Boston Smart Utilities Workshop

Urban Systems Modeling

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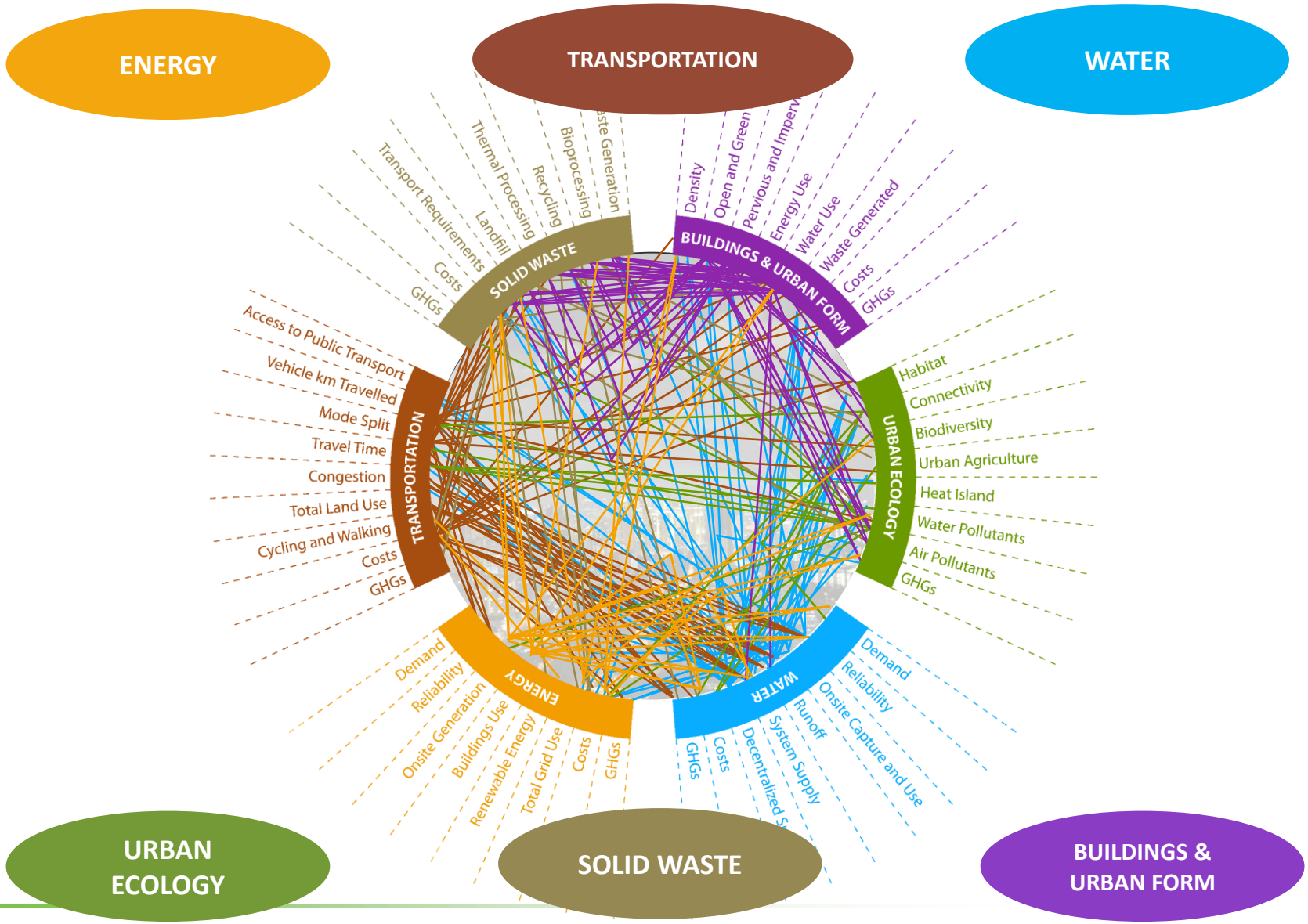
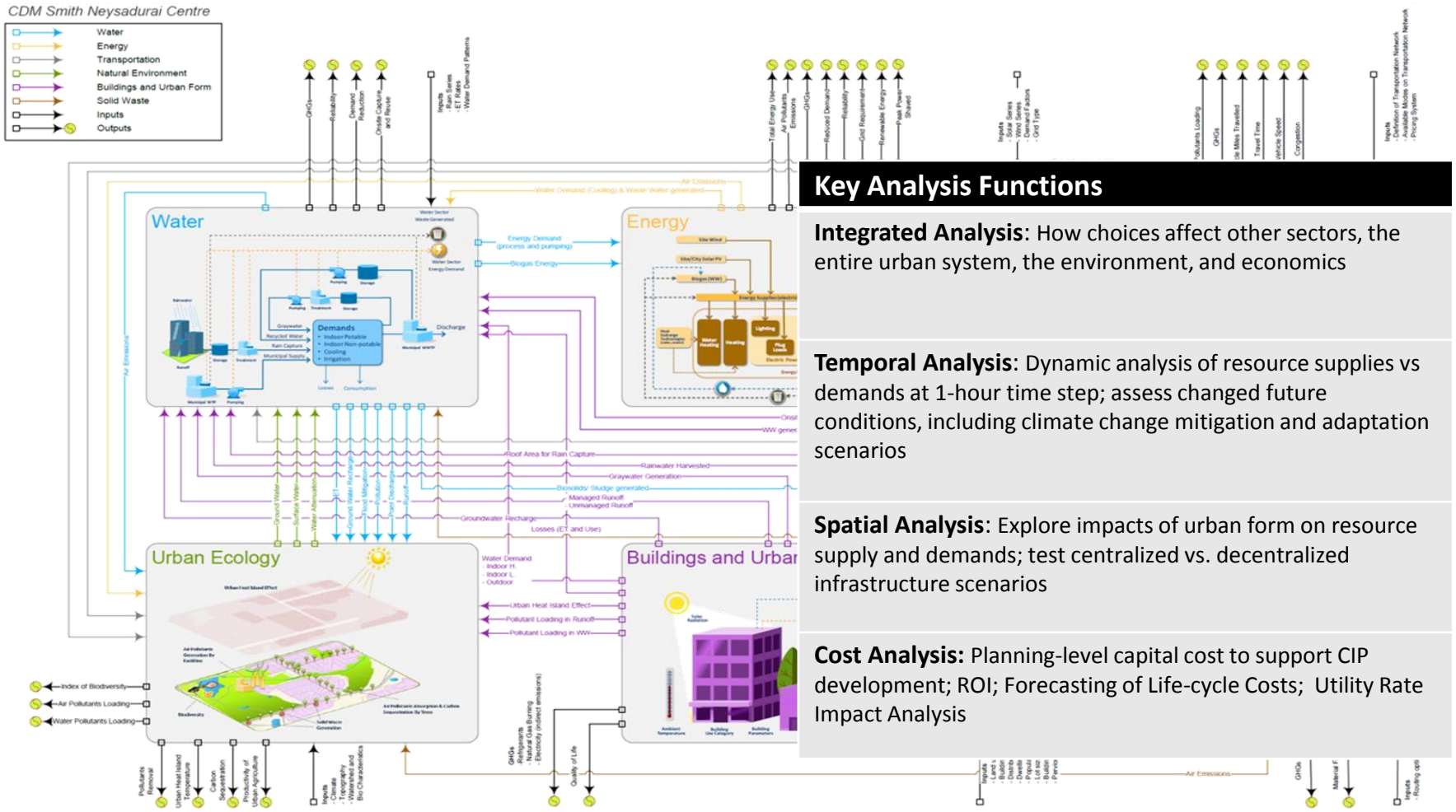
CDM Smith

