Summary Report

What is a Healthy Lake Michigan for You?

Tuesday, October 18, 2016

University of Wisconsin-Milwaukee

School of Freshwater Sciences

Introduction

As part of the International Joint Commission's efforts to obtain public input on Agreement progress, two public meetings were held to connect with several scientists and citizens in Wisconsin who are committed to restoring and protecting their part of the Great Lakes. The afternoon roundtable at the University of Wisconsin-Milwaukee's School of Freshwater Sciences (SFS) gave the opportunity for Commissioners and citizens to hear about the latest research findings from scientists from the SFS as well as other campuses of the university.

During an evening public meeting, six presenters outlined key successes and challenges in the Milwaukee watershed and Lake Michigan in the areas of green infrastructure, the Milwaukee Metropolitan Sewerage District's 2035 vision and goals, watercentric cities initiative, citizen-based water monitoring, nutrient reduction and aquatic invasive species in Lake Michigan, and Great Lakes implications from the latest Waters of Wisconsin report. Participants divided into small group discussions for each topic and developed findings and recommendations for each topic. Summaries of these discussions follow.

The IJC will incorporate these findings into their assessment report on Agreement progress, and hopes that these conclusions and recommendations provide direction to Milwaukee residents for cooperative strategies to deal with unique issues facing their part of the watershed.

Green Infrastructure and Milwaukee Metropolitan Sewerage District's 2035 Vision

Presenters: Linda Reid, Executive Director, Southeastern Wisconsin Watershed Trust; Ezra Meyer, Water Resources Specialist, Clean Wisconsin; Karen Sands, Director of Planning, Research and Sustainability, Milwaukee Metropolitan Sewerage District
Rapporteurs: Frank Bevacqua, Public Information Advisor, IJC US Section and Michael Toope, Public Affairs Adviser, IJC Canadian Section

Key Messages

Two groups with similar topics joined forces mid-way through the small group conversations. Participants explored a variety of ideas:

- Green infrastructure is often more cost-effective than grey infrastructure, particularly for small, rural communities. Slowing down stormwater runoff has flood control benefits in addition to reducing water quality impacts. There are sophisticated tools, including those developed by the Great Lakes Commission, to help communities evaluate green infrastructure options.
- There is a growing body of technical standards, certification programs and training courses to ensure that green infrastructure projects are effective, but more is needed. While green infrastructure projects should be implemented on a larger scale, maintaining them after they are implemented is a growing challenge. A support system to help

communities and local organizations maintain them is needed. State and regional agencies can provide guidance and support, but there must be flexibility to tailor solutions that fit particular local conditions.

- Lack of funding and requirements are main barriers to green infrastructure. Requiring the use of green infrastructure will help it to expand. A stormwater utility can be created that collects fees to manage stormwater; property owners could receive a credit for implementing projects that reduce runoff. Existing health and safety mandates often prevent the use of green infrastructure. Creative funding through public-private partnerships should be considered.
- Sharing knowledge is another way to encourage greater use of green infrastructure. Governments should partner with schools, nongovernment organizations (NGOs), master gardeners and others to raise awareness of water quality issues and green infrastructure approaches. More sophisticated education about water and green infrastructure needs to be integrated into school curricula, especially approaches that link these concepts to everyday life. Establishing service centers to locate NGOs and other organizations that share similar goals under the same roof is a powerful way to promote collaboration and realize synergies.

Recommendations

The green infrastructure small group makes the following four recommendations to the IJC:

1. Promote innovative financing solutions to implement green infrastructure on a broader scale, including public-private partnerships.
2. Advocate for removing barriers to green infrastructure that exist in health and safety regulations (i.e., plumbing standards, building codes, landscaping requirements, etc.).
3. Support the integration of place-based water education and green infrastructure approaches into educational curricula.
4. Support the development of green infrastructure service centers where organizations that promote green infrastructure can share ideas and collaborate in other ways.

Water Centric Cities Initiative

Presenter: Elizabeth Hittman, Environmental Sustainability Project Coordinator, City of Milwaukee Office of Environmental Collaboration
Rapporteur: Trish Morris, Director, IJC Great Lakes Regional Office

Key Messages

Using a modified analysis of strengths, weaknesses, opportunities and threats (SWOT) to developing a watercentric city program, the following considerations are important for development in the Great Lakes basin:

- Strengths include the large size and scale of the watershed; the huge quantity of water; standardized elements and use of best practices across the basin; capability to develop

metrics to measure progress, including economic and environmental benefits; ability to find better optimization of water

- Weaknesses or obstacles include government's lack of or type of billing for water that encourages unlimited use, not conservation, and that doesn't capture the real value of the water.
- Threats include political polarization, leaking and aging infrastructure that causes a greater than 20% loss of water, and bacteria from leaking pipes.

The group then discussed the elements of a watercentric city:

- Decentralized infrastructure
- Good stewardship of its water resources, even those cities with water shortages
- Practices conservation regardless of quantity of water it enjoys
- Good citizen engagement of non-typical stakeholders, using social justice/environmental justice considerations
- Concern beyond "swimmable/fishable/drinkable" issues to flooding.
- Good funding support from state/municipal levels, with federal government assistance with aging infrastructure
- Across the board crisis response that involve regional conditions and circumstances
- Strategic programs with a central action plan addressing multiple issues and outcomes
- Reporting transparency, good communications, and ability to "tell the story"
- Provides meaningful "blue jobs" employment
- Balances costs/benefits, works to manage harmful algal blooms and aquatic invasive species like quagga mussels, understanding it is cheaper to protect than to restore
- Successful regional engagement
- Measures recreation and citizen connections, and obtains citizen and business investment.

