A Public Transportation System Performance Measurement Web Application

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Ground Transportation Technology Symposium

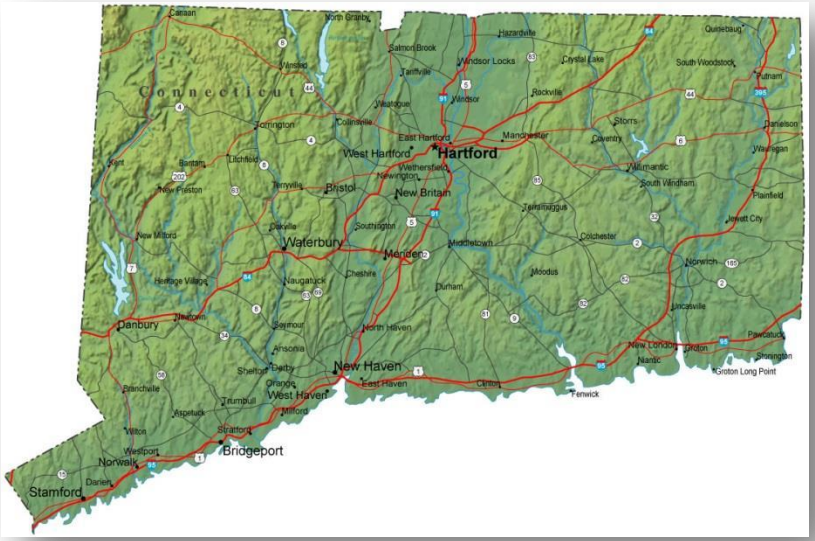
New York, NY

UCONN

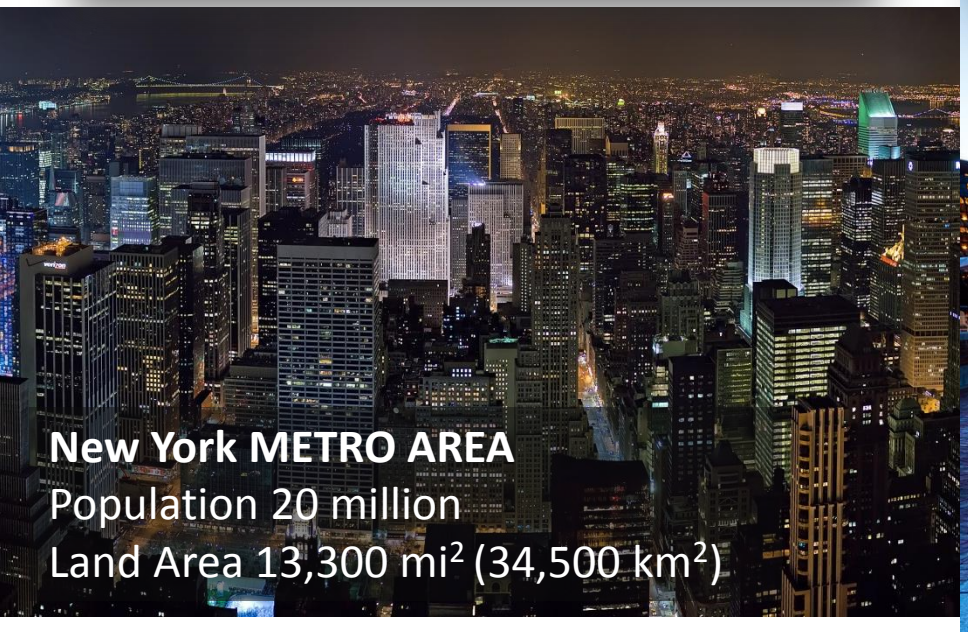
Three topics:

- Application context and background
- Brief demonstration
- New analytical tool development

