

Great Lakes Adaptation Assessment for Cities Winter Newsletter 2013 – 2014



GRAHAM
SUSTAINABILITY INSTITUTE
UNIVERSITY OF MICHIGAN

GLAA-C Announces Small Grants Recipients



GLAA-C is proud to announce 6 grant awards to cities engaged with GLAA-C through the Urban Council on Sustainability and Adaptation. The small grants projects are offered to support activities which:

- identify and promote better understanding of the vulnerabilities, anticipated impacts and potential opportunities for adaptation
- develop programming for internal capacity building
- fund city wide or community scale assessment programs
- bolster the implementation of climate adaptation strategies.

Check out the summarized project descriptions on page 2!

Small Grants Announcement	1
Summary of the UCSA Meeting	1
UCSA City Proposals	2
GLAA-C's Cities Impact and Adaptation Tool	3
Vulnerability Research at the U of M	4
Urban Planning Capstone in Stormwater Management in Toledo	4
Upcoming Events at GLAA-C	4
Report on GLAA-C Events	5

GLAA-C hosts Urban Council on Sustainability and Adaptation Meeting

The GLAA-C Urban Council on Sustainability and Adaptation Meeting on November 7-8 drew attendees from Great Lakes Cities involved with the GLAA-C project, GLAA-C staff, University of Michigan staff and students. At the meeting, representatives from UCSA member cities shared ongoing adaptation efforts taking place in their local government. Finn Ryan, the producer and director at [Climate Wisconsin](#) shared communication and outreach strategies for educating the public about change adaptation drawing on experience developing

educational climate change videos for the state of Wisconsin. Josh Sims, data management programmer and Evan Mallen, a research assistant at GLAA-C, provided an overview of the Cities Impact and Adaptation Tool (CIAT) under development by GLAA-C. The UCSA member cities were able to provide feedback about the utility of the tool for their cities. Finally, representatives from each UCSA Member city were able to meet with GLAA-C staff to discuss and review strategies and timelines for implementation of the GLAA-C Small Grants Project.

Adaptation Week At Michigan

The UCSA meeting was the last portion of Climate Change Adaptation Week hosted by the Graham Sustainability Institute, Office of Campus Sustainability and the City of Ann Arbor's. This weeklong variety of events highlighted ongoing climate change adaptation projects and programs taking place at the University of Michigan and Ann Arbor. Monday November 4 was the Great Lakes Integrated Sciences and Assessment (GLISA) Annual symposium focused on how boundary organizations are

... Continued on Page 5

How are the UCSA Member Cities Using Small Grant Funding?

Ann Arbor, MI plans to develop a series of community adaptation stories to communicate the city's Climate Action Plan (CAP) and the role of its Community Climate Partnership (CCP) including

- a number of outreach tools aimed at educating residents on the impact of climate change and household-level resilience
- a set of short videos to highlight the goals and efforts of the CAP and CCP featuring climate change and storm impacts in local neighborhoods and stories from community members

Dayton, OH proposed an education and awareness campaign about climate change impacts and adaptation strategies for the community through:

- Forming a partnership with Wright State University (WSU) to survey city residents about perception and knowledge of climate change and personal priorities
- Using results of the survey to inform development of targeted messaging promoting awareness
- Working with WSU to organize focus groups to test potential messages and incorporate survey results into the outreach campaign

Flint, MI will focus on the city's largest park, Max Brandon Park, which contains an inaccessible 1 acre wetland threatened by invasive species with compromised filtration and habitat ecosystem services. The proposal aims to reinvigorate the wetland through:

- removal of debris and unclogging of storm drains around wetlands
- removal of invasive species and native tree planting
- improvements to wetland access through the construction of a boardwalk
- adding interpretive signage to explain the ecological and urban value of the wetland

Kingston, ON has three sub-projects in their proposal:

