Urban Water Innovation Network

Transitioning toward sustainable urban water systems

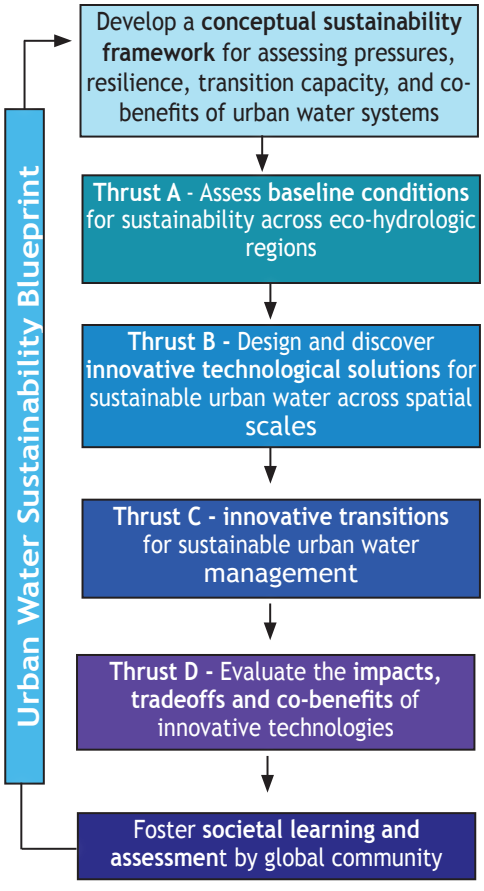
National Science Foundation
WHERE DISCOVERIES BEGIN

Project C2-1

Homeowner Adoption of Sustainable Urban Water Solutions

PROJECT OUTPUTS

Our results will have direct implications for the strategies used to educate the public about the technological solutions included in the UWIN Sustainability Blueprint. We will craft suggestions for policy instruments that might encourage choices that lead to more sustainable outcomes and reduce water related risks across the network.



Strategies for improved flood resilience, stormwater management, distributed infiltration, green infrastructure, and community scale reuse of reclaimed and graywater are at varying stages of development and implementation.

Technological innovations mean little if they are not widely adopted by homeowners and communities. Understanding household scale adoption of these different strategies, and the factors that influence it, is critical to the identification of promising pathways toward sustainability.

However, understanding how adoption decisions are made, and might be influenced, is challenging for an array of reasons that include the distant time horizons involved, the lack of contemporary understanding of the technology, and the ultimate dependence of adoption on social and media factors that are difficult to forecast. The key questions to be addressed include:

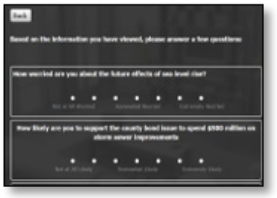
- How likely are different technological solutions to be adopted by current and future households?
- How can those strategies be refined to increase the chances of large-scale uptake?
- What are the most effective methods of education and communication for these different water technologies?

The purpose of this project is to clarify and learn about how adoption decisions are made by exploring the ability of dynamic information acceleration (DII) to model how future adoption decisions will likely be made.

Temporal Orientation (Acceleration)

Information Gathering Module

Decision Module



CHOICEFLOW MODEL

The research uses an innovative approach that guides participants through a computer simulation program, Choiceflow, to simulate future conditions where choices about technology/policy must be made (see above).

By studying individuals' decision-making behaviors, such as information seeking behaviors, investment choices, support for policy, and perceptions of strategies/technologies, we will improve our understanding of the likelihood of adoption of different urban water management practices and the barriers that might inhibit widespread adoption.

Using this information, we will suggest strategies for policy and investment that incorporate peoples' preferences and decision-making biases, making them more likely to be accepted.

DATA COLLECTION

Through household scale surveys, which are embedded in computer simulations, (using a program developed for the project called Choiceflow) we will collect data including:

- Information on individual preferences about:
  - Technological innovations
  - Municipal water policies
  - Conservation/adaptation practices
- Willingness to pay for different water technologies
- Data on indvidual information seeking behaviors

We will conduct surveys across the six UWIN regions and plan to administer multiple rounds of surveys to examine different questions.

PROJECT KEYWORDS

- Decision-making behaviors
- Dynamic information acceleration (DII)
- Conservation/adoption decisions
- Household-scale surveys

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