

Water Quantity/Great Lakes Compact Working Group Final Report

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The water quantity working group was challenged with what integrated water management might look like in Wisconsin, including integrating ground and surface water management, as well as monitoring and governance and policy. They recognized that water conservation and efficiency is different across the state, and one-size regulations will not fit all situations and localities. There are different drivers in different places that require different management approaches.

Another operating principle they noted is that the governance of water is most effective and efficient when governance fully engages the expertise, information, intuition, insight, and judgment of the scientific and technical community (whether state, federal, academic, private sector, or other).

The working group identified some themes that emerged from their working group sessions:

- While Wisconsin is water rich, there are localized areas of water stress, such as Central Sands, Fox River Valley, Dane County, SE Wisconsin, NW Wisconsin.
- It is challenging to communicate about water quantity in Wisconsin, which has scenarios of both local water abundance and local scarcity. All pumping impacts are local; all flooding is local.
- Water conservation and efficiency is different all across the state, and one-size regulations will not fit all situations and localities.
- Data collection and information about water quantity and quality is radically improved and continuing to improve.

Looking back to Waters of Wisconsin 2003, the group reviewed progress regarding several recommendations.:

1. The state has made progress “in its commitment to, and capacity for effective water monitoring.” Both Great Lakes water quality monitoring implemented in 2006, and the Great Lakes Water Resources Compact in 2008, have improved the state’s data

collection capacity, including collection methodology, tools, and reporting. The DNR annually collects data on water use and withdrawals, groundwater levels, stream flow, and fish species presence/absence and abundance. The Wisconsin Geological and Natural History Survey collects data on aquifer hydrogeology, all of which improves understanding of waters across the state.

The Water Use Section within the DNR's Bureau of Drinking Water and Groundwater was created in part to implement requirements of the 2008 Great Lakes Compact. This includes:

- Registration and reporting program for high capacity properties with the capacity to withdraw > 100, 000 gallons/day;
- Water Use Permitting in the Great Lakes Basin;
- Water Loss Approvals; and
- Water Conservation and Efficiency program.

In addition, the Water Use Section conducts environmental review for high capacity wells.

Withdrawal report collection was expanded by the DNR in 2009 as a result of the Great Lakes Compact. The results are:

- Registration of all water supply systems (wells and surface water systems) with the capacity to withdraw at least 100,000 gallons per day;
- Mandatory reporting for surface water systems that withdraw at least an average of 100,000 gallons per day in any 30-day period;
- Water Use Reporting response rates have increased each year and are currently at 98% response for 2013;
- Water use fees (first charged in 2011), along with repeated reporting requests, have greatly improved quantity and quality of inventory and reporting data; and
- There are about 6,000 currently registered properties including approximately 14,000 registered sources.

There is now robust baseline data collected on surface use withdrawals and on groundwater use withdrawals which can be compared from year to year.

Additional opportunities for data collection identified by the working group include:

- Aquifer mapping;
- Updated information on springs (three year WGNHS project funded by the DNR started in June 2014);
- Stream gauging and collecting information on headwater streams;
- Lake level monitoring; and
- Ongoing improvements to Groundwater Level Monitoring Network.

2. WOW 2003 stressed the importance of “explor[ing] options for improving coordination of water information within the state and identify[ing] key research and

monitoring needs.” The working groups cited several groups that are fulfilling this mandate:

