting – Withdrawals over 100,000 gallons per day averaged over 30 days must be reported annually. Existing state statutes already require this reporting for groundwater withdrawals; however, most surface water withdrawals, other than municipal, are not currently being reported. This requirement applies statewide.

Baseline – An initial withdrawal amount must be determined for all withdrawals existing as of December 8, 2008—the Compact’s effective date. This amount will be the basis for determining if a proposed increase in a withdrawal exceeds the threshold for applying a decision making standard.

Management of Basin Withdrawals (Water Use Permits) –Act 227 directs that Great Lakes Basin withdrawals over 100,000 gallons per day averaged over 30 days require a permit. General permits will be issued for withdrawals of 100,000 gallons per day or more averaged over 30 days. Individual permits will be issued for withdrawals exceeding 1 million gallons per day for 30 consecutive days. Water use permits (both general and individual) establish the authorized withdrawal amount, as well as requirements for reporting and water conservation. General permits have a 25-year term; individual permits have a 10-year term.

Water Conservation and Efficiency –Act 227 requires that the Department develop and implement a water conservation and efficiency program with voluntary measures to apply across the state, additional mandatory elements that apply in the Great Lakes Basin, and the most stringent requirements for communities applying for diversions or water uses with high rates of water loss.

Public Participation –Act 227 requires that a public notice, comment and hearing process be developed as part of the review of all new water use permits and applications for diversions.

Water Supply Service Area Plans – An additional element of the new legislation is the requirement for water supply service area plans. Act 227 requires all municipalities with water supply systems that supply more than 10,000 people to have an approved water supply plan by 2026. This planning process is modeled after the wastewater planning process and uses a cost-effectiveness analysis that assesses the environmental and economic impacts of alternatives in the plan to determine the approach that maximizes environmental benefits and minimizes total resource costs over the planning period.

State Water Use Report –Act 227 also requires the department to develop a statewide water resources inventory and publish a state water use report every five years.