Urban Systems Model – Input Data



Urban Systems Model – Logic Diagram



Key Analysis Functions

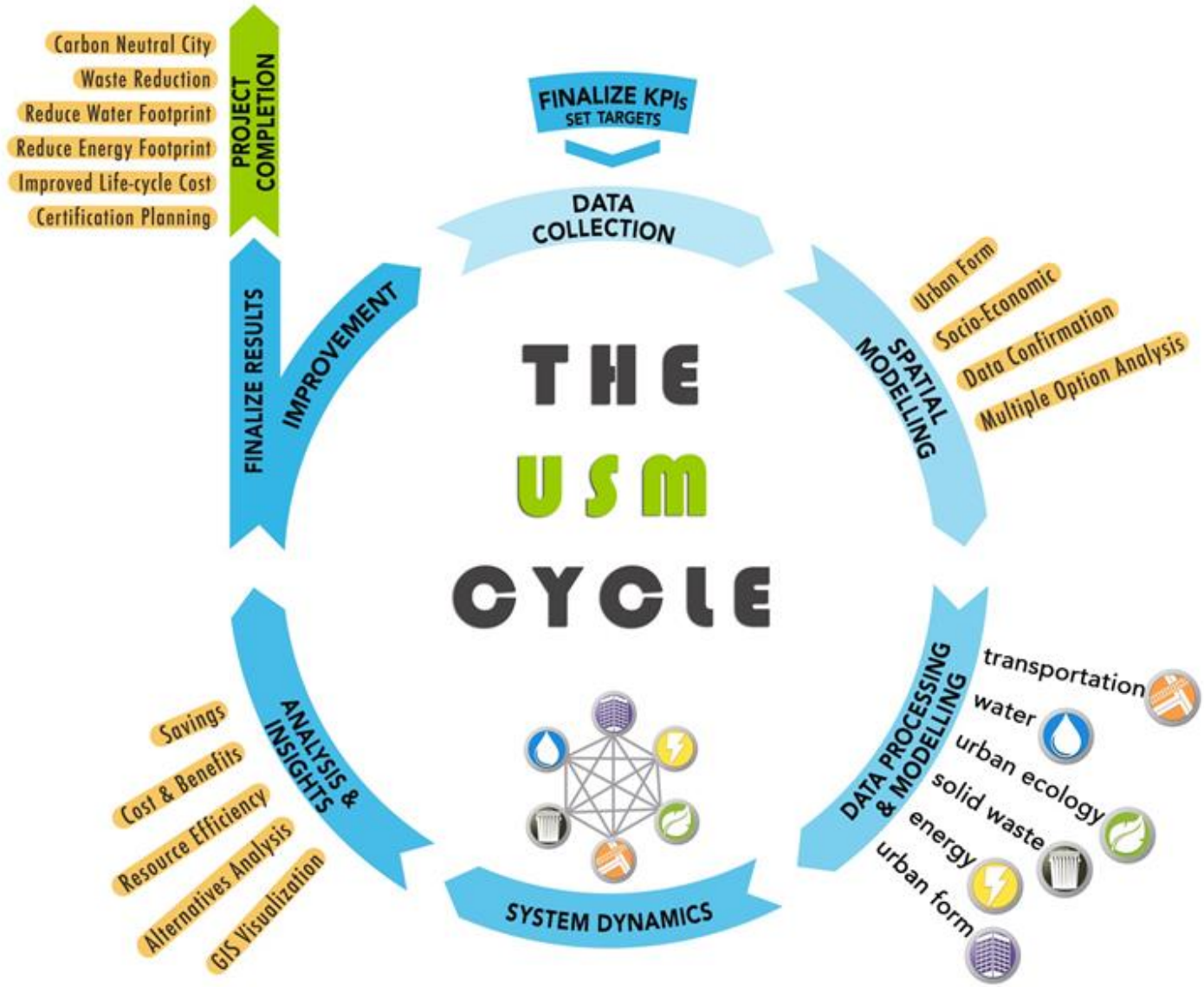
Integrated Analysis: How choices affect other sectors, the entire urban system, the environment, and economics

Temporal Analysis: Dynamic analysis of resource supplies vs demands at 1-hour time step; assess changed future conditions, including climate change mitigation and adaptation scenarios