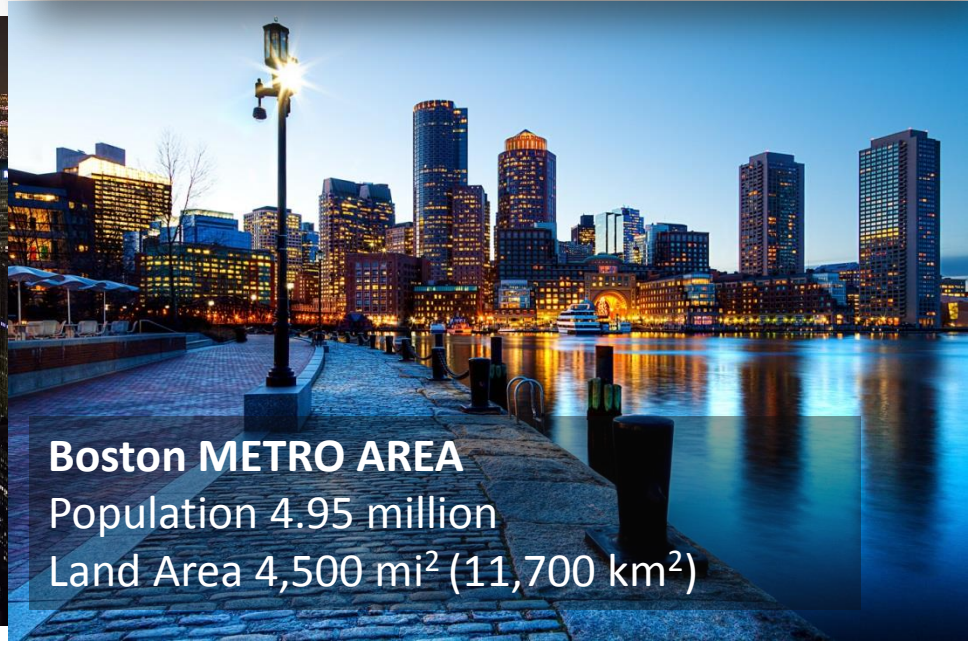
CONNECTICUT
Population 3.5 million
Land Area 5,500 mi^2 (14,300 km^2)



SEATTLE METRO AREA
Population 3.5 million
Land Area 5,900 mi^2 (14,400 km^2)

