

GREAT LAKES REGIONAL GREEN INFRASTRUCTURE POLICY ANALYSIS: ADDRESSING BARRIERS TO IMPLEMENTATION

Great Lakes Legislative Caucus 2018 Annual Meeting
September 22, 2018



A stylized map of the Great Lakes region, showing the outlines of the five lakes and the surrounding landmasses in a light blue color.

Great Lakes Commission des Grands Lacs

A unified voice for the states and provinces

Great Lakes Commission

- Public agency established by the Great Lakes Basin Compact in 1955
- Ontario and Québec joined in 1999
- Allows Great Lakes states and provinces to speak with a unified voice to reach consensus on and advocate for the region's priorities

“To promote the orderly, integrated, and comprehensive development, use, and conservation of the water resources of the Great Lakes Basin.”

Great Lakes Basin Compact, Article 1, Section 1

Key Program Areas

- Water Quality
- Water Management and Infrastructure
- Commercial Navigation
- Coastal Conservation and Habitat Restoration
- Aquatic Invasive Species Prevention and Control
- Information Management and Blue Accounting



Priorities for Sustaining Great Lakes Restoration and Economic Revitalization
A Joint Agenda for the Great Lakes Region • March 2018

Restoring and protecting the Great Lakes is an enduring, bipartisan priority for the people of the Great Lakes region and their elected leaders. Our organizations present these priorities to sustain progress and maintain the Great Lakes as an economic engine and environmental treasure.

- **Fully fund the Great Lakes Restoration Initiative**
The GLRI is producing results and creating jobs by cleaning up contaminated sites, addressing threats from Asian carp and other invasive species, preventing polluted runoff that causes toxic algae, restoring habitat for valuable fish and wildlife and paving the way for economic development. Congress has formally authorized the program at \$300 million annually and strong, bipartisan support continues among regional leaders. Much work remains and Congress and the president should sustain this successful program. *Appropriate \$300 million for the GLRI in FY 2019 to advance restoration and protection of our Great Lakes.*
- **Maintain federal agency capacity to support long-term protection and management of the Great Lakes**
Effective management and protection of the Great Lakes depends on the region's robust partnership with federal agencies and programs. The GLRI is a critical program for accelerating protection and restoration efforts, but it does not supplant core federal programs that provide a platform for collective Great Lakes efforts. Base agency budgets for important Great Lakes programs must be maintained at federal agencies such as U.S. EPA, NOAA, U.S. Fish and Wildlife Service, Army Corps of Engineers and others to ensure continued progress toward restoration objectives and to serve as a foundation for long-term programs and initiatives. *Maintain funding for base agency programs that protect the Great Lakes.*
- **Strengthen conservation programs in the new Farm Bill**
Agricultural conservation programs are critical for building partnerships with the farm community to protect water quality and enhance wildlife habitat in the Great Lakes region. They help farmers keep nutrients on the land and are vital for preventing harmful algal blooms, which are a persistent threat to public health and drinking water safety. The 2018 Farm Bill should maintain, strengthen and strategically target conservation programs that protect the Great Lakes and support a healthy farm economy. *Maintain and strengthen conservation programs authorized in the 2018 Farm Bill to ensure they meet farmer demand to improve water quality and wildlife habitat.*
- **Invest in drinking water and wastewater infrastructure**
Aging drinking water infrastructure threatens our region's future prosperity and the health of our citizens. We face an urgent need to safeguard drinking water sources and modernize drinking water systems. Aging and inadequate sewer systems release sewage and stormwater into the Great Lakes each year, closing beaches and threatening public health. *Boost funding for the Clean Water and Drinking Water State Revolving Fund programs and the Water Infrastructure Finance and Innovation Act program (WIFIA); encourage more green infrastructure; and promote policies and incentives that increase access to water infrastructure financing and ensure affordable water to all residents.*
- **Protect the Great Lakes from aquatic invasive species**
Strong federal leadership is needed to prevent the introduction and spread of aquatic invasive species that threaten the environmental and economic health of the Great Lakes. *Fully fund efforts under the Asian Carp Action Plan to prevent the introduction of Asian carp; and support regional and state programs to prevent and control invasive species, including the Great Lakes Fishery Commission's sea lamprey control program.*
- **Strengthen the Great Lakes navigation system**
The Great Lakes navigation system is vital to our region's economy. Infrastructure for commercial navigation and recreational boating must be maintained and upgraded. Secure and resilient navigation structures are needed to ensure reliable access to raw materials that are vital for manufacturing nationwide. *Provide funding to maintain and upgrade commercial ports, locks and other navigation infrastructure and recreational harbors using ecologically protective measures.*



Photos, left to right: Ludington North Shorewater Light in Ludington, Michigan; 2018/19 Tom Gill Pavilion at the National Lakeshore, Michigan; City, Indiana; Whitefish Lake Photography.

