Improving Water Management in the Great Lakes Basin

Where do you get your water management information? Knowledge-Transfer Survey Summary Report

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Introduction

The Knowledge-Transfer (K-T) Survey was designed to assess which K-T tools or strategies are most likely to be used by water management stakeholders in the Great Lakes region to acquire information to help them in their work. This survey was prepared by the project manager John Jackson and Rebecca Pearson, Great Lakes Commission, and reviewed by the project advisors. The survey was then finalized and sent out in June, 2014, to a wide-range of stakeholders engaged in improving water management actions in their communities. The survey was created using an online survey service, SurveyMonkey®. It consisted of 11 questions; about half were multiple choice questions, and the other half were open-ended questions. The entire survey is in Appendix A on the project website (http://glc.org/projects/water-resources/water-mgmt/). This survey was distributed among those who registered for the project's first K-T May 2014 webinar as well as to the Great Lakes Commission's glin-announce listserv. The SurveyMonkey® was open for thirty days.

Results

One hundred and thirty-three people completed the survey. Table 1 below summarizes the geographic location of the respondents.

Table 1

Geographic Location	Number	Percent of Total Respondents
Michigan	33	24.81%
Ontario	29	21.80%
Illinois	22	16.54%
Ohio	14	10.53%
New York	9	6.77%
Wisconsin	9	6.77%
No Response	9	6.77%
Beyond the Great Lakes	4	3.01%
Minnesota	2	1.50%
Indiana	1	0.75%
Pennsylvania	1	0.75%
Total	133	100.00%

Based on their affiliation, the respondents were classified according to a general stakeholder group, i.e., conservation authority[1], federal government, state/provincial government, regional government, local government, academic, business, citizen, or non-profit. "Other" was included as a stakeholder type for respondents who did not give their affiliation. Table below summarizes how the respondents were classified.

Table 2

Stakeholder Group	Number	Percent of Total Respondents
Non-profit	30	22.56%
Business	15	11.28%
State Government	15	11.28%
Local Government	14	10.53%
Conservation Authority	14	10.53%
Academic	12	9.02%
Federal Government	12	9.02%
Regional Government	5	3.76%
Provincial Government	2	1.50%
Citizen	2	1.50%
Other	12	9.02%
Total	133	100.00%

Secondly, the respondents classified themselves in terms of the water management issue or issues that they were most concerned about. Their interests were spread across the issues suggested in the survey. The issues identified by over half of the respondents were integrated water resources management, stormwater, green infrastructure, and funding. Integrated water resources management received the most responses. Water conservation and water supply were in the mid-range followed by wastewater and other issues. The following chart summarizes those issues.

[1] Conservation authorities represent groupings of municipalities in Ontario on a watershed basis and work in partnership with other agencies to carry out natural resource management activities within their respective watersheds, on behalf of their member municipalities and the Province of Ontario.

Q3 What water management issues concern you the most?

Answered: 133 Skipped: 0

Answer Choices	Responses	
Integrated water resources management	61.65%	82
Stormwater	57.14%	76
Green infrastructure	53.38%	71
Funding	50.38%	67
Water conservation & efficiency	43.61%	58
Water supply	33.83%	45
Wastewater	28.57%	38
Other	20.30%	27
Total Respondents: 133		

Figure 1

The conservation authority, state/provincial government, non-profits and business stakeholder groups followed the overall pattern of responses, with the large majority picking integrated water resources management as an issue of concern.

The responses from other stakeholder groups slightly varied from the overall pattern of responses. The large majority of regional and local government respondents viewed stormwater at 73.68 percent to be the top issue. The majority of academic respondents picked green infrastructure (69.23%) and water conservation and efficiency (69.23%) as top issues.

Just over twenty percent of the respondents offered other water management issues not listed on the survey. These issues include:

- Urban and urbanizing water management
- Flooding issues (2 responses)
- Drought
- Ecological impacts
- Climate change (5 responses)
- Climate adaptation
- Adaptation to extreme water levels
- Groundwater use and impacts
- Land use
- Water quality
- Fundamental water research (e.g., HABs, water levels, ice)
- Level of service parameters
- Rates vs. prices
- Great Lakes Compact
- Agriculture non-point source pollution
- Integration of Green Infrastructure into Combined Sewer Overflow long-term plans
- They are all connected

The respondents answered 7 questions related to the types of media and other K-T tools they use. Respondents were able to check off more than one answer. The next series of charts summarizes the responses.

Q4 What types of media are most effective in informing you of the current issues related to your profession?

Answered: 110 Skipped: 23

Answer Choices	Responses	
Websites	73.64%	81
Webinars	70.91%	78
E-newsletters	70.00%	77
Professional magazines/newsletters	43.64%	48
Professional journals	38.18%	42
Online community of practice	20.00%	22
Other (please specify)	18.18%	20
Op ed articles in popular news media	17.27%	19
Online forum	12.73%	14
Twitter	10.91%	12
Blogs	9.09%	10
Linkedin groups	8.18%	9
Facebook	6.36%	7
Google+	0.91%	1
Total Respondents: 110		

Figure 2

By far the forms of media frequently listed as being the most effective for receiving current information and news related to water management were websites, webinars and e-newsletters. Few respondents listed social media sources such as facebook, linkedin groups, twitter or google+ as the most effective ways for them to receive information. All stakeholder groups responded to this question in a similar way.