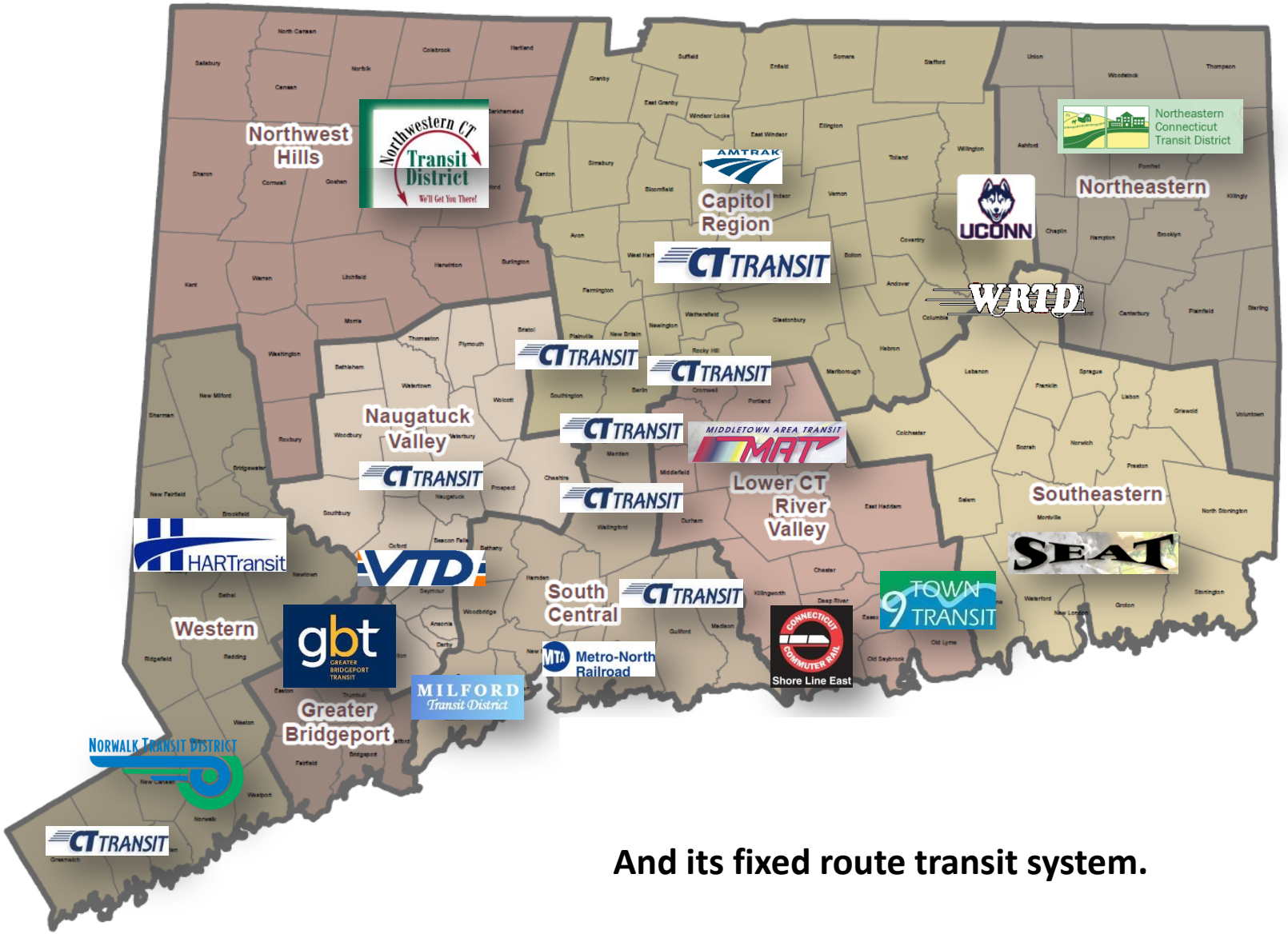


New York METRO AREA
Population 20 million
Land Area 13,300 mi^2 (34,500 km^2)



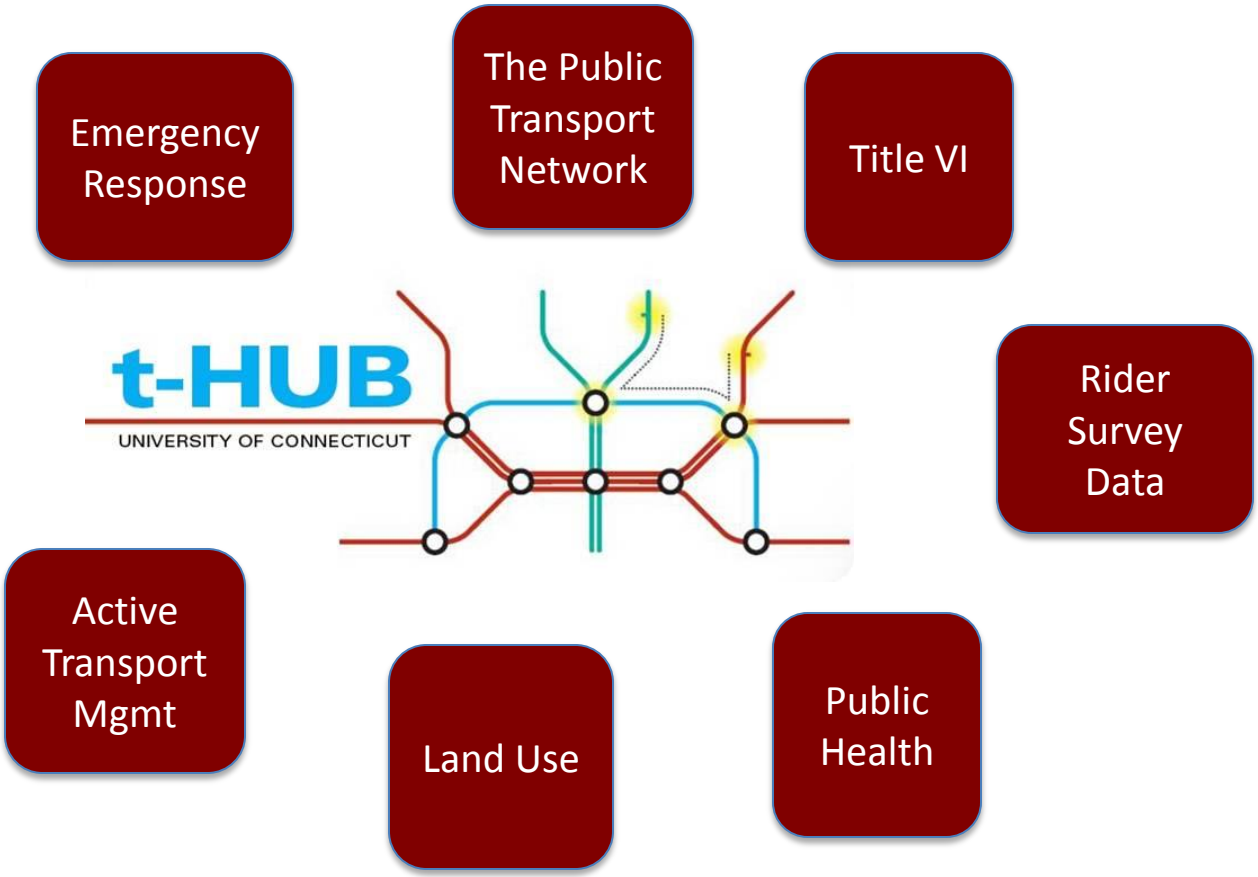
Boston METRO AREA
Population 4.95 million
Land Area 4,500 mi^2 (11,700 km^2)