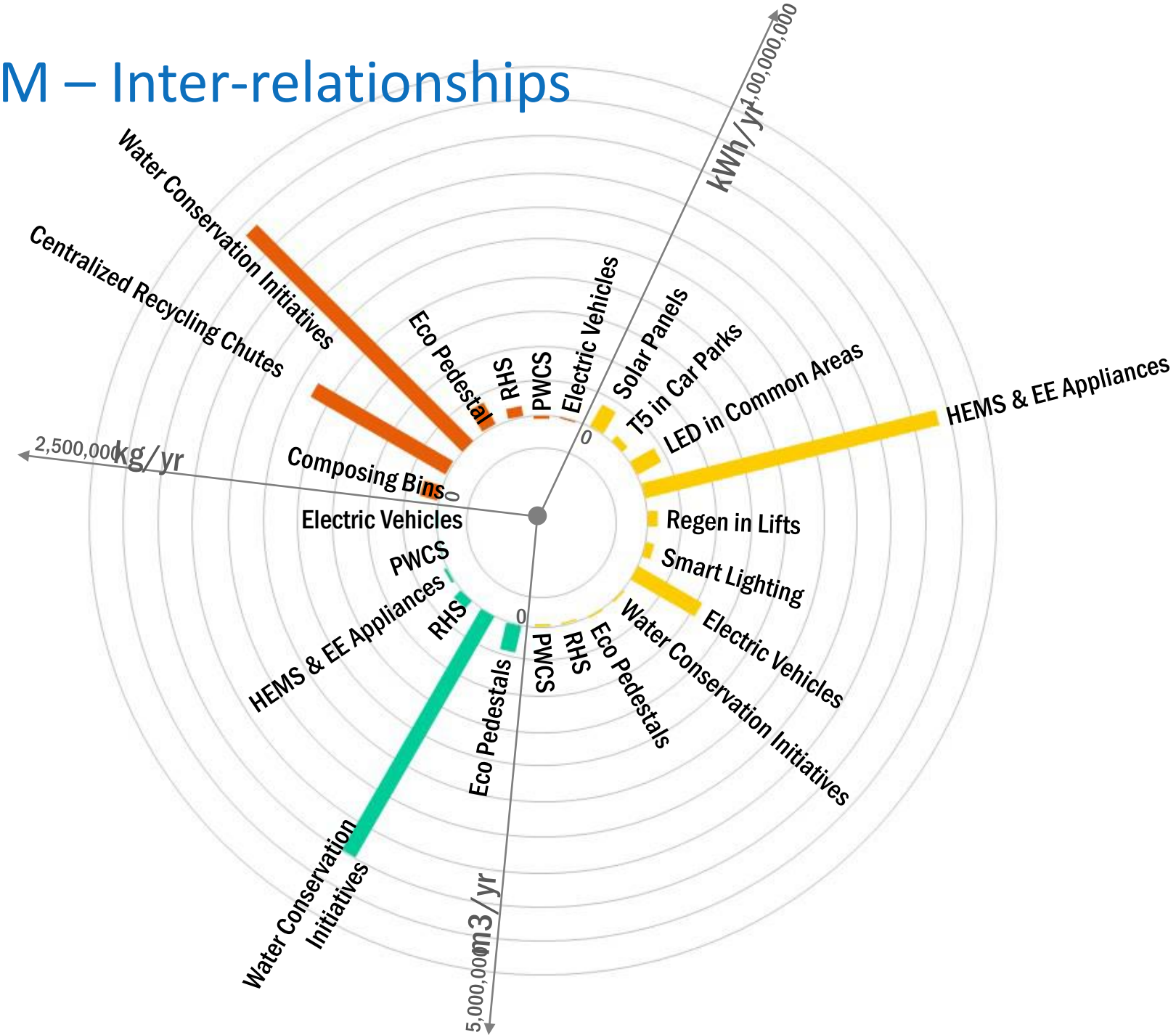
Spatial Analysis: Explore impacts of urban form on resource supply and demands; test centralized vs. decentralized infrastructure scenarios

Cost Analysis: Planning-level capital cost to support CIP development; ROI; Forecasting of Life-cycle Costs; Utility Rate Impact Analysis

Urban Systems Model – Cycle



USM – Inter-relationships



Urban Systems Model – Overall Performance