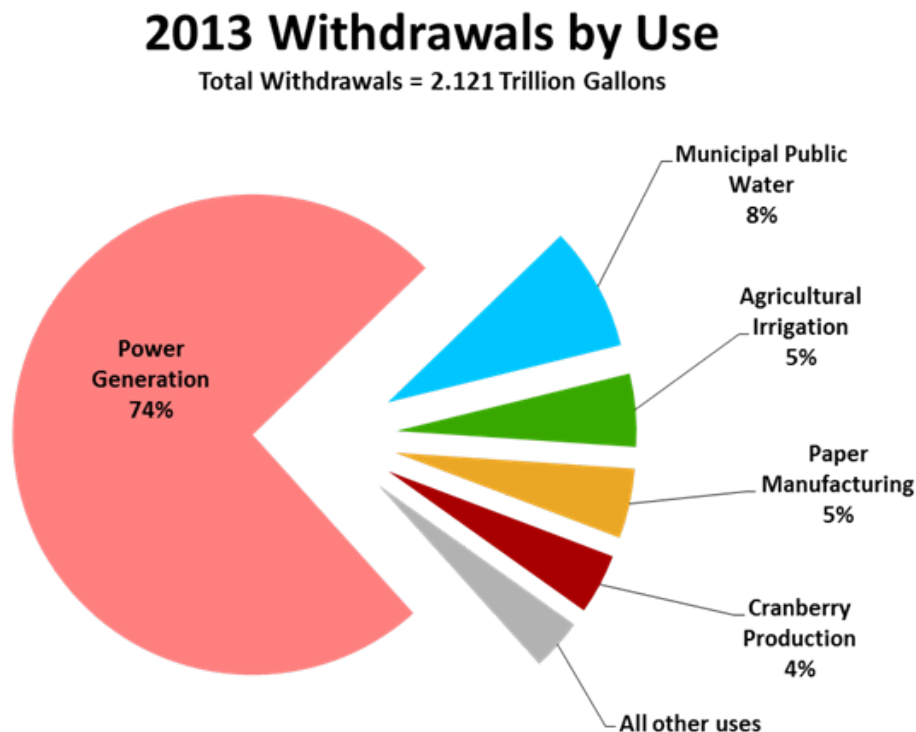
- Groundwater Coordinating Council;
- Lakes Partnership (DNR, Citizen Groups, UW Extension);
- Lake Michigan Partnership; and
- Wisconsin River Water Quality Improvement Project.

3. Another WOW 2003 recommendation was to improve information access, specifically “institutions engaged in gathering and analyzing such information should collaborate in developing a web-based, interactive repository of documented water status and trends” The new Wisconsin DNR Surface Water Data-viewer website (<http://dnr.wi.gov/topic/surfacewater/swdv/>) uses geographic information systems technology to both collect and retrieve water quality and quantity information on watersheds and subwatersheds. A United States Geological Survey website tracks real time and historical observations of streamflows (<http://waterdata.usgs.gov/wi/nwis/sw>).

4. A final WOW 2003 recommendation that the working group looked at was, “to help make information on Wisconsin’s waters more available and useful to educators, state legislators, local officials, and other decision makers, the state of Wisconsin should coordinate and prepare a regular ‘State of Wisconsin’s Waters’ report.”

The group mentioned the following reports that fulfill this purpose:

- DNR’s 2014 Water Quality Report to Congress;
- Starting in 2016, the state’s Clean Water Act section 305(b) report to the EPA; and
- Also starting in 2016, the Five-year Water Use Report that will be required by the Great Lakes Compact.



In addition to noting these areas of progress, the working group compared water quantity laws and policies in Wisconsin, Michigan, and Minnesota.

In Wisconsin, the Department of Natural Resources approves and registers surface and groundwater withdrawals. New groundwater withdrawals over 100,000 gallons per day require both a high capacity well approval and that an annual pumping report be submitted to the DNR. The DNR reviews all high capacity well applications to condition or deny withdrawals that would result in a significant adverse environmental impact on a body of water within the state—including public water supply wells, private wells, lakes, rivers, streams, wetlands, and springs. The DNR may modify or rescind the approval of any high capacity well if the well or its use does not conform to standards or conditions applicable to the approval of the well.

The DNR is authorized to administer a mitigation program for wells of all sizes in groundwater protection areas. Under the program, the DNR may require abandonment or replacement of a well, and may only require mitigation if it can provide funding for the full cost of mitigation, unless abandonment is necessary to protect public health.