Connecticut's 9 Regional Planning Organizations (RPOs)



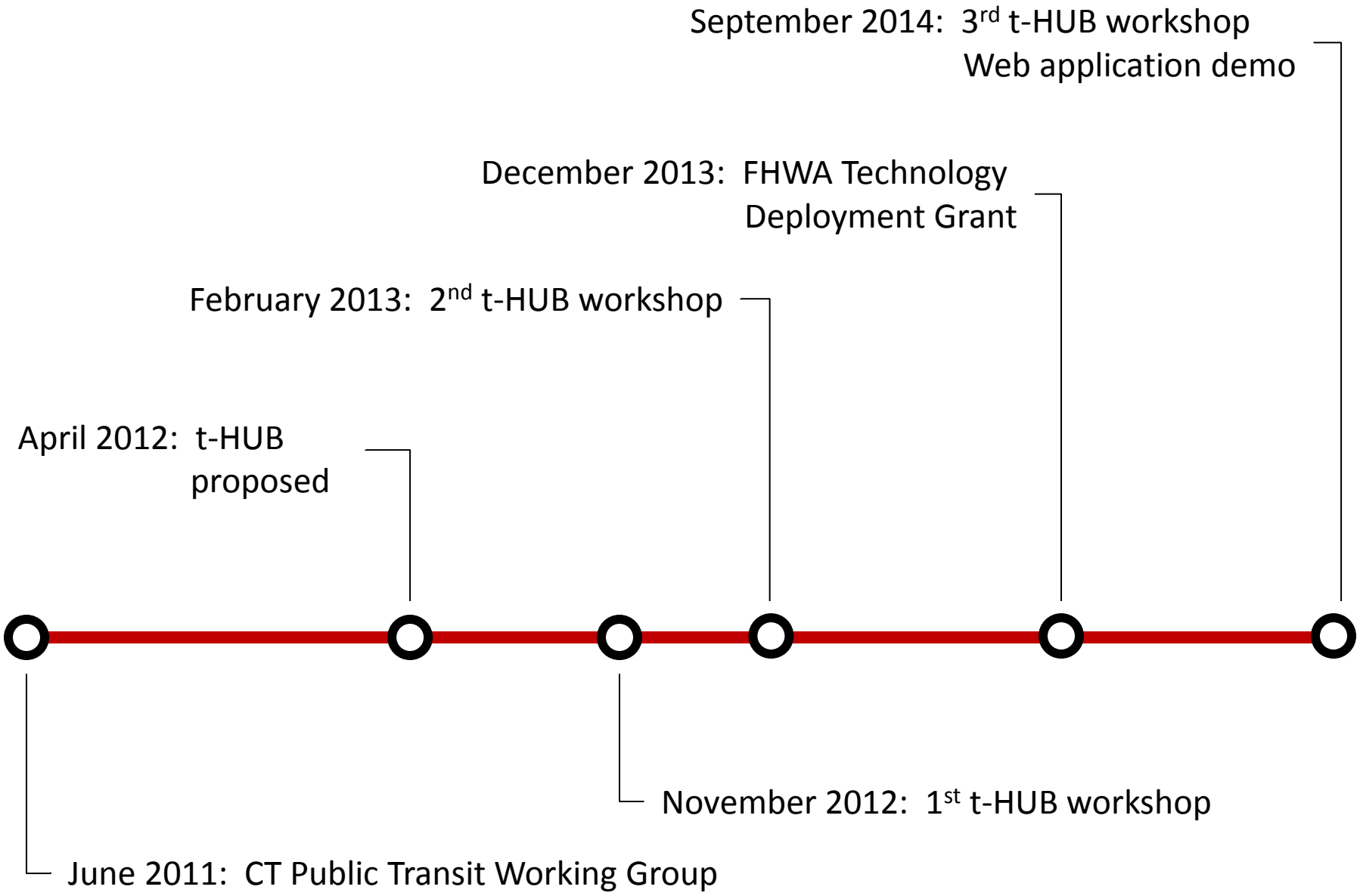
And its fixed route transit system.

