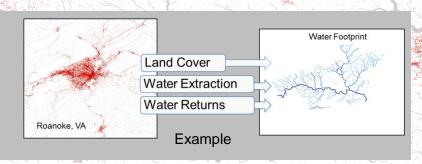


Task 1 Task 2 River Network Predictive Modules Model Water → Urban Energy → Urban **SWAT** Water → Energy Urban-Energy Future Projections System Water Footprint Task 3 Future Projections **Ecosystem** Response

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



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