



August 23, 2010

**Optimizing Industry Water Use
Great Lakes Protection Fund Project # 926**

***Effective Application of Footprinting
Methodologies to Industrial Operations in the
Great Lakes Basin***

Expert Panel Workshop Summary Report

Project Background:

Global concerns regarding water shortages and access to water supplies are driving international efforts to characterize water use practices and needs. The Great Lakes Protection Fund has provided funding to initiate and refine the scope for a project to examine water use assessment and “footprinting” protocols in use or under development in other regions of the globe with the objective of seeking answers to the following questions.

- 1. Are these protocols applicable to a region generally regarded as “water rich” like the Great Lakes Basin?**
- 2. How does this characterization of water use or “footprint” mesh with the concept of utilizing sustainable water availability as an enabler for economic development within the Great Lakes Basin?**
- 3. Do these protocols and this concept of characterizing water use appropriately consider industry water use needs?**
- 4. How do the protocols relate to water conservation expectations within the industrial facility setting?**
- 5. Do the protocols provide for recognition of water recycling or reuse practices typical of industrial processes?**
- 6. Are these protocols equipped to properly characterize use of water in support of society’s needs, services, and the manufacture of products?**
- 7. How will application of these protocols affect future water use approvals? How will application impact costs?**

To initiate and guide this project, CGLI has established an expert panel made up of knowledgeable Great Lakes water use stakeholders. The panel was called together on July 16, 2010 in Ann Arbor, Michigan to consider these questions and provide views on Great Lakes Basin water use. In total, 119 Regional water policy experts were invited to join the Optimizing Industry Water Use Expert Panel. These experts were distributed among the following sectors:

- Academic
- Government State or Provincial
- Government Federal (both U.S. and Canada)
- Environmental organizations
- Research organizations
- Public utilities
- Industry

Thirty-eight persons accepted the invitation to participate in the Project Expert Panel.

- The breakdown in numbers of individuals from the various sectors is as follows:
 - Academic - 3
 - Government State or Provincial - 8
 - Government Federal (both U.S. and Canada) - 5
 - Environmental organizations - 4
 - Research organizations - 4
 - Public utilities -1
 - Industry – (non CGLI members) 6, (CGLI members) 7
- All but three of these individuals participated in the July 16, 2010 Expert Panel Workshop. All will have the opportunity to participate in the synthesis of Workshop outcomes, project report, and final RFP documents. Participant rosters are available in Appendix I and II to this summary report. Those individuals not able to participate in the Workshop but who will also serve on the Expert Panel are listed in Appendix III.

Expert Panel background materials are available on the Project Home Page and Communications Center. The website can be viewed at: <http://cgli.org/waterfootprint/waterfootprint.html>. This communications center page contains links to:

- The Optimizing Industry Water Use project description
- The agenda for the recent Optimizing Industry Water Use project Expert Panel Workshop
- Presentations utilized in the recent Optimizing Industry Water Use Project Expert Panel Workshop
- Links to the water footprinting protocols that will be included in the Optimizing Industry Water Use project
- Resource materials in use by the Optimizing Industry Water Use Project Team
- The communications center includes place holder slots for links to additional project work products and information that will be posted when the materials are available.

Initial Findings/Impressions

From the contacts made and feedback received regarding participation in the Optimizing Industry Water Use Expert Panel it was found that there is broad interest in the water footprinting topic. However, knowledge about footprinting protocol specifics, applicability to the Great Lakes Region, and/or the appropriate relationship of these to industrial water use was not robust. The Workshop proved useful in orienting Panel members on the issues surrounding water use concerns, providing introductory information regarding water footprinting protocols in use in other locales, and providing an opportunity to develop the questions and issues that must be explored as the water use management policy development process beneficial to the Great Lakes Region moves forward.

Expert Panel Workshop Outcome

The July 16, 2010 Expert Panel deliberations provided a structured process that led to identification of the issues around water use, characterization of water use, planning for and achieving sustainable water use, and utilization of water resources for the benefit of the Great Lakes region. The workshop agenda, the presentations used to provide a basis for discussion, and the questions used to guide the deliberations are all available on the Project Home Page and

Communications Center <http://cgli.org/waterfootprint/waterfootprint.html> as outlined above. Panelists and other interested parties are encouraged to refer to these posted materials in addition to reviewing the synthesized Expert Panel discussion points presented in this summary.