Great Lakes Commission

- 3-5 commissioners from each of the 10 states and provinces, including GLLC members:
 - Senator Rebekah Warren
 - Senator Carrie Ruud*
 - Senator Ann Rest*
 - Representative Jennifer Schultz*
 - Representative Paul Torkelson
 - Representative Patrick J. Harkins*



Executive Director Darren Nichols, dnichols@glc.org

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GLC's Green Infrastructure Champions

- Addresses local barriers and capacity through competitive mini-grants and mentoring network
- Policy analysis targets federal, state, and provincial policies that hinder or enable local green infrastructure (GI) adoption
 - Partnership with Credit Valley Conservation
 - Recommendations developed with Advisory Team input and support
 - Congressional briefing held September 5, 2018



GI Champions Advisory Team

- ACF – Convergent Stormwater Technologies Alliance
- American Rivers
- City of Ann Arbor
- City of Southfield
- City of Syracuse
- Cleveland Botanical Garden
- Cleveland Water Alliance
- Conservation Design Forum
- Contech Engineered Solutions
- Credit Valley Conservation
- Environmental Consulting & Technology, Inc.
- Environmental Finance Center – Syracuse University
- Fishbeck, Thompson, Carr and Huber
- F.X. Browne, Inc.
- Fred A. and Barbara M. Erb Family Foundation
- Great Lakes and St. Lawrence Cities Initiative
- Illinois Department of Natural Resources
- Indiana Finance Authority
- Interface h2o, LLC
- Lawrence Technological University
- Michigan Department of Environmental Quality
- Michigan Department of Natural Resources
- Michigan Green Industry
- New York State Department of Environmental Conservation
- New York Water Environment Association
- Oakland County Water Resources Commission
- Ohio Environmental Protection Agency
- Parjana
- Southeast Michigan Council of Governments
- Tetra Tech
- The Nature Conservancy
- United States Geological Survey
- Wisconsin Department of Natural Resources



Why stormwater?

- Increased urbanization leads to more surface runoff or overland flow
- Impacts enhanced by climate change
- Associated water quantity and quality concerns



Bay City and Bangor Township, MI
(Credit: Kip Kronk, Michigan Sea Grant)

Green Infrastructure Champions



Why green infrastructure?



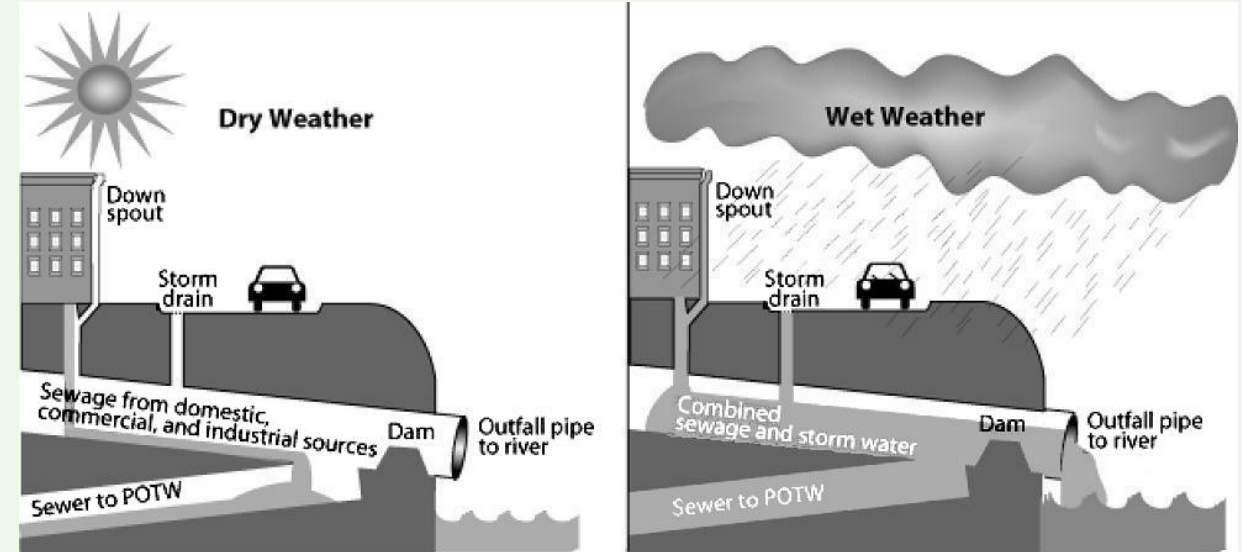
Dequindre Cut, Detroit, MI (Credit: GLC)

