



Detroit Sustainability Indicators Project

With approximately 30% of Detroit’s land vacant and an infrastructure built for a population nearly three times its current size, numerous sustainable redevelopment ideas have been proposed for the city. In response to these challenges and opportunities, the University of Michigan’s Graham Sustainability Institute partnered with Data Driven Detroit on the Detroit Sustainability Indicators Project to develop data, tools, and analysis to help decision makers in Detroit consider sustainability in their planning efforts.

BACKGROUND

Developed from the notion that sustainability results from making better choices, and better data allow better decision-making, the project had two goals:

- Gather, assess, and share data on sustainability related topics
- Create a sustainability index for Detroit to help inform policy and decision making and serve as a model for other urban areas.

Data Driven Detroit (D3) is a regional organization that provides accessible, high-quality information and analysis to drive decision-making that strengthens communities in Southeast Michigan. In partnership with D3, the Graham Institute supported the following research over two years (each involving a community organization with specific expertise).

- **A Coordinated Analysis of Landscape Care, Commitment & Investment in Vacant Residential Areas of Detroit:** Joan Nassauer, Natural Resources & Environment; Margeret Dewar and Eric Dueweke, Architecture & Urban Planning
- **Liquid Planning Detroit – Water Quality & Watershed Management in Metropolitan Detroit:** Jen Maigret and Maria Arquero de Alarcon, Architecture & Urban Planning; Nicole Scholtz, University Library
- **Regional, Spatial, & Temporal Mapping of Air Pollution in Detroit:** Stuart Batterman, School of Public Health
- **Economic Disparity and Federal Investments in Detroit:** Brian Min and Jowei Chen, Political Science, LSA
- **Measuring the Greenness of Cities – A New Methodology for an Urban Sustainability Index:** David Bieri, Architecture & Urban Planning

LEARN MORE

For more information including copies of the reports, visit:

<http://graham.umich.edu/emopps/detroit/datadriven>

See more about D3 at: datadrivendetroit.org

SUPPORT

The Graham Sustainability Institute engages, empowers, and supports faculty and students from all U-M units and integrates this talent with external stakeholders, fostering sustainability solutions at all scales. We believe that diversity is key to individual empowerment, and the advancement of sustainability knowledge, learning and leadership. Individuals, corporations, foundations, government agencies, and the University of Michigan support the Institute. See: www.graham.umich.edu



OUTCOMES

The project generated valuable data and findings to support decision-making on a range of sustainability issues in Detroit, and it leveraged additional funding for further engagement and capacity-building.

DATA ACCESS

Publicly sharing the generated data was one of the project's primary goals. The final spatial (GIS) data products are available through D3 and will be integrated into D3's broader database as appropriate to allow users to compare multiple data sets simultaneously.

KEY FINDINGS & RECOMMENDATIONS

In addition to the data, each team produced a summary report including recommendations for data use and potential policy options for decision makers using the data.

VACANT RESIDENTIAL AREA

Surveys of 9,000+ parcels in two neighborhoods revealed differences among highly-vacant areas that may require different planning and landscape approaches to achieve better long-term outcomes for residents. The Detroit Land Bank Authority adopted concepts from the project to guide the ecological design of demolition sites.

STORMWATER MANAGEMENT

Spatial data analysis identified opportunities to repurpose vacant land to improve stormwater management and transform civic space. Award-winning, realistic 2- and 3-D depictions of possible green infrastructure improvements illustrate the potential opportunities and can help build support for test projects.

AIR POLLUTION

New modeling improved estimates of near-road exposure to traffic-related air pollution in the city. These data help identify potential "hotspots" and critical locations, like schools, hospitals, and parks, where children and other susceptible individuals may be highly exposed to air pollutants linked to asthma and cardiovascular disease.

FEDERAL INVESTMENTS

Federal investments are critical to a city's infrastructure. Collection and analysis of four decades of data revealed that federal grants remained stagnant in Detroit from the mid-1990s even as they increased in other Rust Belt cities. The data show how funding changed across Detroit's neighborhoods, and analysis can help identify factors that helped organizations succeed in finding alternative funding.

MEASURING SUSTAINABILITY

A new sustainability index provided further evidence that "greenness" correlates to increased urban quality of life. Unlike other indices, this new approach uses comprehensive, economically meaningful, and comparable measures of sustainability that make it suitable for policy making in Detroit and other cities.

NEW OPPORTUNITIES & ENGAGEMENT

The former U-M Center for Advancing Research and Solutions for Society (CARSS) provided funding for Graham and D3 to conduct a three-year series of workshop focused on using sustainability data. These hands-on workshops introduce stakeholders and decision-makers from city government, neighborhood groups, environmental justice organizations, and foundations to the information and tools from the projects and D3's database, and build capacity for data-driven decision making. The ultimate goal of the workshops is to empower Detroiters to integrate sustainability into their planning efforts by drawing on the data, tools, and analyses produced through the Sustainability Indicators Project.