Notes taken by several Expert Panel participants and the comments supplied by panelists in follow-up to the Workshop have been consolidated and synthesized into the points displayed below. They have been categorized into the four topical groupings that emerged from the workshop discussion – i.e. comments or points that relate generally to water use, those that pertain to the characterization of water use, those describing factors to be considered when planning for and working to achieve sustainable water use, and, finally, points that relate to how water use policy can be administered to be of benefit to the Great Lakes Basin. It is intended that these discussion points be used to formulate the scope of an RFP that will be advanced to test and specify how water use accounting or “footprinting” protocols and practices should be used, or perhaps modified, to characterize and guide sustainable industrial water use within the Great Lakes Basin.

Synthesized Expert Panel Discussion Points

Water Use

- Water is not equally distributed over the planet, within nations, or within regions – including states. The need is to understand how much is available on a local scale.
- Specific high volume water uses attract attention and are hard to put into, or view in, the perspective of overall Great Lakes Basin significance.
- Our traditional water use governance and management practices have been long standing. These are now being evaluated in relation to concerns regarding whether or not allocation strategies match current knowledge regarding ecosystem and watershed management needs or principles.
- How best to relate regional water use practices to global needs or concerns is a particularly important question for the Great Lakes Basin. The carbon model has served as one reference point for addressing water use concerns. However, there is an important difference. As global carbon emissions concerns have highlighted local emissions, global water use concerns may direct attention to local water use practices. Unlike carbon, local water uses relate predominantly to local impacts. Therefore a water use assessment tool, developed within global concern perspectives, may not be suitable for addressing local water use impacts.

Characterization of water use

- Water accounting – how much is being used now is important information. Not having a good understanding of water use in all sectors, for all purposes, everywhere creates concerns and impairs planning.
- However, it is not the use of water that is the issue – it is the impact of that use.
- Water is inherently reusable. How water is reused/recycled must be included as part of the characterization. How can withdrawers be “credited” for these efficiencies?
- Focusing only on quantity of water withdrawn can mean that key trade-offs are not properly evaluated. For example return flows vs. consumptive uses, increased energy use to achieve lower water discharges, etc. all need to be part of the picture.

- Policies established to address non-water issues, for example air pollution control, can impact water use. Air pollution control scrubbers require large volumes of water. Understanding when trade-offs are necessary is an important matter.
- Water use accounting is an important element in water management schemes. Not only does it serve as a basis for tracking management activities, it enhances management – “what gets measured gets managed.”
- All water footprinting protocols and assessment tools discussed during the workshop and being developed globally seem to be designed for application to a single withdrawer or possibly a sector of industrial withdrawers. How could the footprint process or other tools be applied to aggregate industrial withdrawals with other withdrawal categories?
- In some locales, there seems to be a growing trend towards businesses/industries obtaining their water from public water suppliers. As a result, the industrial use component is lost within the larger municipal withdrawal context – even though it may very likely be the great majority of the total withdrawal/consumptive use. Should an aggregate footprint then be developed for incrementally broader spatial scales (i.e., local watershed, Lake, Basin, etc)?
- Water use discussions need to include the full range of users. Agriculture, electric utilities, beverage manufacturers, including the bottled water industry, were not present for this discussion. However, these withdrawers may have to be addressed through separate but nearly identical processes. Combining them could result in too many varying points of view that would make progress challenging. Perhaps an industry effort can become the model for a footprinting process that can be applied to all Great Lakes water use categories.