Public Transit Planning Application



http://thub.uconn.edu

t-HUB Chronology



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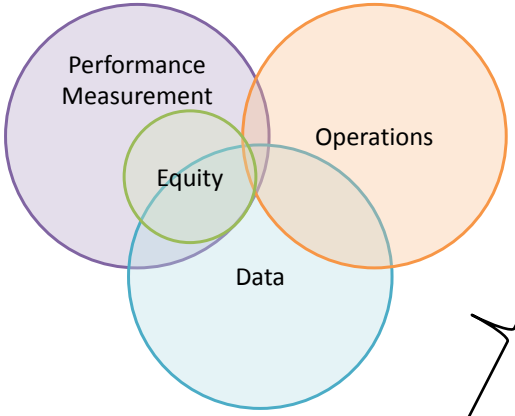
UTC

U.S. Department of Transportation Federal Highway Administration

UCONN SCHOOL OF ENGINEERING

CTLS CENTER FOR TRANSPORTATION AND LIVABLE SYSTEMS UNIVERSITY OF CONNECTICUT

Data Elements



Performance Data

- Load factor, on-time %, headways
- Real-time integration

Census Data

- CT State Data Center
- Demographic & socio-economic data

System Data

- GTFS
- Network and schedule structure

A note to those viewing this presentation online: The link below will not work unless you are behind the UConn firewall.

We plan a public launch in August 2015, at which time you will be able to access t-HUB through a public url with a username and password. I've inserted a mock up of the Interactive Analysis tool on the next slide for reference.

Please feel free to contact me with any questions or visit the t-HUB website at http://thub.uconn.edu.

