

IMPROVING WATER QUALITY AND WELL-BEING IN GREAT LAKES POST-INDUSTRIAL CITIES A MULTIDISCIPLINARY EFFORT TO ASSESS DETROIT'S GREEN INFRASTRUCTURE

The Water Center is working to enhance freshwater research activities at the University of Michigan by fostering cross-disciplinary collaborations, encouraging new linkages to freshwater issues in research and courses, and providing more opportunities to study and learn about the Great Lakes and other large freshwater systems.

Through this funding effort, the Water Center is increasing U-M's capacity to contribute solutions to the protection and restoration of freshwater systems.

FOR MORE INFORMATION

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PROJECT SUMMARY

Several Great Lakes post-industrial cities, including the city of Detroit, Michigan, have adopted green infrastructure (GI) approaches in order to reduce excessive stormwater runoff, which can lead to combined sewer overflows. GI manages stormwater by employing distributed source controls that incorporate vegetation and soils to mitigate peak flows and treat associated pollutants. The result is improved freshwater quality.

The city of Detroit is characterized by large areas of vacant land and numerous abandoned structures. In 2014-2015, the Detroit Land Bank Authority (DLBA) and partners plan to demolish nearly 4000 abandoned structures, designing GI practices into demolitions at selected locations.

This project team will work closely with the DLBA to assess and compare four Detroit neighborhoods: two with GI treatments designed into demolition processes, and two control sites— one scheduled for demolition without GI treatments and another with no demolitions or GI treatments. The two main components of the study include:

- **Water quality and aquatic toxicology assessment:** The research team will install instrumentation and sampling equipment at GI sites, control sites, and at strategic locations within neighborhood watersheds to measure stormwater toxicity and contaminant loadings.
- **Neighborhood satisfaction, engagement, and health assessment:** The researchers will work with a community organizer from a represented site neighborhood to conduct a random sample survey that measures residents' perceptions of attractiveness and desirability of their neighborhood, interest and levels of community engagement, and health of residents near sample GI and control sites.

The project will culminate with a **Green Infrastructure, Water, and Well-being** forum with 15-20 Detroit decision makers, as well as continued work with DLBA to directly enhance adaptive management of GI in highly vacant neighborhoods.



Connect, engage,
revitalize...**PURE BLUE**



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