Any surface water withdrawals require a DNR permit, except if diverting to maintain a navigable water-body or waterway or diverting for agricultural or irrigation purposes. A separate permit is needed if diversion from any lake or stream results in the loss of over 2,000,000 gallons of water over a person's base amount in any 30-day period.

In addition, Wisconsin is member of the Great Lakes Compact. This agreement requires Wisconsin to provide the other Great Lake state and provinces to notify and provide an opportunity to comment on any application for a new or increased consumptive use of 5,000,000 gallons per day or greater in any 90-day period.

In Michigan, there are reporting and permitting programs for surface and groundwater withdrawals, and the limits of over 7,000 subwatersheds are assessed. Michigan uses an online Water Withdrawal Assessment Tool (WWAT) designed to assess the likelihood of an impact to the state's water resources by a specific large quantity water withdrawal of over 100,000 gallons per day. Agricultural withdrawals are reported to the Michigan Department of Agriculture. All other withdrawals are reported to the Michigan Department of Environmental Quality (MDEQ) along with a reporting fee.

Withdrawals over 2,000,000 gallons per day must be permitted by the MDEQ. If the proposed withdrawal is in a sensitive stream, or the WWAT evaluation indicates there is an increased likelihood of an adverse impact, the user is referred to the MDEQ for a site-specific review. The MDEQ is starting to say no to a few permit requests. In these cases, the user can litigate, or work with other local permittees to negotiate withdrawal levels. This approach is interesting, but is expensive to administer and may not be replicable in Wisconsin.

In Minnesota, a water appropriation permit from the Minnesota Department of Natural Resources (MDNR) is needed to appropriate or use state surface or groundwater for any domestic use serving more than 25 persons and for any other use that exceeds 10,000 gallons in any one day or 1,000,000 gallons in a year. An applicant must pay a permitting fee prescribed by statute. There are separate permits for agricultural, non-agricultural, and general temporary withdrawals. In order to amend or transfer permits, a permit holder must submit a formal request, including an additional fee. The MDNR also administers procedures designed to limit appropriation in certain circumstances: 1) if the proposed withdrawal will have probable interference with public water supplies or private domestic wells, and 2) in times of drought and should conditions warrant, the MDNR may completely suspend surface water appropriation permits. While they do cut off folks during droughts, permits have never been denied – until now. The MDNR is starting to look at this option and is also trying to facilitate local negotiations between users.

The working group did not come to any conclusions about specific policy recommendations, but they did suggest the following:

- An integrated water management policy is a next logical step, one that integrates surface and groundwater, as well as Great Lakes and Mississippi River watershed basins.
- Any governance discussion needs to fully engage the technical community. If the legislation is based on sound science and has full, reliable, technical support, the framework is that much stronger. An adaptive management approach would be best, supported by sound science, robust data collection and ongoing monitoring practices.
- Wisconsin needs to acknowledge water shortages, and look at cumulative impacts of water withdrawals.
- Data collection gaps need to be redressed, specifically for monitoring wells. The state's well monitoring program needs to be funded.
- There is an emerging urgent need for a reinvigoration of public dialogue about water resources around the state.

One final observation:

An abundance of water on or near most Native American reservations has rendered water claims by local indigenous nations within the state's borders (and outside but near the state's borders) rare. However, as surface and ground waters become scarce, we can expect them to make an increasing number of water-related claims. The quantification standard is generally set forth in the U.S. Supreme Court's *Winters* opinion – which ruled that a reservation of a homeland by an indigenous nation – or the U.S. acting on behalf of one – impliedly included a reservation of enough water to fulfill the purposes of the reservation, which in most cases amounts to a permanent homeland. Since the seminal *Winters* case, variables such as irrigable acreage or a fishery quality have influenced the quantification of those rights. As water quantity and quality may decrease, claims for quantification by the local indigenous nations will almost certainly increase. The public record, at least, suggests Wisconsin has done little so far to prepare for this inevitability.