



Great Lakes Adaptation for Cities (GLAA-C) Factsheet

The Great Lakes Adaptation Assessment for Cities increased understanding about the challenges and opportunities municipalities face when adapting to climate change. This work was supported by the Kresge Foundation and the University of Michigan's Graham Sustainability Institute, which fosters sustainability through knowledge, learning, and leadership.

CLIMATE ADAPTATION IN THE GREAT LAKES

With over 80% of the United States population living in urban areas (2010 U.S. Census), cities play a critical role in enhancing resilience to climate change impacts. This is especially true in the Great Lakes region where urban areas significantly influence the health and stability of their surrounding watershed which accounts for one-fifth of the world's surface fresh water. Additionally, the Great Lakes watershed houses approximately 10% of the US and 25% of Canadian populations (40 million people). Climate change impacts in the Great Lakes region are anticipated to worsen risks of flooding, reduce water availability and quality, increase problems related to heat stress, and negatively impact economies in cities dependent on tourism and recreation. Given these anticipated risks and their substantial adverse impacts on the natural and built infrastructure, many Great Lakes' decision makers highlight the need for locally relevant climate science and strategies for responding to impacts.

PROJECT DESCRIPTION:

The GLAA-C team used an Integrated Assessment (IA) approach to engage regional partners and urban practitioners from around the Great Lakes region to identify climate adaptation needs and opportunities for action. The project involved the close collaboration of several University of Michigan faculty members and the Great Lakes Integrated Sciences and Assessments (GLISA) program. Project work included the creation of tailored climate information and products, financial and staff support for adaptation projects, faculty-led student research efforts, and organizing and co-hosting workshops and networking opportunities for city practitioners throughout the region.

FACULTY MEMBERS:

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OUTCOMES

Project Tools: Several tools were created for city decision makers and practitioners from across the region to assist them with their climate adaptation needs. Two key resources include the Cities Impacts and Adaptation Tool and the Great Lakes Atlas:

- **Cities Impacts & Adaptation Tool (CIAT) / bit.ly/CIAT-Tool**
An online climate adaptation planning support tool for decision-makers at the municipal level in the Great Lakes region.

The tool provides regional and local-scale climate data, including current and projected climate trends, demographic and socioeconomic data, and descriptions of adaptation strategies pulled from existing municipal planning documents from across North America.

The tool also uses an interactive map to identify a custom network of "climate peers" or cities whose current climate reflects the selected city's projected climate in 2041-2070. During the first year of public use, there were over 5000 CIAT user sessions.

- **Great Lakes Atlas / bit.ly/GL-Atlas**
An interactive map that provides social, economic, and demographic statistics on 225 counties across the Great Lakes region. This demographic information is combined with detailed data about municipal spending, land use change, and climate change characteristics.

Taken together, the interactive map provides local and regional decision makers with an understanding about how climate change intersects other conditions and concerns in the region. Since release, there have been over 8000 page views of the Atlas.



ADDITIONAL RESOURCES

GLAA-C website
bit.ly/U-MClimate

Great Lakes Cities Climate Case Studies and Fact Sheets
bit.ly/1MefScz

U-M Climate Center
bit.ly/UMClimate

SUSTAINABLE COMMUNITIES LEADERSHIP ACADEMY

Forwarding Adaptation in the Great Lakes Region: At the start of GLAA-C, over 80 participants gathered in November 2012 to discuss through an interactive workshop structure how climate change would impact Great Lakes cities, opportunities for adaptation, and prioritization of adaptation actions. The workshop was attended by teams of three people from thirteen cities across the region.

ADAPTATION IN THE GREAT LAKES REGION

In June of 2014, over 175 researchers and practitioners from the Great Lakes region and beyond gathered for the "Adaptation in the Great Lakes Region Conference." This was the capstone event for GLAA-C. Participants came to learn from one another about climate adaptation efforts in various sectors and across various scales, foster collaboration, and discuss next steps towards building better prepared

SMALL GRANT PROJECTS

In the fall of 2013, GLAA-C awarded \$12,500 to each of its IA partner cities to support adaptation projects:

- **Ann Arbor, Michigan:** Created four informational videos on the local impacts of climate change and what residents can do to adapt to these impacts to bolster the efforts of the newly formed Ann Arbor Climate Partnership.
- **Flint, Michigan:** Rehabilitated the wetland portion of Max Brandon Park (Flint's largest park) in order to restore ecosystem services (including storm water management) and increase accessibility to the public for education purposes.
- **Dayton, Ohio:** In collaboration with Wright State University, conducted a survey to assess community beliefs, attitudes, knowledge, and behaviors as they relate to climate change in order to inform future climate adaptation efforts and awareness campaigns.
- **Kingston, Ontario:** Used project support to carry out three adaptation projects including: planting shade trees around bus stops in areas particularly prone to heat island issues; a Health Impact Assessment that was used to inform a public school campaign and the creation of a teacher toolkit; and integrating an extreme weather impact analysis into the City's Emergency Management Common Operational Picture.
- **Thunder Bay, Ontario:** Developed a community outreach campaign, including factsheets, videos, and two tours, that focused on the importance and benefits of green infrastructure and low impact development as mechanisms for storm water management to build awareness within the city.
- **Toledo, Ohio:** Promoted green infrastructure incentives and engaged three private land holders in order to strengthen storm water management practices in Silver Creek Watershed, an area especially prone to flooding.

NEXT STEPS:

GLAA-C served as a pilot project for the University of Michigan Climate Center's Urban Adaptation program. The outcomes and lessons learned from GLAA-C have shaped the Climate Center's ongoing urban adaptation work, including the enhancement of support tools, growing a Great Lakes Climate Network, and assisting cities throughout the region with their climate data and adaptation needs.