Great Lakes and St. Lawrence Cities Initiative
Alliance des villes des Grands Lacs et du Saint-Laurent

Are you ready to prevent, prepare, respond and recover from **extreme weather** including flooding and erosion? and build resiliency in your community?

Supported by : Victoria Pebbles, Great Lakes Commission, André Labonté AquaHacking and E-Nundation, Mayor Brian Saunderson, Collingwood ON; Eve Pytel, Delta Institute; Julia Noordyk, Wisconsin DNR; John Anderson, Greenleaf; Kevin Shafer, MSSD.

The underlying question raised by participants of the roundtable was: how do we prepare for the unpredictable?

General areas of solutions to build resiliency to extreme weather events discussed were: green Infrastructure, smart grids, and integrated watershed management.

Green infrastructure: participants acknowledged that an important barrier for their large-scale implementation is posed by outdated codes and ordinances. Cooperation among county and municipal staff in zoning, land use, urban forestry, stormwater and engineering are key to evaluating barriers to green infrastructure in communities.

Smart grids and cities: smart rainwater grids use sensors on the combined sewer system to optimize its storage capacity and dynamically balance the system to reduce overflows and flooding. Event though the dynamic control of sewer systems is not new, recent technology advancement in sensors and in the use of artificial intelligence (AI) has opened new and exciting avenues.

Integrated watershed management: participants also opened the discussion to regional governance and the role of Watershed Boards. Assets management planning was identified as a critical incentive for local communities to integrate stormwater infrastructure and management strategies in the overall budget and public works planning process.

Another area that came out in the conversation was the importance to integrate water management and storage in road improvement and, more generally, the need to connect water and transportation functions in communities.

Drivers to resiliency building that were identified by the group:
-        Partnerships between local jurisdictions, NGOs, research. Private-Public Partnerships;
-        Funding: availability of Pre-disaster mitigation funds, Private-Public Partnerships;
-        Citizens engagement;
-        Public Health impacts: Clean Med;
-        Economic impacts: blue and green jobs, new opportunities being created;
-        Social impacts: social benefits of green infrastructure and integrating nature into cities

Several tools were presented by participants:

- Peer-to-peer mentoring of the Green Infrastructure Champions Program[1]. This mentoring network fosters the transfer of knowledge from experienced green infrastructure practitioners to a broader network of communities across the binational Great Lakes basin by pairing emerging champions (mentees) with pioneer champions (mentors);
- Audit of Local Codes and Ordinances[2]. This workbook is intended to help communities review, revise and prioritize their local codes and ordinances to promote and advance green infrastructure implementation.
- *Rain grid*[3] and *E-nundation*[4] are examples of recent technological advances that can significantly help communities. They still are at the "early-adopters" phase of development and need support from leaders to gain traction.
    - *RainGrid* aims to alleviate stresses placed on existing stormwater infrastructure by capturing rain where it falls in a dispersed stormwater retention system - Smart Cisterns- that can capture up to 90% of annual roof runoff.
    - *E-nundation* is a software that simulates floods and assess their impacts on people, buildings and critical infrastructure. It can be used by municipalities as a decision support tool for effective flood risk management in prevention, emergency and recovery.

Finally, the Mayor of Evanston was proud to mention the implementation of the city's 3rd Climate Action and Resilience Plan.[5]

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[1] https://www.glc.org/work/champions/network
[2] http://seagrant.wisc.edu/home/Portals/0/Files/Coastal%20Communities/Green_Infrastructure/GIAT.pdf
[3] https://www.raingrid.com/stormwater-smartgrids/
[4] https://geosapiens.ca/geosapiens-wp/en/innovative-solutions-to-protect-against-flood-risks/
[5] https://www.cityofevanston.org/government/climate