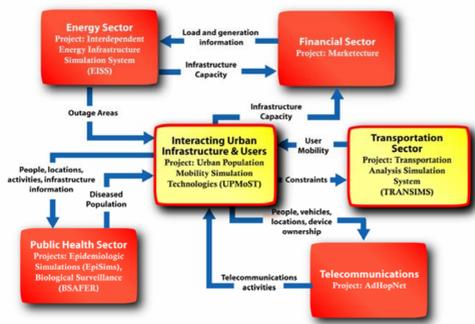




National Infrastructure Simulation & Analysis Center

Transportation/infrastructure User Sector
 Point of Contact: Dick Beckman - rb@lanl.gov

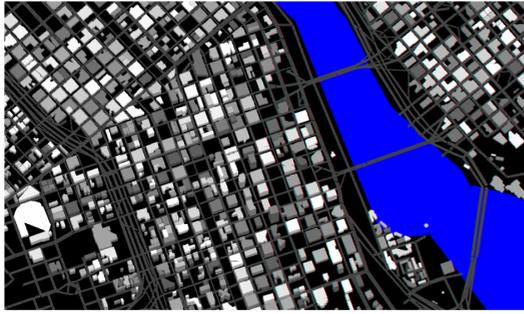


UPMoST: Adds Constraints to Transportation Sector

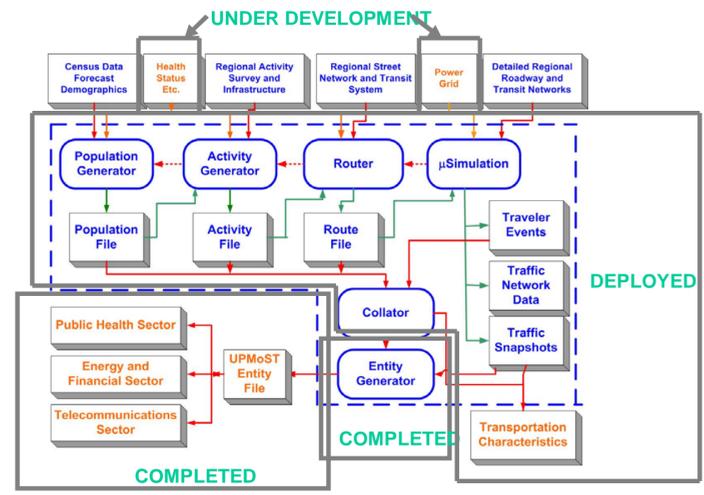
- TRANSIMS is a social simulation that mimics the behavior of every individual in a regional area: where they are, why they are there, what they are doing, how they got there, who they went with, at any time of the day.

Some Examples of Use

- Mitigation plans for a biological attack with diseases spread by human contact depend on knowing the contact patterns.
- Future year telecommunications networks depend on the location of individuals in the population during the day. Vulnerabilities in these networks can only be assessed by knowing these locations.



UPMoST/TRANSIMS Data Flow



Population

Representation of Each Household in Region

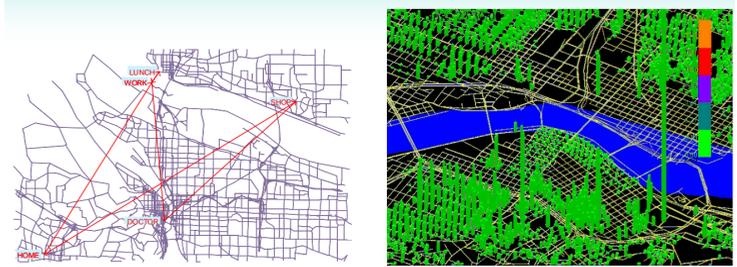


Age	30	28	5
Income	\$26K	\$22K	\$0
Status	worker	worker	student
Car	1	1	0

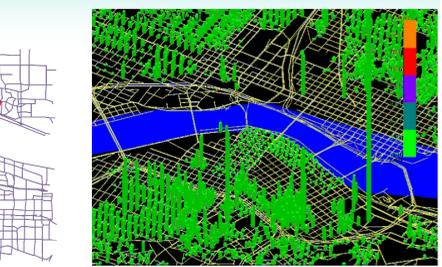
Activities of Population

(By Time of Day)

Itineraries Constrained by Infrastructure



First person in household



Microsimulation



Vehicles Interact With Each Other



Second person in household

Travel Routes and Modes

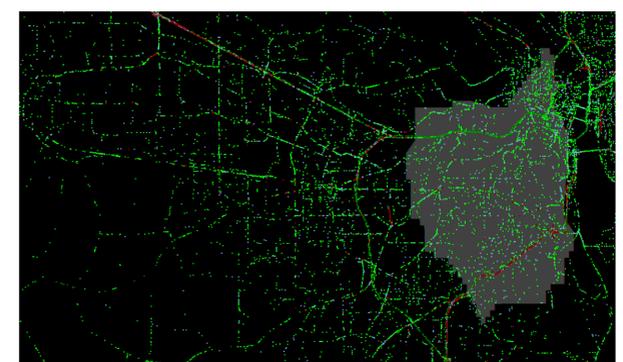
Routes Constrained by Roadway, Walkway, Transit Service



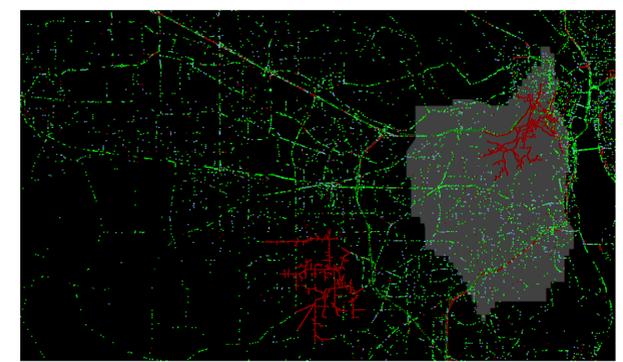
First person in household



Second person in household



Microsimulation Larger View



Microsimulation with Power Outage