Recommendations

1. Federal governments can help to establish incentives to improve conditions in the cities so they can become watercentric cities, like it did with the LEED program and Mayors for Monarchs.
2. As cities develop their strategy, they need to blend economic development with sustainability, involve numerous water organizations to help to ensure its success, and research new technologies for better monitoring and conservation.

Citizen-Based Monitoring and Its Importance for Water Quality

Presenter: Cheryl Nenn, Milwaukee Riverkeeper
Rapporteur: Allison Voglesong, IJC Michigan Sea Grant Fellow

Key Messages

Water quality monitoring on the Great Lakes is faced with the DRIP barrier: data rich, information poor. There is strong interest to integrate water monitoring data, but major gaps exist between micro-scale (at the local and state level) and macro-scale (regional, federal and binational) monitoring. Quantity of water monitoring data is relatively high, but because parameters of datasets don't always comport, the quality of information is characterized as low. Water quality monitoring data is cumbersome for end users to access and understand and unavailable in a timeframe that impacts water user decisions due to lags between monitoring and communication of risk to the public. The context of funding and resources means non-profit groups are increasingly relied upon for water monitoring, despite same or reduced funding budgets from state or federal agencies.

Recommendations

Based on the identified problems, the public engagement breakout group encourages the International Joint Commission to explore the following solutions as recommendations to the governments for improving water quality monitoring relevant to citizens:

1. Improve coordination, connection and integration of disparate water quality monitoring data across local, state, federal and binational agencies and organizations.
2. Improve public access to water quality monitoring data through technology interfaces, visualizations or dashboards, and improve the accessibility of language and communication methods in water quality reports, such as providing a less technical version of the State of the Great Lakes report for the public.
3. Encourage innovative funding solutions to support existing and new monitoring infrastructure and the coordination of monitoring data across agencies at all levels.
4. Additionally, the breakout group urges the International Joint Commission to work with governments to focus on early detection programs, and expand the water quality monitoring scope to integrate early detection for water quality into early detection for aquatic invasive species, beach health, and pollution spill and discharge efforts. Current processes to monitor emerging threats in water quality are insufficient for adequate response and thus updates to policies are needed, such as in Annex 3 (Chemicals of Mutual Concern), that reduce delays between detection and action on emerging threats.

Nutrients and Aquatic Invasive Species

Presenter: Todd Brennan, Watershed Project Manager, Alliance for the Great Lakes
Rapporteur: Matthew Child

Key Messages

Each of the five lakes exhibit variable physical, chemical and biological characteristics. Careful attention is needed to spatial heterogeneity when discussing and prescribing responses to aquatic invasive species and nutrient load reductions for each lake, and different basins within each lake. Nutrient loads to Green Bay were discussed in the context of the Area of Concern's eutrophication beneficial use impairment. Technical transfer of best practices and successful projects between AOCs, and between AOCs and other geographic locations, is essential. The economic benefits of cleanup need to be promoted as a means to improve behavior, leading to a future where users are motivated to exceed total maximum daily load limits based on economic benefits, both to individual businesses and the community at large.

Cage aquaculture is a source of nutrients. The Great Lakes community should ready itself for the likelihood of large-scale net pen aquaculture in the lakes to meet the dietary preferences of consumers, as wild-caught fish won't be able to satisfy future demand.

There is a pressing urgency to reduce nutrient loads to mitigate harmful and nuisance algal blooms. Milwaukee harbor assimilates phosphorus better than some other coastal locations, which raises the prospect of nutrient mitigation through deliberate harbor and shoreline design. Are there opportunities through shoreline design to promote nutrient mitigation e.g., shoreline impoundments?

Collective action and stewardship are essential, which include change agents and using techniques and approaches that effectively engage intended audiences. The approaches should reflect the cultural differences between jurisdictions e.g., Michiganders have a strong cultural relationship with the lakes compared with other Great Lakes states and provinces. By connecting people with the resource they will value it. Physical access to the lakes, or stories about iconic species like lake sturgeon, can strengthen those connections.

Great Lakes Implications from *Shifting Currents*, the 2016 Waters of Wisconsin Report

Presenter and small group facilitator: Jane Elder, Executive Director, Wisconsin Academy of Sciences, Arts and Letters
Rapporteur: Sally Cole-Misch, Public Affairs Officer, IJC Great Lakes Regional Office

Key Messages

Wisconsin is at a critical tipping point for its water: while there is a phenomenal increase in research and capacity, there is less ability to take decisions and actions due to cuts in the Department of Natural Resources and legislative budgets and a lack of long-sighted vision, which is essential for the Great Lakes. Citizens aren't aware of everything that goes into providing clean water to them, and stresses on the middle class as a result of economic upheavals in recent years may prevent them from visiting and enjoying the Great Lakes. This is essential so citizens are touched by and connected to the lakes, because what we value we will protect. As climate change and other stressors on the environment force changes, each generation gets used to a lower reality of environmental quality.

Recommendations

1. The Great Lakes need to become larger part of the economic, social and cultural pie.
2. To encourage Great Lakes and environmental literacy, scientists must go to citizens and students to inform them of the value and issues of the lakes. We can't depend on governments to do this anymore, with limited staff and budgets.
3. To further encourage and develop environmental literacy, develop a grand, year-long celebration of the Great Lakes as the park system is doing to celebrate its centennial anniversary. Involve all sectors of society and include fun events such as a Great Lakes selfie contest and cost-free opportunities to get to and enjoy the lakes.
4. Obtain funding to provide nonpartisan tours on the lakes for legislators, so they recognize their value for all elements of society.
5. Recognizing the impact climate change is and will have on the Great Lakes, develop a basinwide resilience strategy and include environmental literacy elements to lessen its impact on the lakes and their watershed.