Respondents were able to identify their favorite media sources on water management issues in open-ended survey questions. Over 50 media sources were identified. They include federal government, national organizations, regional organizations and local sources. The Great Lakes Commission's GLIN was most popular with 13 respondents noting it, followed by the e-

publications issued by the U.S. Environmental Protection Agency (8 responses). Popular e-newsletters and websites are generated by the following organizations:

- Great Lakes Commission's Great Lakes Information Network (GLIN) (13 responses)
- U.S. Environmental Protection Agency's Climate Change Water GreenStream, Great Lakes and NPDES news (8 responses)
- State and provincial agencies (5 responses)
- Conservation Ontario (4 responses)
- Sea Grant (4 responses)
- Green Infrastructure Ontario Coalition (3 responses)
- Center for Neighborhood Technology (3 responses)
- Alliance for Water Efficiency (3 responses)
- Water Online (3 responses)
- Water Environment Federation (3 responses)
- POLIS Water Sustainability Project (2 responses)
- American Water Works Association (AWWA) (2 responses)
- Water Efficiency (2 responses)
- Great Lakes Echo (2 responses)
- EcoWatch (2 responses)
- Water Tap (2 reponses)
- City Lab
- Circle of Blue
- Brown & Caldwell
- Water Environment Research Foundation
- Council of Educators in Landscape Architecture (CELA)
- Governing
- FutureStructure
- NOAA climate centers
- Finger Lakes Institute
- The Umbrella Stormwater Bulletin
- Local utilities
- Freshwater Future
- Canadian Water Network
- Environmental Health News
- Beach Net
- The Nature Conservancy
- Treehugger
- 360.org
- Institute of Water Research
- Great Lakes Clean Community Network
- Water Online
- Water Canada
- Stormwater
- KW Field Naturalist "The Heron"
- Environmental Finance Center of Syracuse
- Midwest Climate Center
- Conservation Magazine
- Stormwater
- National Ground Water Association
- Paper Li
- Soil and Water Conservation Society
- The Council of Canadians
- Canadian Dam Association
- Canadian Water Resources Association
- Great Lakes and St. Lawrence Cities Initiative

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Q6 What types of events are most effective in informing you of the latest water management innovations/approaches?

Answered: 107 Skipped: 26

Answer Choices	Responses	
Professional conferences	74.77%	80
In-person tours of best practices	47.66%	51
Other (please specify)	24.30%	26
Unaware of any related events	7.48%	8
Total Respondents: 107		

Figure 3

The majority of respondents reported that attending professional conferences was the most effective event for them to receive information related to the latest water management innovations or approaches. Conferences organized by American Water Works Association, Water Environment Federation and the American Society of Civil Engineers were particularly popular. There was no significant variation in responding to the question among stakeholder groups.

Other conferences noted by respondents included:

- Latornell Conservation Symposium
- Canadian Water Resources Association
- International Association of Great Lakes Research
- State environment quality agency-related events
- Water Con
- WaterSmart Innovations
- Water Summit
- Healing Our Waters Great Lakes Restoration Conference
- Green Communities Canada
- Michigan Green Infrastructure Conference
- National Water Quality Monitoring Conference
- MS4 Conference
- St. Joe River Basin Commission Seminar
- Ohio Stormwater Conference
- Tug Hill Commission
- Chicago Wilderness Congress
- Groundwater Research Institute, University of Waterloo

Almost half of the respondents listed in-person tours of best practices as effective. Examples provided include:

- A facility tour conducted by the Lake Superior Work Group
- Credit Valley Conservation Low Impact Development Tours
- Areas Of Concern biannual meetings

- Milwaukee Metropolitan Sewer District, Sweetwater
- Green Communities Canada member organizations
- Indiana Department of Natural Resources stormwater BMP workshop and site tour
- New York Department of Environmental Conservation non-point source committee tour of wetlands constructed to provide water quality improvements.
- Tour of the Metropolitan Water Reclamation District of Great Chicago's Stickney Waste Water Treatment Plant through Chicago's Center for Green Technology
- Grand River Environmental Network tour of Kitchener sewage treatment plant.
- Green Infrastructure tours in Center of Excellence, Syracuse
- Save the Rain/Syracuse, NY
- Regional/local site visits and workshop hosted by Southeast Michigan Council of Governments
- RAIN Home Guide training included tours of facilities using on-site stormwater management BMPs
- Northeastern Ohio Regional Sewer District

Twenty four percent of the respondents identified other types of events including:

- One-day workshop (vs. lengthy, costly conferences)
- Pilot projects
- Webinars (during the lunch hour)
- Water certification training courses and seminars
- Conversing with colleagues
- Word of mouth
- Milwaukee Water Council
- Informal meetings with municipal and conservation staff
- Grand River Water Management Plan working groups (e.g., water managers working groups)
- Brown bag meetings
- Public hearings
- Meetings with professions and local leaders
- "Green drinks" – local networking and education events

Q8 What organizations are most effective in informing you of the latest water management innovations/approaches?