Planning for and achieving sustainable water use

- All protocols have some sort of water accounting provision – but only for the specific entity or locale being tested by the protocol.
- Return flows and discharges are important factors. The quality of water in these flows can have impacts.
- Water use accounting and management systems need to facilitate determination of water use “norms” for industry. Benchmarking of sustainable water use practices for Great Lakes industries would be very useful. These “norms” could be of assistance in determining “reasonableness” of the amount of water proposed to be withdrawn for a specific type of application.
- Industry’s water use needs vary between sectors and between facilities within sectors. Factors that influence water use include process and technology specifics as well as equipment age. Water use management regimes could provide incentives for investment in water use efficiency. These regimes may also need to be able to identify disincentives for investment in water use efficiency.
- Water use assessment protocols that include third party certification provisions have appeal to the public and outside observers. Industry needs to have comfort with certification process details and be assured of objectivity of the certifying organizations and personnel.
- Industry water use needs can change as conditions change. Market driven production levels, product mix, etc. as well as external factors such as climate change, local drought or excess precipitation and others are examples. Allowances for these variables are needed (i.e. adaptive management).

Utilization of water resources for the benefit of the Great Lakes basin

- The Great Lakes Region must be able to utilize its water-related advantages as an incentive for industrial development.
- The benefit derived from use of the water should be included in the analysis. It is necessary to understand the value of the withdrawal to the community, the watershed/basin, and possibly even the nation in terms of the three sustainability parameters – environmental, economic, and social benefits.
- Water use analysis must demonstrate incentives to industry for efficient water use.
- A Regional water use management regime that provides incentives for industry but maintains needed controls can also foster sustainability both within industry and the Region.
- Industry “buy-in” of the Regional water use management regime is needed. To obtain this, the public and governments will have to provide assurance that access to water will be granted.
- Industry can use access assurance to create a competitive advantage for the Region.
- When water use policy is developed, science, social, and political factors must all be brought together in a spirit of support for sustainable economic development. The water management/use assessment protocol must support this need. This said, it must be recognized that adverse public opinions will always occur – regardless of the simplest and most obvious of issues/actions.
- Determining how to tell the story of water use economic contribution to the Region, the value of specific water uses, and support for sustainable development is a communications matter. This project should address this need.
- Decision making processes regarding water withdrawal approvals within the Great Lakes Basin, in and of themselves, must not be overly burdensome on the applicants such that the water supply advantage held by the region is not negated.

The Path Forward

Based on information obtained through the Expert Panel Workshop the initial set of questions regarding the use of water footprinting protocols and how they apply or may be applied to industrial water use assessments – particularly in relation to the water supply specifics of the Great Lakes Region – continues to be relevant. However, in some cases, the exact framing of the questions needs to be adjusted to accommodate the points provided by the Expert Panel.

The expected path forward for this project is as follows:

- The Expert Panel is hereby asked to review and comment on the DRAFT Synthesized Expert Panel Discussion Points presented in this summary.
- Comments will be received through August 18, 2010.
- The Project Staff will, taking into account the comments received from the Expert Panel, complete the revised project description, statement of scope, final list of questions to be studied, and define the project deliverables by August 23, 2010.
- These elements will include a description of the role of the project contractor and how the contractor will utilize and interact with the project Expert Panel.
- A list of potential contractors for completing the detailed water footprinting review, synthesis of the specific needs and objectives relevant to industrial activity in the Great Lakes Basin, including the communications elements identified by the Expert Panel during the Workshop, will be assembled by the Project staff by August 31, 2010.

Members of the Expert Panel are encouraged to provide suggested contractor names to the project staff.

- A draft project RFP will be produced by the Project staff and circulated to the Expert Panel by August 27, 2010.
- The RFP will be distributed to prospective contractors by September 7, 2010 – with a request for bid responses to be received by September 30, 2010.
- Following review by the Expert Panel, the final project report and proposal for project funding will be submitted to the Great Lakes Protection Fund by October 31, 2010.

The request for Expert Panel comments is not restricted to the Synthesized Expert Panel Discussion Points, but on any aspect of this summary report. The Project Staff would like to thank all members of the Expert Panel for their contributions and commitment to participate in this project. Please return comments and suggestions to Dale Phenicie, Project Manager.

