



# Water on the WEB

*To any golf course superintendent the role of water is well defined and critical to almost every daily task. Sometimes it is easy to forget that water is just as important to everyone else, and the same sources we use to get the water required to maintain golf courses is the same that citizens use for drinking water, bathing, and to water their lawns.*

The Chicago area has the great advantage of being situated in close proximity to the fifth largest lake in the world. Lake Michigan has 1,180 cubic miles of water within its basin, by volume it is the second largest lake in the world (All together, the great lakes combined contain 21% of the world's fresh water supply). The proximity of this massive body of water has always given the city of Chicago an understandably cavalier attitude about water. In fact, some 65% of the Chicago homes do not even have water meters installed—they pay a flat fee and use as much water as they like. But things are starting to change. The amount of water that Chicago can take from Lake Michigan is now set by treaty and agreement at 3,200 cubic feet of water per second. Large diversions have to be approved by a long list of shareholders, and communities surrounding Chicago no longer consider their water supplies sufficient forever. This shift in how water is perceived in this region will eventually lead to increased regulation of all water users—including the golf community.



There are volumes of information available on the World Wide Web regarding water use. From water quality monitoring, to water use data, to future consumption plans and conservation efforts, there are reams of information available on the web. The purpose of this article is to give a high level overview of the sources of information available, with emphasis on water use and regulation. The hope is to get you to the trailhead and then let you explore from there. A future article will highlight some of this data and discuss the manner in which the golf industry is portrayed in terms of water use. In reality the golf industry is a low level water user, but unlike some other user groups, the golf industry has a very high percentage of groundwater use. Since the availability of lake water is now limited, groundwater

supplies are under increasing pressure in the area. Some residents view golf as “luxury” use of valuable water. One superintendent I spoke with explained that it is a local city regulation that dictates when and where he waters. Just like politics it seems that water regulation can best be described as a local issue, and many times these regulations consist of nothing more than an “understanding” with local officials. Having a good handle on local water regulation efforts is perhaps the best way to assure that the interests of the golf industry are served.

Although this list is far from comprehensive, hopefully the information herein can give some information and context on local, regional and national water regulation as you confront these issues.

## **ONLINE WATER RESOURCES Federal and International**

USGS (<http://water.usgs.gov>)

The United States Geological Survey is “.....dedicated to the timely, relevant, and impartial study of the landscape, our natural resources, and the natural hazards that threaten us.” The USGS maintains a web-page called “USGS Water Data Discovery” that is an excellent place to begin any water search. It can be found at <http://water.usgs.gov/data/>. Within the USGS are 48 Water Science Centers (WSC) whose mission is to “collect, analyze, and disseminate the impartial hydrologic data and information needed to wisely manage water resources for people of the United States and the State of Illinois.” Each state has its own website wherein their respective WSC posts data related to water quantity and quality (<http://water.usgs.gov/watuse/>).

United States EPA ([www.epa.gov](http://www.epa.gov)) The United States Environmental Protection Agency is primarily responsible for pollution of surface waters. Under the clean water act the EPA

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is charged with "...restoring and maintaining the chemical, physical, and biological integrity of the nations waters so that they can support the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water." ([www.epa.gov/watertrain/cwa/cwa1.htm](http://www.epa.gov/watertrain/cwa/cwa1.htm)) The EPA's primary concern is pollutants entering waterways, and the quality of water within the United States.

*Great Lakes/St. Lawrence River Water Resources Regional Body* ([www.glsregionalbody.org](http://www.glsregionalbody.org)) The Regional Body is a coalition of groups that surround the Great Lakes, and was created by the Great Lakes Governors and Premiers. An agreement called the Great Lakes—St. Lawrence River Basin Sustainable Water Resources Agreement was made and has since been signed into law by all of the governors/premiers surrounding the lake. Each state/province is tasked with implementing the terms of the agreement. A copy of the Illinois report can be found here ([www.glsregionalbody.org/Docs/2009ProgramReports/IL/%20Water%20Conservation%20and%20Efficiency%20Program%20Report.pdf](http://www.glsregionalbody.org/Docs/2009ProgramReports/IL/%20Water%20Conservation%20and%20Efficiency%20Program%20Report.pdf)). Provisions of the Illinois report include limits on large scale diversion of Lake Michigan water (2.1 billion gal/day) as well as more directed water efficiency efforts such as reduced lawn irrigation, high efficiency plumbing in new construction, and etc.

*Great Lakes Commission* ([www.glc.org](http://www.glc.org)) The Great Lakes Commission (GLC) is a group composed of the same members of the Regional Body. The GLC is the older of these two groups, being formed in 1955. The GLC is the repository for the Great Lakes-St. Lawrence River Water Use Database which creates an annual report of water use from the Great Lakes Basin. This report for 2006 can be found at (<http://glc.org/wateruse/database/pdf/2006%20Water%20Use%20Report.pdf>).

*Council of Great Lakes Governors* ([www.cglg.org](http://www.cglg.org)) The Council of Great Lakes Governors is a group of governors of Great Lakes states that was created in 1983 to serve as a "...non-partisan forum to develop regional agreements on issues of common concern." This group is involved in economic development as well as water management, and the protection and restoration of the Great Lakes.

## State

*Illinois Water Supply Planning* ([www.isws.illinois.edu/wsp/](http://www.isws.illinois.edu/wsp/)) The Illinois Water Supply Planning website was created in 2006 as part of the effort by the Illinois Department of Natural Resources to "...lead state and regional water supply planning activities." As a part of that directive Illinois selected two areas for priority planning—northeastern and east central Illinois. This website includes excellent resources on the water cycle as well as plans for water use through 2050.

