Industrial Water Stewardship – Creating a Positive Impact in the Great Lakes Region

How does an industrial facility know it is being responsible in its use of water?

It is a straightforward question that needs to be addressed differently across the country and in our many varied ecosystems. As we in the Great Lakes region are sitting next to more than 80% of the freshwater in North America, the heart of the answer lies somewhere outside the widely-used parameters of volumetric evaluation.

It is a different reality that industries and the Great Lakes are facing, and greater insights are needed.

To better understand the relationship between the water stewardship tools available to industries and their applicability to the Great Lakes region, the Great Lakes Protection Fund has invested in a series of projects led by the Council of Great Lakes Industries (CGLI), a bi-national industry association based in Ann Arbor, MI that is committed to sustainable development in the Great Lakes region. The current project is being led by CGLI President Kathryn Buckner and CGLI Projects Director Dale Phenicie.

Beyond volumetric water footprinting, this series of projects focuses on responsible access and use of water, our region's most valuable natural resources.

"The Great Lakes economy has been built on industry that relies on natural resources," Buckner explains. "Industrial production grew in the Great Lakes region over the last 150 years because this is such a natural resource-rich area. One of CGLI's core interest areas is making sure that all members of the Great Lakes community—industrial, commercial, residential, and other—have access to Great Lakes water resources. So in this project, we are thinking about how industry can use water to make things

people need while protecting the resource – in other words, how industry can use Great Lakes water resources sustainably."

In Search of the Ideal "Toolkit"

At the crux of this work is the need for a toolkit that can help assess water usage practices, demonstrate effective measures within these practices, and ultimately evaluate the impact of industrial water use.

To that end, Phase 1, titled *Optimizing Industry Water Use,* was a planning phase in which the team took inventory and assessed the available techniques and tools for evaluating water stewardship in the region. The tools, mostly developed and tested in water scarce regions, were evaluated for their potential to perform in a water rich region. This first phase helped refine the thinking around water stewardship in the Great Lakes and ultimately moved the team towards a focus on the impact of water withdrawals, not just the volume.

In Phase 2, the team evaluated 19 global water stewardship tools. The findings of Phase 2 revealed that many of the tools offered potential value for industries seeking to demonstrate good water stewardship practices, but the question still remained – could these tools be adapted to work in the Great Lakes?

With a number of parameters to consider, two of the prominent factors that make the Great Lakes region uniquely different from other regions are:

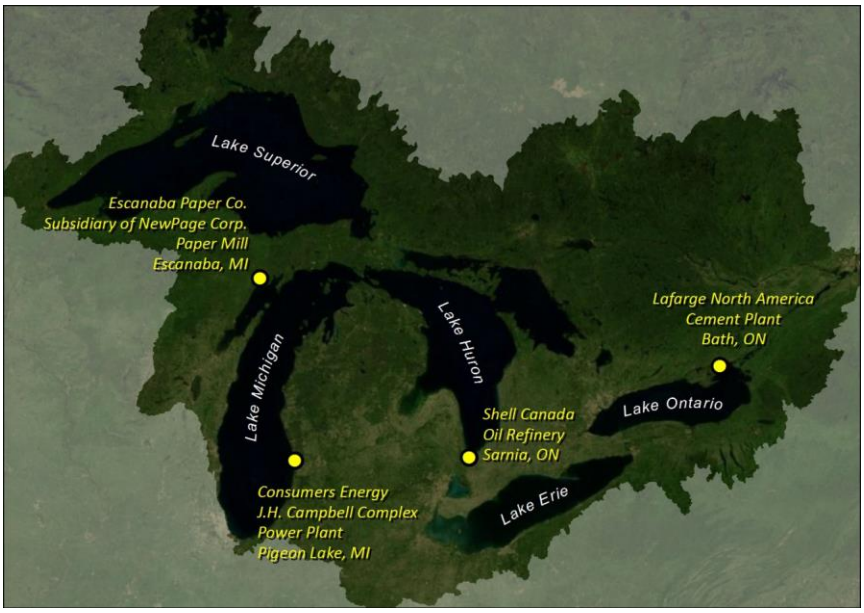
1) The Great Lakes has **an abundance of water**. The problem? The traditional, volumetric parameters for water scarcity are the basis for most water stewardship tools. In the Great Lakes region, it will be necessary to evaluate timing as the driving metric for scarcity. The question must be raised as to whether the current tools are a good fit for the challenge at hand.