- plant shade trees in heat vulnerable locations
- collaborate in outreach and education with the public elementary school system
- hire an advanced student to assist the city with integrating relevant climate information into emergency planning and a new community-based education program on adaptation

Thunder Bay, ON is developing initial stages of a Stormwater Master Plan and has written a small grants proposal to:

- create education and outreach materials to communicate the benefits and utility of green infrastructure and low impact development
- focus on the benefits of a newly installed downtown rain garden
- use a variety of existing networks and programs to reach various stakeholder groups

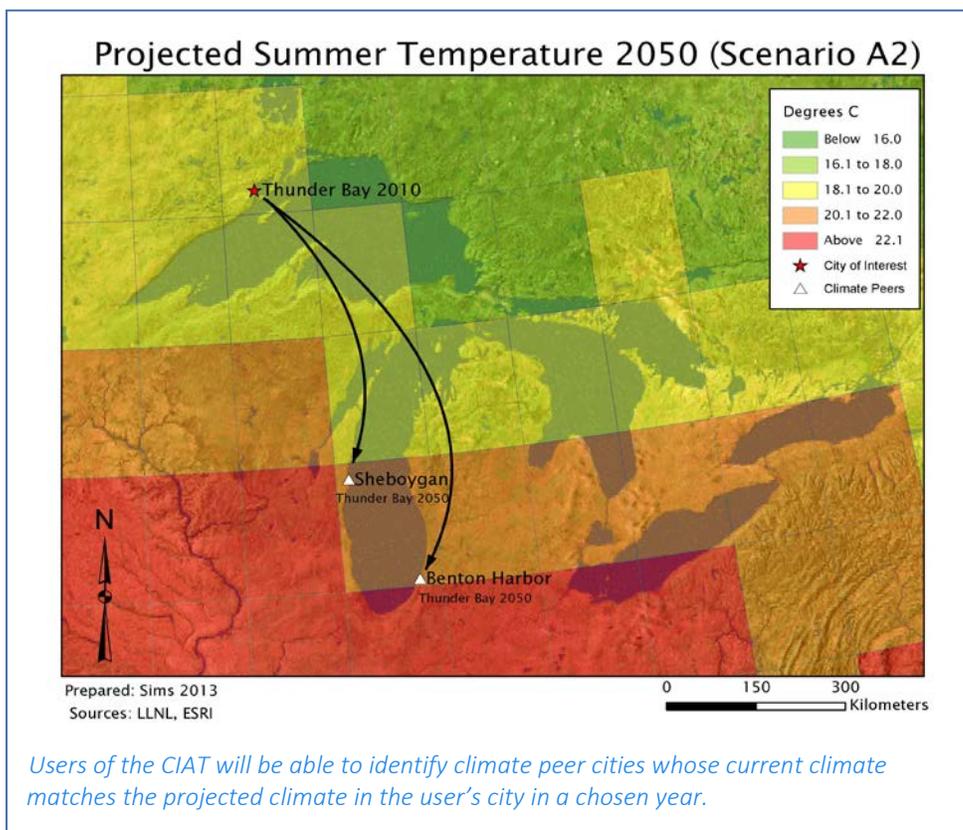
Toledo, OH intends to focus on an area which frequently experiences standing water after small and large interval storms, leading to property damage. The intent of the proposal is to:

- bolster on-site stormwater management on commercial properties with mini grants and a review of the facilities' stormwater credit status
- build on past work carried out by the City, NOAA Eastern Research Group identifying potential properties for stormwater storage
- work in conjunction with a U.S. EPA grant to establish bioswales in the affected area.
- evaluate and develop strategies for community outreach to residential and commercial land holders

Read more about the cities' challenges, plans and proposals at graham.umich.edu/glaac/cities



In the works: The Cities Impact and Adaptation Tool



presented to representatives from GLAA-C partner cities who provided useful feedback to make the tool more relevant to specific concerns. In February 2014 GLAA-C staff hope to release an updated version of the tool for further testing. The final version of the tool will be available mid 2014 on the GLAA-C website.

