

## Overview

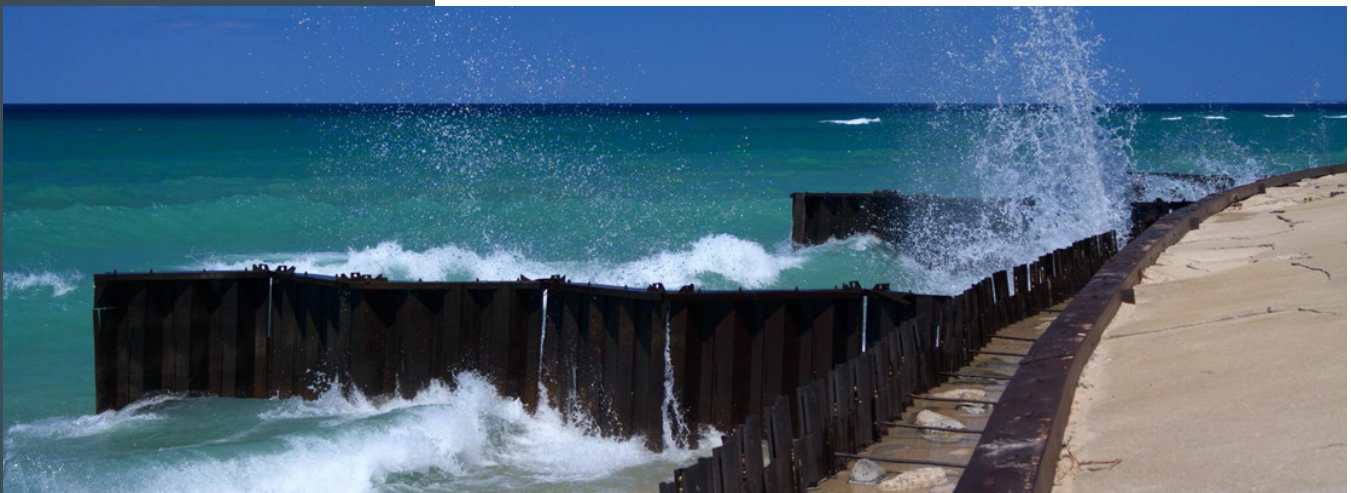
- **What is CRISSP?:** A simplified municipal adaptation tool to help small and mid-sized cities understand and prepare for infrastructure vulnerability due to climate change.
- **Partners:** Great Lakes and St. Lawrence Cities Initiative (Cities Initiative), AECOM, and Gary, IN.
- **People:** Two boundary organizations (Cities Initiative; AECOM) and three cities (Gary, IN; Evanston, IL; Traverse City, MI).
- **Impact:** After development and piloting of CRISSP in Gary, the Cities Initiative shared the protocol with 110+ municipalities through training workshops, webinars, and outreach. The Cities Initiative and GLISA continue to seek funding to bring CRISSP to more cities in the region.

More frequent extreme weather events have left Great Lakes municipalities looking for a way to identify and secure vulnerable infrastructure, such as water treatment plants and electricity transformers. Limited municipal resources and a lack of reliable data on anticipated weather changes due to climate change have complicated these efforts. To support municipal planning, the Great Lakes Integrated Sciences and Assessments (GLISA) collaborated with the Great Lakes and St. Lawrence Cities Initiative (Cities Initiative) and other partners to develop an adaptation tool for small and mid-sized cities: CRISSP, the *Climate-Ready Infrastructure and Strategic Sites Protocol*.

The protocol gives municipalities a tool to plan for climate extremes by providing vetted climate information (such as projected increases in rainfall, storm severity, and the number of extreme heat days) and a step-by-step guide to assess vulnerabilities and identify adaptation actions. This guide includes instructions for assembling a cross-department municipal CRISSP team, conducting a self-assessment, and taking steps to safeguard critical infrastructure, facilities, and sites. The CRISSP process was developed to be rapid and low-cost, combining climate data with municipal staff's own knowledge of their assets and existing city planning services.

In addition to supporting the project with a 2014 small grant, GLISA accessed and provided customized climate and weather information, coordinated research through state and federal agencies, and worked with project partners to develop the CRISSP technical guide and supporting materials. CRISSP was first piloted with the City of Gary, Indiana. As a result, Gary's annual capital investment planning now includes improvements to infrastructure identified as vulnerable to extreme precipitation.

Breakwalls at Point Betsie Lighthouse. Photo by GLISA climatologist Daniel Brown.



GLISA and partners shared the protocol and lessons learned from the pilot in Gary with City Initiative's 110+ member cities through training workshops, webinars, and outreach. Traverse City, MI and Evanston, IL have since implemented CRISSP. GLISA continues to promote CRISSP to small and mid-sized cities in the United States and Canada, through partnerships with the Urban Sustainability Directors Network (USDN) and the Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR). CRISSP has also garnered national interest: it was featured in a NOAA Vulnerability Assessment webinar in September 2017 and was recently updated to offer a more user-friendly format. Currently, GLISA is seeking funding to bring CRISSP to more cities in the region.



2008 Flood in Gary, IN. Photo by The Times of Northwest Indiana.

*“ The CRISSP puts municipal staff in the driver’s seat, helping them to understand how extreme weather could affect the operations of their facility or infrastructure. By drawing directly on staff knowledge and experience, the CRISSP helped me secure staff buy-in and build a shared sense of responsibility to be prepared for the next storm. ”*



– Brenda Scott Henry,  
Director/ MS4 Coordinator  
City of Gary, Indiana  
Green Urbanism/  
Environmental Affairs

## About GLISA *Advancing Climate Knowledge for Adaptation and Resilience with Great Lakes Communities*

Established in 2010, GLISA is a collaboration between the University of Michigan and Michigan State University, supported by the National Oceanic and Atmospheric Administration (NOAA). As one of 11 NOAA Regional Integrated Sciences and Assessments (RISA) teams, GLISA works at the boundary between climate science and decision-makers, striving to enhance Great Lakes communities’ capacity to understand, plan for, and respond to climate impacts now and in the future. Our team of social and physical scientists collaborates to:

- Develop usable climate information tailored to stakeholder needs;
- Develop, implement, and evaluate resources and tools to apply climate information to decision-making;
- Facilitate collaborative activities, education, and training and support stakeholder networks; and,
- Investigate emerging climate issues and synthesize findings for practitioners.



### Great Lakes Integrated Sciences + Assessments (GLISA)

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Example of GLISA's boundary chain model of stakeholder engagement for the Great Lakes Climate Adaptation Network (GLCAN). Climate information is tailored and moves through different boundary organizations (links in the chain) to connect science to users. Adapted from Lemos et al. 2014.