The role of local water sources in the water sustainability of Los Angeles

A synthesis project funded by the National Science Foundation

<u>Principle Investigators</u>: Diane E. Pataki, University of Utah Stephanie Pincetl, UCLA Terri Hogue, Colorado School of Mines









In 2011 the NSF Water Sustainability and Climate (WSC) program solicited research proposals to:

- Develop theoretical frameworks and models to predict potential changes in water resources
- Determine inputs, outputs, and potential changes in water budgets
- Determine how built water systems and governance can be made more reliable and resilient

We assembled an interdisciplinary research team to respond to the RFP:



Diane Pataki, Professor of Biology and Adj. Professor of City & Metropolitan Planning Elizaveta Litvak, Postdoctoral researcher



Stephanie Pincetl, Director, California Center for UCLA Sustainable Communities (CCSC) Erik Porse, Associate Director, CCSC



Terri Hogue, Director, Professor of Civil & **Environmental Engineering** Kim Manago, Ph.D. candidate

Our over-arching goal was to address the question:

What is the current and potential role of local water resources in Los Angeles?

Local resources defined as:

- Groundwater
- Water recycling
- Conservation
- Desalination



### Specific questions:

- What is the current structure of groundwater, wastewater, and stormwater management?
- What is the regional water balance?
- What are the current constraints on local groundwater and rainwater resources?
- How do the ecohydrologic and decisionmaking domains of local water resources compare and contrast?
- What are feasible targets for conservation and recycling measures?

# Synthesizes data collected in previous projects:

- Study of the institutional and water implications of the Los Angeles Million Tree program
- Analysis of water consumption and outdoor water use in LA
- Measurements and modeling of the hydrology of the Ballona Creek Watershed



## Contact information for researchers not in attendance:



Elizaveta Litvak elitvak@uci.edu



#### Terri Hogue thogue@mines.edu

#### Today's Agenda:

- 1. Landscape water use
  - Transpiration of landscape plants
  - Evapotranspiration of Los Angeles
- 2. Hydrological modeling
- 3. Institutions and water management
  - Institutional complexity
  - Groundwater management
- 4. Water system modeling
- 5. Conclusions and Recommendations