- Helps mitigate quality and quantity issues by restoring natural hydrology
- Natural areas, nature-based engineered solutions, and systems that imitate natural infiltration
- Numerous co-benefits



Urban stormwater management: CSS or MS4

- Combined sewer system (CSS)
 - One set of pipes for sewage and stormwater
 - All water conveyed to sewage treatment plant; overflows directly to waterbody
- Municipal separate storm sewer system (MS4)
 - Stormwater conveyed to water body in dedicated pipes
 - Does not go through wastewater treatment plant

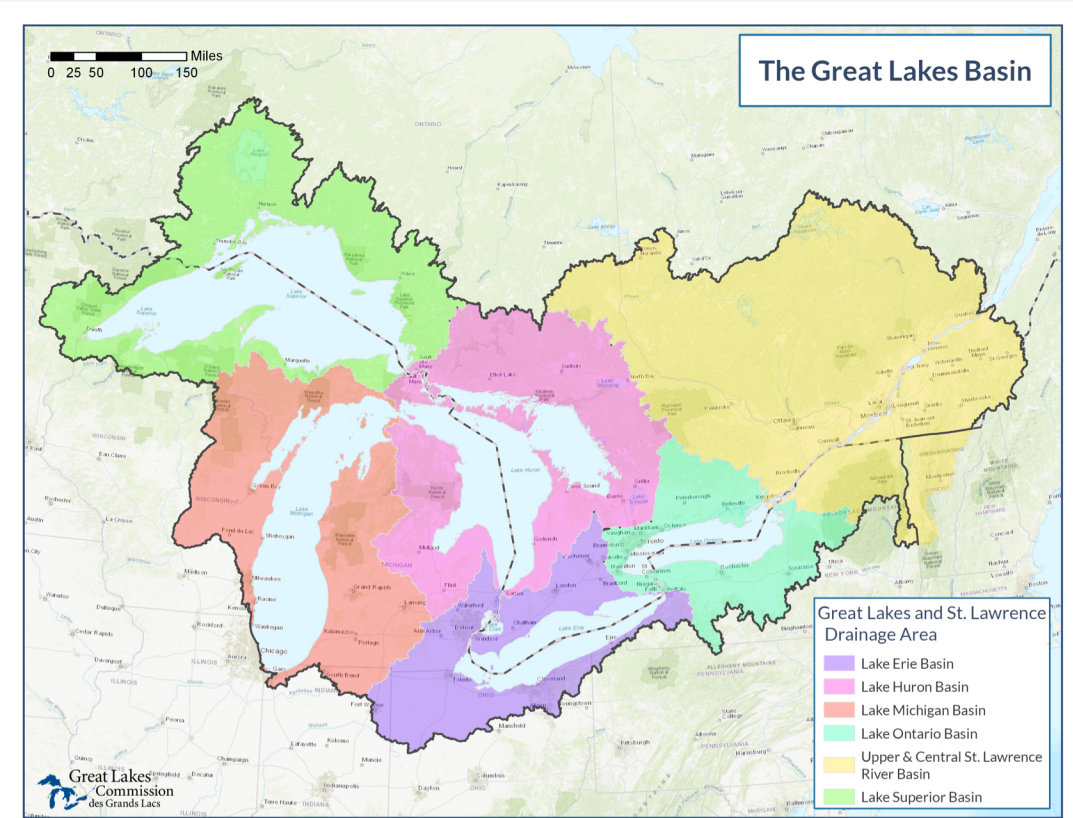


Combined sewer system diagram, US EPA



GI in the Great Lakes basin

- Regional issue with predominately local solutions
- Policy analysis to assess how federal, state, and provincial policy either promotes or hinders GI progress
- Recommendations to improve top down support to advance GI



Barriers to green infrastructure

- Funding
- Local code/ordinance
- Limited mechanisms to incentivize GI
- Unfamiliarity with technologies/practices
- Uncertainty of compliance, performance, and maintenance
- Public perception



Green roof on Chicago's city hall. (Credit: EPA)