Answered: 106 Skipped: 27

Answer Choices	Responses
Other (please specify)	33.02% 35
Local or regional municipal associations	31.13% 33
Water Environment Federation	28.30% 30
Great Lakes and St. Lawrence Cities Initiative	27.36% 29
American Water Works Association	27.36% 29
Water Environment Research Foundation	24.53% 26
The Center for Neighborhood Technology	16.04% 17
I don't know of a particular organization that provides this service in the Great Lakes region, but I think one should exist.	15.09% 16
Alliance for Water Efficiency	13.21% 14
Green Communities Canada	9.43% 10
Canadian Water and Wastewater Association	6.60% 7
Canadian National Water Efficiency Network	0.94% 1
WasteWater Education	0.94% 1
Total Respondents: 106	

Figure 4

Not one organization rose to the top among respondents as those most effective in informing stakeholders of the latest water management innovations or approaches, but rather there was substantial diversity in the answers. About a third of respondents specified an organization other than the ones listed in the survey. Some written responses include Conservation Ontario, Water Resources Centers, and the U.S. Environmental Protection Agency. There was no significant variation in responding to the question among stakeholder groups.

Other organizations include:

- Soil and Water Conservation Society
- Conservation Authority

- Canadian Water Resources Association
- Latornell Conservation Symposium
- Sustainable Technology Evaluation Program
- Green Infrastructure Ontario Coalition
- National Oceanic and Atmospheric Administration
- Ontario Water Works Association
- Re-inventing the Nation's Urban Water Infrastructure (ReNUWit)
- Water Resources Center
- Water Management Association of Ohio
- National Water Quality Conference
- TRIECA Conference (Toronto & Region Conservation Authority & Great Lakes Chapter of International Erosion Control Association)
- WaterTap
- EPA Office of Water
- Environmental Facilities Corporation
- Clean Rivers Clean Lake
- American Society of Civil Engineers
- TRCA-Sustainable Technologies Evaluation Program
- Credit Valley Conservation
- International Association of Great Lakes Research
- American Geophysical Union

Observations

We were interested to see "integrated water resources management" listed most frequently by respondents as an issue that concerns them most. When one looks at how our water management decisions are made and implemented, we are still dominated by a "silos" approach, e.g., water supply, water conservation and efficiency, storm water management, wastewater management, and green infrastructure usually being considered and handled separately. Nevertheless, this survey clearly shows that all sectors are coming to recognize the need to do a better job of integrating thinking around the various components of our water management systems. This gives us a clear message that we need to put much more effort into understanding the need for and ways to integrate our decisionmaking on water resources management.

It was also significant to see that respondents in the regional and local government sector put a higher emphasis on stormwater than the other sectors did. This is not surprising considering the devastating flooding issues that so many municipalities have been confronted by over the past several years because of sudden intense downpours. This raises the question for exploration of what roles integrated water management and green infrastructure might play in easing these stormwater problems.

This survey showed that social media were very low on the list for all sectors as an effective means to be informed on water management issues. We were surprised at this finding. We did not ask for respondents' ages in the survey so we were not able to find out if this response correlated with the various age demographic groups. Most respondents listed websites, webinars, and e-newsletters as their most effective ways to obtain information. This raises the questions of whether social media by their nature are not as effective at conveying information, or whether social media are simply not being used as much and as effectively by information transmitters as they could be, or whether social media are not being turned to by information receivers.

When asked about events they find most effective for becoming informed, professional conferences was by far the highest. Conferences still appear to be seen as the most effective event by which to become informed, but quite frequently we hear from our colleagues that they cannot attend conferences due to financial and time constraints. One respondent suggested that there be one-day workshops instead of multiple day conferences to save time and dollars.

Almost half the respondents listed "in-person tours of best practices" as most effective events for becoming informed of innovative approaches. The list of specific examples shows a wide diversity of these types of events. This seems to be a growing area that is worthy of increased focus.

The other item that impressed us is the wide-range of sectors working on water management issues: not-for-profit groups, businesses, municipalities, regional conservation authorities, federal, provincial and state governments, and academics. This means that there are huge numbers of places from which people can obtain information on water management issues. Also respondents listed a large variety of specific organizations and events that they rely on for information. This diversity allows people to go to sources made up of their colleagues for information, sources they may more fully trust.

The question, however, in this diversity is whether as a result there is unnecessary duplication, and, perhaps more importantly, whether this diversity is contributing to our continuing to work on water in silos instead of creatively together finding integrated water resource management strategies.

Some observations for further thought and discussion.

To share your thoughts on these matters, or for further information on the *Improving Water Management in the Great Lakes Basin Project*, contact John Jackson at jjackson@web.ca or 519-744-7503 or go to the project website at http://glc.org/projects/water-resources/water-mgmt/.

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