Brief demonstration

http://mmucc-map.ad.engr.uconn.edu/thub/

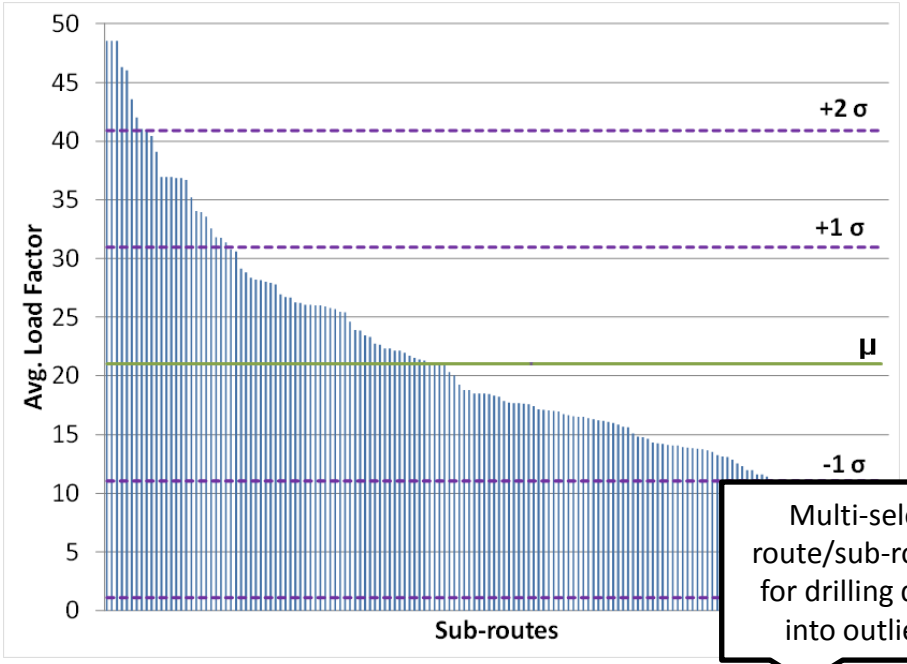
Interactive Analysis

Change parameters for interactive analysis. Information provided in tooltips like these.

Parameters

- Select Transit System
- Select Performance Measure
- Select Demographic Group
- Select Demographic Spatial Unit
- Select Buffer Distance

Histogram



Multi-select route/sub-routes: for drilling down into outliers.

Summary Results

Parameters:

Summary of selected parameters

System:

Summary results on the selected system.

Route:

Summary results on the selected route.

Ability to export data and generate printable report.

Outliers

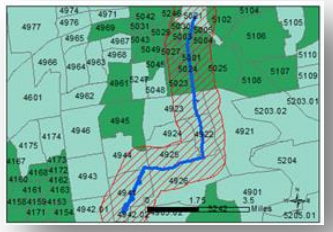
Sub-route	Route	Value
MCC FLYER-HARTFORD VIA I-84	85	41
BURNSIDE AV-MAYBERRY VILL VIA SCOTLAND RD	88	41.01
BURNSIDE AV-MAYBERRY VILL VIA ROBERTS ST	88	42.01
MCC FLYER-MCC VIA I-84	85	43.57
HARTFORD VIA NEWINGTON CTR	41	46
NEW BRITAIN via Newington Ctr	41	48.55