*Illinois DNR* (<http://dnr.state.il.us>) The Illinois Department of Natural Resources has a broad area of responsibility. The stated responsibility of the Illinois DNR is to "...manage, conserve and protect Illinois' natural, recreational and cultural resources, further the public's understanding and appreciation of those

resources, and promote the education, science and public safety of Illinois' natural resources for present and future generations." One of these areas of oversight is the allocation of water withdrawals from Lake Michigan. There is little on this website in terms of water data.

*Illinois State Water Survey* ([www.isws.illinois.edu](http://www.isws.illinois.edu)) The Water Survey was founded in 1895 as a tool to combat water-borne disease. Its mission has changed over the years, and now is part of the Institute of Natural Resource Sustainability at the University of Illinois using research to "...better understand natural and anthropogenic processes and to provide information to government, businesses, city and county planners, and Illinois citizens." The data tab at the home page has a lot of great data about climate and water in the state.

This website is also home to the center for groundwater science, which includes a special page for northeastern Illinois.

([www.isws.illinois.edu/gws/neillinois.asp](http://www.isws.illinois.edu/gws/neillinois.asp)).

*Chicago Metropolitan Agency for Planning* (formerly Northern Illinois Planning Commission) ([www.cmap.illinois.gov](http://www.cmap.illinois.gov)) CMAP is the official regional planning arm for the northeastern counties of Illinois. This organization has been put in charge of developing a comprehensive plan that will guide the region through the year 2040. A large part of that effort is the GO TO 2040 ([www.nipc.org/environment/waterplan/spwrmformat9-3-02.pdf](http://www.nipc.org/environment/waterplan/spwrmformat9-3-02.pdf)) which is a water use efficiency plan for the region. This plan is used as a template for some of the county plans shown below.

*Illinois EPA* ([www.epa.state.il.us/water/](http://www.epa.state.il.us/water/)) The Illinois EPA, much like the United States EPA is chiefly responsible for the protection of surface and subsurface waters from pollutants. This includes the protection of drinking water sources.

This body provides oversight to reclaimed water irrigators.

*Groundwater Advisory Council* (<http://www.epa.state.il.us/water/groundwater/groundwater-advisory-council.html>) The Groundwater Advisory Council (GAC) is a group of 9 stakeholders appointed by the Governor of Illinois to review, evaluate and make recommendations regarding laws, research, and the implementation of regulations to the state.

Illinois Water Use Report-USGS Estimated ([http://il.water.usgs.gov/pubs/ofr99\\_97.pdf](http://il.water.usgs.gov/pubs/ofr99_97.pdf))

## County/Regional

There is little information on water use strategy or regulation at the county level in most cases. Most of the counties have extensive information on the drinking water they provide their constituents and little else. In contrast, the following counties have extensive plans for water use well into the future.

*Lake County* ([www.lakecountyil.gov](http://www.lakecountyil.gov)) There are many water information sources on the Lake County website including a document entitled "The State of Lake County's Water Supply". It describes the history of water law in this area of Michigan both for groundwater and surface water sources. The report is

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an excellent starting point for anyone looking at northeastern Illinois water law. Lake County's plan for future water use is particularly good.

**McHenry County** ([www.co.mchenry.il.us](http://www.co.mchenry.il.us)) McHenry County has a master plan for the future called the "2030 Plan." This is another excellent document that covers very well both water usage and water quality plans for the next 20 years.

**Kane County** (<http://www.isws.illinois.edu/gws/kaneco/kaneco.asp>) this is a site set up by the USGS that has the publications regarding water use planning for Kane County.

## Other

**Ground Water Protection Council** ([www.gwpc.org](http://www.gwpc.org)) The Ground Water Protection Council (GWPC) is a national group composed of state agencies and other stakeholders in groundwater protection. Its expressed goal is to "...promote the protection and conservation of groundwater resources for all beneficial uses." Within the site there is a groundwater fact sheet that provides good basic information on the groundwater situation within that state.

**Chicago Environmental Network** ([www.chicagoenvironment.org](http://www.chicagoenvironment.org)) This is a group of environmental organizations that covers many aspects of environmental advocacy in the Chicago region. It includes an excellent alphabetized member list. Many of these organizations include some water advocacy within their platforms. Several of them are organized around regions, discrete watersheds, or conservation areas.

**The Groundwater Foundation** ([www.groundwater.org](http://www.groundwater.org)) The Groundwater Foundation is an organization that "educates

people and inspires action to ensure sustainable, clean groundwater for future generations." Interestingly, the Groundwater Foundation has a groundwater stewardship program that specifically targets highly maintained areas, such as golf courses. After participation in this program, golf courses and other highly maintained landscapes can be recognized as "Groundwater Guardians." Many of the requirements are things superintendents already do each day. Information can be found at [www.groundwater.org/gg/greensites.html](http://www.groundwater.org/gg/greensites.html).

**The Upper Des Plaines River Ecosystem Partnership** ([www.upperdesplainesriver.org](http://www.upperdesplainesriver.org)) The Upper Des Plaines River Ecosystem Partnership is a non-profit organization similar to other environmental organizations in the area. The site is notable for the extensive list of area organizations that are dedicated to environmental conservation as well as its advocacy of the Des Plaines watershed that services parts of at least 74 local communities. The list of these organizations can be found at ([www.upperdesplainesriver.org/links.htm](http://www.upperdesplainesriver.org/links.htm)).

In a future article the data contained within some of these websites will be discussed; however, the real take home message found within these websites is this: The amount of water Illinois can take from the lake is limited by law and treaty, the sustainable amount of deep groundwater is limited, and the population of the region and subsequent water demand is forecasted to continue to rise. Some future demand may be met by further diverting surface flows, but even the amount available from those sources is limited. Sooner or later the amount of water available for irrigation will be limited and the more prepared this industry is for that day the better off it will be. **-OC**

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