UNITED STATES (FEDERAL) POLICY



Clean Water Act Discharge Permits

- CSO Control Policy – nine minimum controls
 - Does not include GI or any volume control measures
- MS4 Discharge Permits – six minimum controls
 - Post-construction runoff control **MUST** include implementation of BMPs



The role of consent decrees

- Come into play *after* Clean Water Act discharge permit violation(s)
- Compels decision-makers to consider GI through prescriptive or descriptive requirements
- May foster innovation, but costly, reactive, and narrow in scope



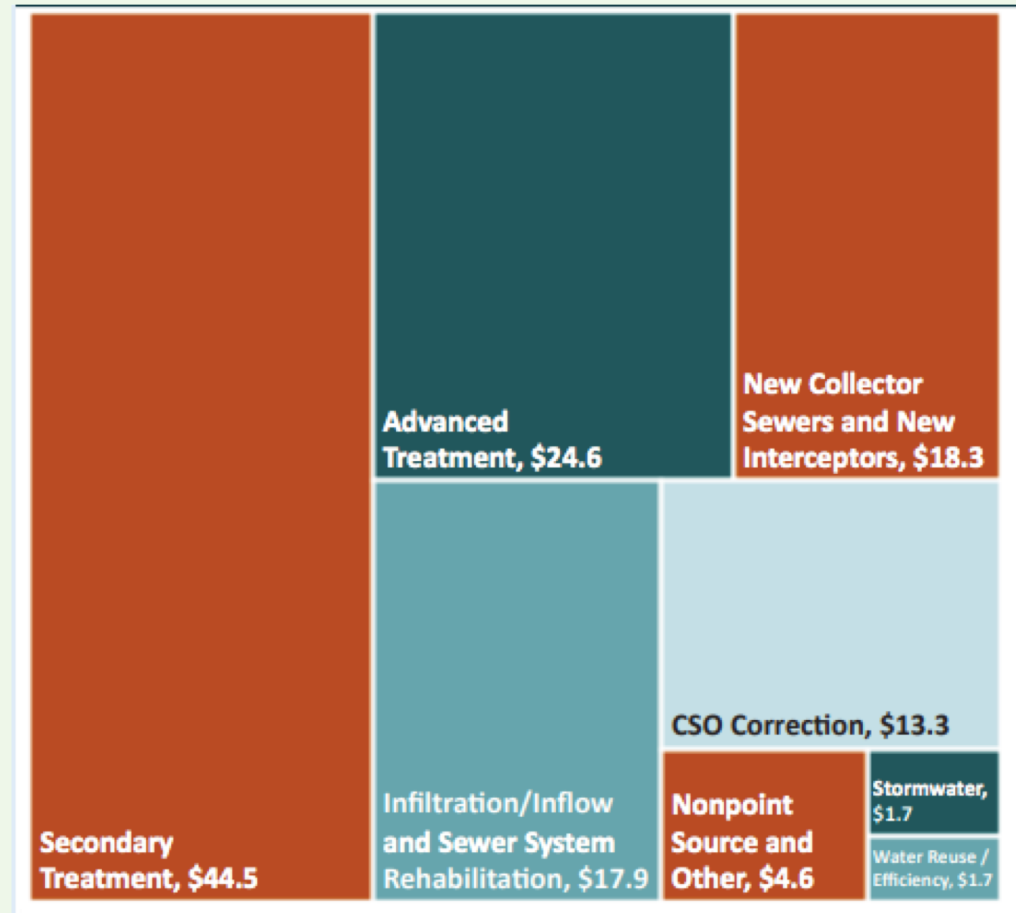
Fleet Avenue, Cleveland, OH (Credit: NEORSD)



Key federal funding opportunity: Clean Water State Revolving Fund

- Critical source of funding - \$126 billion invested since 1987
- 20 percent of SRF funds earmarked for sustainability initiatives
 - Remains under-utilized

“Communities are sometimes reluctant to pursue green infrastructure solutions due to a lack of familiarity, inability to secure a repayment source, or other logistical barriers” (EPA 2015).