Integrating Climate Preparedness



Flint's first comprehensive, long-range Master Plan, developed over a 2-year process, was adopted in the end of October with unanimous votes by both the City of Flint Planning Commission and the Flint City Council.

The Master Plan is Flint's first in 50 years and will guide the City for the next 20 years. The plan includes sections on economic development, education, public facilities, services, infrastructure, environmental features open space and housing.

The plan approached land use planning as a way to repurpose significant amounts of vacant and underutilized land within Flint. GLAA-C reviewed the draft master plan for consistency with the City's goals of climate resiliency.

Currently in development, the Cities Impacts and Adaptation Tool (CIAT) will be an online climate adaptation planning support tool for decision makers at the municipal level. It will provide locally relevant data such as current and projected climate trends, socioeconomic and demographic information for both the US and Canada, and adaptation strategies from existing municipal planning documents from across North America.

The tool will also identify a potential network connecting cities with similar adaptation concerns. Most notably, the CIAT will provide the user with "climate peer" cities (like Sheboygan and Benton Harbor for Thunder Bay in the image above) which are those cities whose current climate matches the projected climate of the user's

city. Looking at the peer city's everyday operations will give the user an idea of what their own city may expect in the future. The user will be able to filter these climate peer cities by socioeconomic and demographic data to identify which of those cities are most similar to their own city.

Additionally, the CIAT will analyze climate data trends to identify potential climate change impacts for the user city. The tool will provide potential adaptation strategies pulled from a database of existing municipal plans, ranging from climate action plans to hazard mitigation and stormwater plans. Like the climate peer network, these strategies may also be filtered by city characteristics or by the department to which they apply.

On the November 8th Urban Council on Sustainability Climate and Adaptation Meeting, the CIAT was

Save the Date!

February 26-27

Michigan Green Communities
Conference and GLAA-C Meeting
Flint, MI

This two day event will be both the Michigan Green Communities Annual Conference and a GLAA-C Adaptation Workshop. The first day will focus on statewide participation and peer-to-peer learning with a special emphasis on Flint projects. The second day, hosted by GLAA-C, will focus more on how *IMAGINE FLINT* enables climate adaptation and resiliency strategies and is more targeted at local and regional stakeholders. Learn more at mml.org/green

June 24-26

Adaptation in the Great Lakes
Region
Ann Arbor, MI

Join researchers and practitioners from across the Great Lakes region to learn about climate adaptation efforts in various sectors, foster collaboration, and discuss next steps to building resilient communities and a resilient region.

Learn More at:

graham.umich.edu/glaac or by
contacting Missy Stults
(stultsm@umich.edu).



Green Roof at the University of Toledo
Savage Business School Patekka Bannister

Student Research on Adaptation

Kathryn Conlon completed a dissertation for the degree of Doctor in Philosophy (Environmental Health Sciences) with advisor Associate Professor Marie S. O'Neill. The dissertation, titled "Extreme Heat, Vulnerable Populations and Adverse Health Outcomes: Informing Targeted Climate Change Adaptation Planning", aimed to provide a better understanding of the spatial dimension of heat-related vulnerability through evaluation of correlation of heat vulnerability with excess heat-related mortality in Detroit, Michigan.

Evan Oswald completed a dissertation for a degree of Doctor of Philosophy (Atmospheric Sciences) with advisor Professor Richard B. Rood titled "Heat as a hazard to human health: A multiple dataset assessment of extreme heat indices relevant to human health." His thesis investigates trends in extreme heat across the United States, how they are represented in high-resolution gridded datasets and how temperatures vary across an urban region.

Copies of these dissertations can be found at: deepblue.lib.umich.edu

Urban Planning Capstone Project Studies Stormwater Credit in Toledo

A student capstone project at the Taubman College of Architecture and Urban Planning at the University of Michigan is working with Toledo's Department of Environmental Services and Engineering Services to understand Toledo's flooding concerns and challenges and complete a critical analysis of the city's storm water credit program.

