Water Resilient Cities: Climate Change, Infrastructure, Economies and Governance in the Great Lakes Basin

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Climate Change, Infrastructure, Economies and Governance in the Great Lakes Basin

April 21 & 22, 2016
Levin College of Urban Affairs
Cleveland State University
Wendy A. Kellogg, Conference Chair
Purpose of the Conference

• Make connections
• Connect conversations of Great Lakes and urban water professionals to urban sustainability managers and planners
• Explore innovative water management frameworks and practices to prepare for climate change
• Deepen our understanding of interdependencies among water infrastructure, economies and governance
• Identify climate vulnerabilities and response assets and opportunities in the legacy cities of the Great Lakes basin
Who is Here?

• ~140 people registered

• Vermont, New York, Ohio, Indiana, Michigan, Illinois, Wisconsin, Maryland, Virginia, Massachusetts, North Carolina, Kansas

• City, county and MPO planning departments, engineering consulting firms, planning and landscape architecture firms, water technology companies, recreation industry, regional sewer districts, city water departments, watershed and basin-wide NGOs, policy and research centers, elected officials, Sea Grant extension agents, law firms, universities, state and federal agencies, port authorities, funding entities and foundations!
The Resilience Framework

- Capacity of a social-ecological system to absorb or withstand perturbations and other stressors ...to maintain its structure and functions....the degree to which the system is capable of self-organization, learning and adaptation.

- Ability of assets or systems to anticipate, absorb, adapt and/or rapidly recover from a disruption event
  - H. Brown, 2014
Social-Ecological Systems

- Complex, adaptive, co-evolving in reciprocal relationships
- Cities co-evolve with surrounding landscape and waterscape
- Lakes evolve in response to human activities, including cities
- Great Lakes cities different than others

- **Nestedness**: system components may be subsystems with components of their own
- **Adaptiveness**: constant reorganization to maximize resource and energy efficiency
- **Nonlinearity**: manipulation may result in an outcome of unexpected magnitude
- **Emergence**: properties or behavior may only be explainable by the sum of dynamics at a higher level

Martin, et al 2015
Change:
Thresholds, Tipping Points and Feedback Loops

http://www.conservationofchange.org/resilience/

Cosens, et al 2014
Urban Resilience

Great Lakes Ecosystem

Metabolic Flows
- Production, supply and consumption chains

Governance Networks
- Institutional structures and organisations

Great Lakes Cities

Social Dynamics
- Demographics, human capital and inequity

Built Environment
- Ecosystem services in urban landscapes

Civic Explorer, 2016
Citations


Plenary

• Elizabeth Gibbons, Director, Climate Center and Program Manager, GLISA, University of Michigan
• John Austin, Director, Michigan Economic Center, Ann Arbor, MI
• Carol Howe, Director, ForEvaSolutions, Pittsburg, PA
Variations on Conference Themes

• Katy Lackey, Water Environment Research Foundation
• Derek Kauneckis, Voinovich School, Ohio University
• Tom Denbow, Biohabitats
• Bryan Stubbs, Cleveland Water Alliance
• Sanda Kaufman, Levin College, CSU