Project Staff

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Appendix I

Optimizing Industry Water Use Great Lakes Protection Fund Project # 926

Effective Application of Footprinting Methodologies to Industrial Operations in the Great Lakes Basin

Expert Panel Workshop Agenda July 16, 2010 -10:00 am to 4:00 pm

In-Person Participants

Organization	First Name	Last Name	Title
Consumers Energy Company	John	Gulvas	Senior Environmental Planner
Council of Great Lakes Industries	George	Kuper	President
Council of Great Lakes Industries	Dale	Phenicie	Project Director
Council of Great Lakes Industries	Janet	Rieke	Research Assistant
Council of Great Lakes Industries	Evelyn	Strader	Public Relations Director
Great Lakes Commission	Thomas	Crane	Deputy Director
Great Lakes Environmental Research Laboratory National Oceanic & Atmospheric Administration	Drew	Gronewold	Physical Scientist / Hydrologist
International Joint Commission	Saad	Jasim	Director, Great Lakes Regional Office (Observer)
Lafarge North America, Inc.	Brian	Gasiorowski	Regional Environmental Manager
Michigan Department of Natural Resources and Environment	Brant	Fisher	Environmental Engineer Water Use & Withdrawal Program
National Council for Air & Stream Improvement, Inc.	Paul	Wiegand	Vice President
Ohio Chamber of Commerce	Jennifer	Klein	Director, Energy and Environmental Policy
Rock-Tenn Company Paperboard Mill	Lowell	Knapp	Environmental Coordinator
The Brookings Institution	John	Austin	Non-resident Senior Fellow
The Nature Conservancy	Rich	Bowman	Director, Policy for Great Lakes Project
U.S. Geological Survey	James	Nicholas	Michigan District Chief
University of Michigan Cooperative Institute for Limnology & Ecosystems Research	Allen	Burton	Professor and Director
University of Michigan Graham Environmental Sustainability Institute	Donald	Scavia	Director
University of West Virginia	Tom	Mahoney	President of the West Virginia Manufacturing Extension Partnership Director of the Industrial Extension Service

Appendix II

Optimizing Industry Water Use Great Lakes Protection Fund Project # 926

Effective Application of Footprinting Methodologies to Industrial Operations in the Great Lakes Basin

Expert Panel Workshop Agenda July 16, 2010 -10:00 am to 4:00 pm

Teleconference Participants

Organization	First Name	Last Name	Title
Alliance for Water Efficiency	Bill	Hoffman	Technical Advisor
American Forest & Paper Association	Jerry	Schwartz	Senior Director
Ann McCabe and Associates, Inc.	Ann	McCabe	President
CH2M Hill	Jan	Dell	Vice-President, Energy Division
DuPont	Amanda	DeSantis	Project Director DuPont Corporate Remediation Group
Edison Electric Institute	Sarah	Ball	Manager, Environmental Affairs
Environmental Facilities Corporation	Sandra	Allen	Director, Policy and Planning
Forest Products Association of Canada	Roger	Cook	Director, Environment
Great Lakes Protection Fund	Shannon	Donley	Associate Program Officer
Lafarge Canada, Inc.	Rob	Cumming	Environment & Public Affairs Manager
Michigan Department of Natural Resources and Environment	Joe	Lovato	Chief, Water Withdrawal and Contamination Investigation Unit Drinking Water and Environmental Health Section
National Roundtable on the Environment and the Economy	Jill	Baker	Senior Policy Advisor
National Wildlife Federation	Nathalie	Chin	Restoration and Water Resources Policy Intern
New York State Department of Environmental Conservation	Don	Zelazny	Regional Director
NewPage Corporation	Steve	List	Manager, Water Quality and Solid Waste Programs
Shell Oil Products US	Louis	Brzuzy	Senior Staff Environmental Specialist
The Future 500	Matt	Turner	Director, Global Stakeholder Initiatives Water Program

Appendix III

**Optimizing Industry Water Use
Great Lakes Protection Fund Project # 926**

*Effective Application of Footprinting
Methodologies to Industrial Operations in the
Great Lakes Basin*

**Expert Panel Workshop Agenda
July 16, 2010 -10:00 am to 4:00 pm**

Expert Panelists Unavailable to Attend Workshop

Organization	First Name	Last Name	Title
Alliance for Water Efficiency	Mary Ann	Dickinson	Executive Director
BP	Tim	Weisenberger	Environmental Advisor - Water Advocacy
Wayne State University Law School	Noah	Hall	Professor and Director
Great Lakes Protection Fund	J. David	Rankin	Vice-President & Director of Programs