The group, including Yohan Cheng, Ashlee Grace, Diego Horna Munoz, Katie Knapp and Megan McPhillimy, Christian Roadman, Katy Ryan and Katie Wholey, advised by Larissa Larsen and Eric Dueweke is working to help Toledo prioritize stormwater management in areas particularly vulnerable to flooding and water quality issues and to simplify the stormwater credit program.

In 2001, Toledo created a Stormwater Credit Program to

address water quality and quantity issues by reducing fees for nonresidential properties that manage their own stormwater. Though understanding of green infrastructure approaches has increased over the last 12 years, few Toledo property owners have enrolled in the program.

The capstone project is working with city administrators to completely revise the Stormwater Credit Manual as well as to offer suggestions on ways to expand effective stormwater management.

The ultimate product of the research will be a revised credit manual, analysis of the stormwater credit system and recommendations for implementation as well as ideas for how to boost the program's presence in the community.

GLAA-C's Fall Workshops

In September, GLAA-C collaborated with the City of Ann Arbor and the Huron River Watershed Council to organize a climate adaptation workshop for City staff and key stakeholders. At the workshop, attendees identified impacts of climate change and existing strategies to address these changes. Across government sectors the recurring impacts included public health, water quality, shift in staff responsibilities and damage to infrastructure. The strategies identified to address multiple challenges across municipal departments included increasing tree diversity and canopy, updating ordinances, increased education and

outreach and incentivizing private green infrastructure and efficiency.

In October, Michigan SeaGrant, Old Woman Creek National Estuarine Research Reserve and GLAA-C partnered to offer "Preparing Stormwater Systems for Climate Change." The workshop was planned to assist technical staff working with or for municipalities and utility providers throughout the Lake Erie basin in understanding anticipated changes in precipitation in the region and about strategies for creating stormwater systems that are resilient to these climate changes and impacts.

Adaptation Week

(Continued from page 1)

working in the climate adaptation field. The keynote address was delivered by NOAA Scientist and renowned climate change and adaptation scholar, Roger Pulwarty. On November 6 a Campus Sustainability Town Hall was held to inform staff, faculty and students about sustainability efforts across campus. On November 7 a tour of the Nichols Arboretum at University of

Michigan focused on stormwater-related erosion and the potential threats posed by increased run-off resulting from increasingly severe storm events and land-use decisions. An afternoon tour to highlight green infrastructure in Ann Arbor included examples of porous pavements, green streets projects and improved stormwater systems.

GLAA-C Faculty Advisors

Arun Agrawal

Professor at the School of Natural Resources & Environment.
arunagra@umich.edu

Maria Carmen Lemos

Professor at the School of Natural Resources & Environment.
lemos@umich.edu

Elisabeth Gerber

Professor at the Ford School of Public Policy.
ergerber@umich.edu

Larissa Larsen

Professor of Urban and Regional Planning at the Taubman College of Architecture and Urban Planning.
larissal@umich.edu

Marie O'Neill

Professor of Environmental Health Services and Epidemiology at the School of Public Health
marieo@umich.edu

Ricky Rood

Professor of Atmospheric, Oceanic and Space Sciences in the School of Engineering and SNRE
rbrood@umich.edu

About GLAA-C

Through the support of the Kresge Foundation, and in collaboration with Great Lakes Integrated Sciences + Assessments (GLISA), the goal of GLAA-C is to bring together researchers and practitioners to develop actionable climate adaptation programs for cities in the Great Lakes Region. The work of GLAA-C is supported by six University of Michigan faculty members whose backgrounds include public health, public policy, governance, urban planning, and atmospheric science. By incorporating research from all of these fields into climate adaptation solutions for cities, GLAA-C aims to create replicable programs to tackle the interconnected challenges which climate change presents.