

Fine-resolution Modeling of Urban-Energy Systems' Water Footprint in River Networks

- Urbanizing areas are supported by competing water demands and energy production.
- Sustainable urban growth lies in characterizing inter-dependencies among urban systems, energy producers, and water resources.
- Existing water use data is coarse and insufficient
- Modeling hydrology within river networks at an unprecedented scale that provides a novel approach to integrate urban-energy infrastructure into a spatial accounting network for water budgets
- Water Footprint = changes in *quantity* and *quality* of flow in river networks

- Characterize current and future water footprints of integrated urban-energy systems
- Evaluate tradeoffs among urban-energy development, water resources, and natural river ecosystem sustainability
- Accurate accounting of water use at spatial and temporal scales meaningful to decision-making