US EPA, 2018



Federal resource: Green Infrastructure Collaborative

- Seven federal agencies: EPA, USDA, DOD, DOT, HUD, DOI, and DOE
 - Additional funding sources
 - Technical assistance programs



U.S. Federal Recommendations



Connective Corridor: Forman Park (Credit: Save the Rain)

- Fully fund CWSRF
 - Incentivize GI projects with interest rate reductions, prioritization, and funding eligibility extension
- Establish performance-based requirements for stormwater management
- Promote and coordinate integration of GI



U.S. STATE POLICY



Key aspects of states' policy

- Discharge permits (MS4)
- Post-construction standards
- Funding opportunities
- Stormwater utilities



Flooding in Sodus Point, New York
(Credit: Veronica Volk, Great Lakes Today)



MS4 Discharge permit

- Best management practices (BMPs) and public education requirements can incorporate GI
- Examples in states:
 - ILLINOIS – GI identified as highest priority BMP, rationale for selection of lower preference BMP must be provided
 - WISCONSIN – consideration of GI practices required



Rockwell Green Roof, Milwaukee (Credit: MMSD)



Post-construction standards

- Typically descriptive requirements, using GI makes achieving compliance easier
- May be related to water quantity, quality, or both
- State applications:
 - MINNESOTA – One inch of runoff must be retained from any new impervious service, MS4 communities also required to have no net increase in discharge volume, suspended solids, or phosphorus
 - ILLINOIS – Illinois Green Infrastructure for Clean Water Act of 2009



Minimal Impact Design Standards
for enhancing stormwater management in Minnesota



Funding opportunities

- Critical for all stages – planning, implementation, and operations and maintenance
- Key state programs:
 - PENNSYLVANIA – Pennsylvania Storm Water Management Act, PENNVEST
 - OHIO – Alternative Stormwater Infrastructure Loans



Rendering of Newark Downtown Renovation Project, Newark, OH
(Credit: OHM Advisors)



Stormwater utilities



Green Garage, Detroit, MI (Credit: GLC)

- Funding mechanism (including repayment source for CWSRF) AND incentive
- Ability to establish varies widely between states:
 - 62 percent coverage (MN, OH) vs one stormwater utility (NY)
 - Bolt Decision (MI)



U.S. State Recommendations

- Require consideration of GI to meet NPDES requirements
- Establish performance-based standards
- Dedicate funding and explicitly allow municipalities to establish stormwater utilities and/or levy fees



Memorial Park, Sturgis, MI
(Credit: FTCH)



CANADIAN (FEDERAL) POLICY



Legal framework for water resources

- Federal government not responsible surface water resources (unless trans-boundary)
- Canada Water Act; Canada Environmental Protection Act
- Federal Gas Tax Fund



Leslie Barns Streetcar Maintenance and Storage Facility, Toronto, ON
(Credit: Toronto Transit Commission)



Canadian Federal Recommendations

- Prioritize GI under Infrastructure Canada's funding programs
- Allow funds to be allocated toward GI research



The Enclave, Ingersoll, ON
(Credit: GLC)



CANADIAN PROVINCIAL POLICY



ONTARIO

- Conservation Authorities
- Ontario Water Resources Act; Clean Water Act
- Infrastructure planning promoted strongly
- Drainage Act and Development Charge funding



County Court bioswale, Brampton, ON
(Credit: Toronto Region Conservation Authority)



QUÉBEC



- Sustainable Rainwater Management Guide
- 2018 provisions to Environmental Quality Act (EQA) will implement new permitting regime
- Municipal Powers Act (LCM) allows municipalities to set maximum discharge rate to sewers; establish P3s
- Green Fund; 2017-2027 Infrastructure Plan



Canadian Provincial Recommendations

- Include GI in asset management
- Create new funding mechanisms

Decarie, Montreal, QC (Credit: Biopolis)



Green Infrastructure Champions



Summary Recommendations for States and Provinces

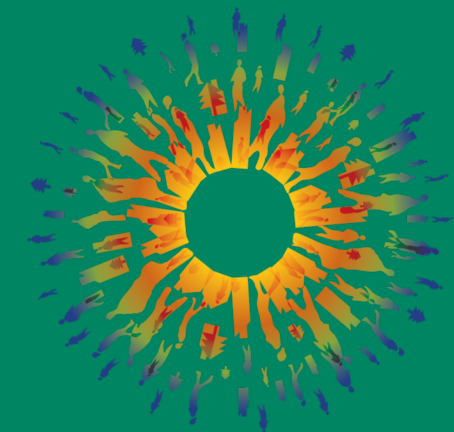
- Comprehensive inclusion of GI in planning
- Create dedicated funding opportunities, reduce barriers to innovative financing
- Increase confidence in GI practices (provide research)
- Establish performance-based standards



Erie Rain Garden, Erie, PA (Credit: GreenEriePA)



Questions?



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Green Infrastructure Champions