2) Many of the tools available were developed for regions without **stable water governance and regulation**, including regions in which governments are unstable or lack water regulatory programs.

By drawing in these two factors of water abundance and water governance, the project team was able to define just how relevant those tools really were to the challenges of the Great Lakes region.

The finding? Though all of the tools had their advantages, *not one tool evaluated by the project team during Phase 2 was deemed fully suitable to use in the Great Lakes.* None of them could address the full array of factors that could completely tell a company operating in the Great Lakes region if they were good water stewards.

Among other factors, the tools overlooked the fact that in water rich regions it is the **movement of water over the land**, not the amount of water, that is the driver for water management.



Pilot sites.

Without a single tool for identifying solid water stewardship and assessing water sustainability performance, the team embarked on a first-of-its-kind pilot application of multiple water stewardship tools at the same site. Five tools were piloted at each of four sites to test how well these tools characterized use; treated recycling, reuse and conservation; and compared with Great Lakes Compact/Agreement decision-making standards.

Where to Go From Here?

In Phase 3, the team is working to develop a toolkit suitable for use in the basin. They will also pilot this toolkit in parallel with a standard and performance verification program. This program—the Alliance of Water Stewardship's (AWS) International Water Stewardship Standard—is a globally-consistent framework that outlines the expectations of responsible water stewardship.

The team has established a hybrid approach to field testing at Great Lakes facilities that allows simultaneous evaluation of tool metrics and the AWS standard. Just as they had done before in the previous phase, the project team is looking at the applicability of the AWS standard to the Great Lakes region and its practicality for industries that are heavy users of water.

Within this framework, the project team prepared to test the tools and the AWS standard in five different facilities. The companies participating in the pilot test were large corporations, including an oil refinery, two pulp and paper facilities, a cement plant, and an electric power generating facility.

Where We Are Today

At this point, the team has finished pilot testing the AWS standard. They are collecting data gleaned from the pilot tests and are evaluating next steps. Similar to their findings from Phase 2, the team is confident that the simplifying assumptions that were built into the standard to make it work globally do not work well for the Great Lakes.

For CGLI, however, the end of the road won't come in finding a workable standard and toolkit for the region. In fact, it may be the beginning of an entirely new phase of **implementation.**

"We are beginning to think about the next question: What is the business case for applying industrial water stewardship tools in the Great Lakes region and what obstacles, challenges and incentives drive industrial water stewardship," says Buckner.

That's why the team is beginning the task of understanding the conceptual drivers for applying industrial water stewardship tools in the Great Lakes region. One thing that seems clear from this work so far is that the more a company understands its own water practices, the greater it's potential to realize opportunities to reduce cost and improve efficiencies.

This series of projects has enjoyed strong participation from industry sources, water tool developers, water tool users, stewardship advocates and resource managers within the Great Lakes basin. This is encouraging as each of these stakeholder groups may have different needs from a water stewardship assessment tool.

Being able to demonstrate that water can be used to create economic wealth, and doing so in a way that improves the value of the resource, will be important as the Great Lakes region will rely on water as a competitive advantage to attract new residents, new industries, and to fortify a new and likely very different economy than that of the last century.

GLPF will continue to provide updates on this project as well as many others in our active project portfolio. If you would like further information about this industrial water stewardship project, please visit the project website. For additional information on GLPF's investments related to flow regimes in the Great Lakes region, contact us at startaconversation@glpf.org or call 847.425.8150.