Route/Sub-rou

Routes

30
31
32
33
34
35

Map



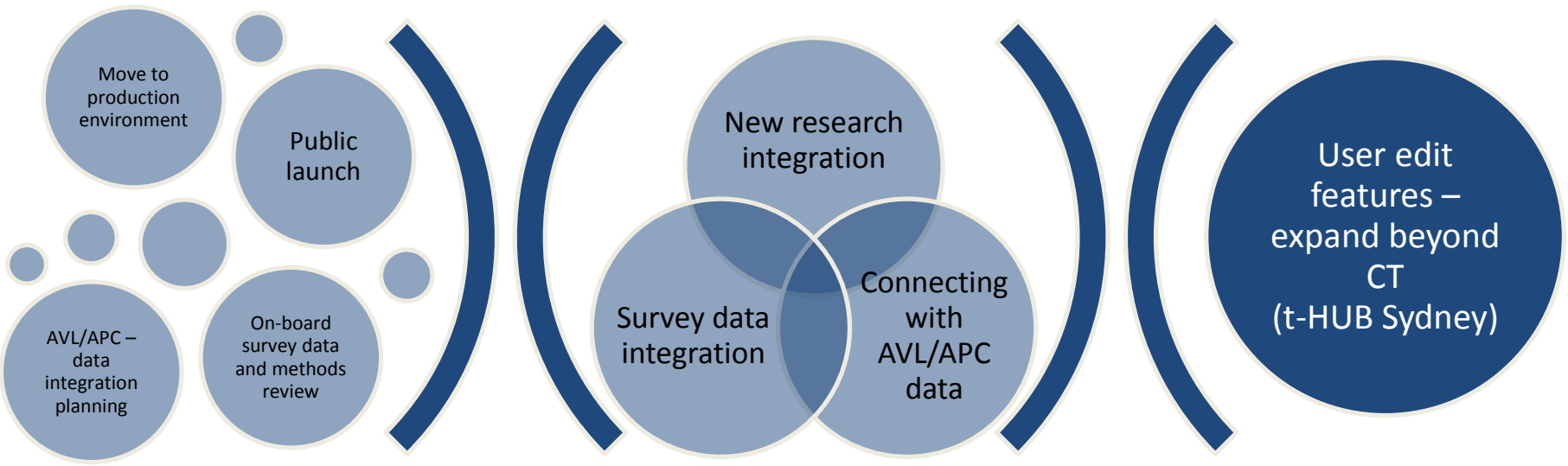
Reports

Generate Report

Generate Data

Start Over

t-HUB Next steps



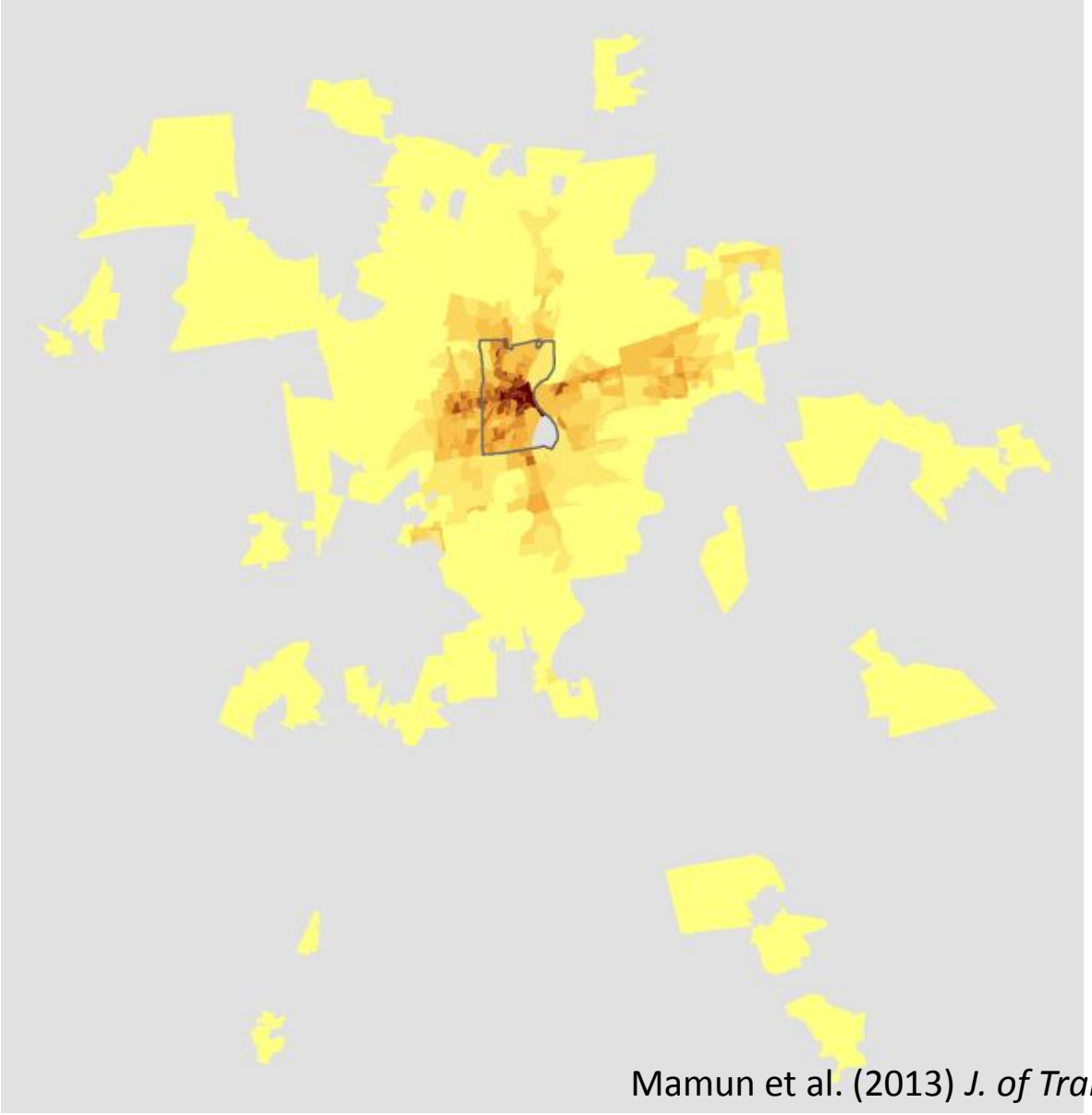
Next year

1-2 years

2+ years

New Analytical Tools

TOI: Transit Opportunity Index (Hartford, CT)



AM Peak

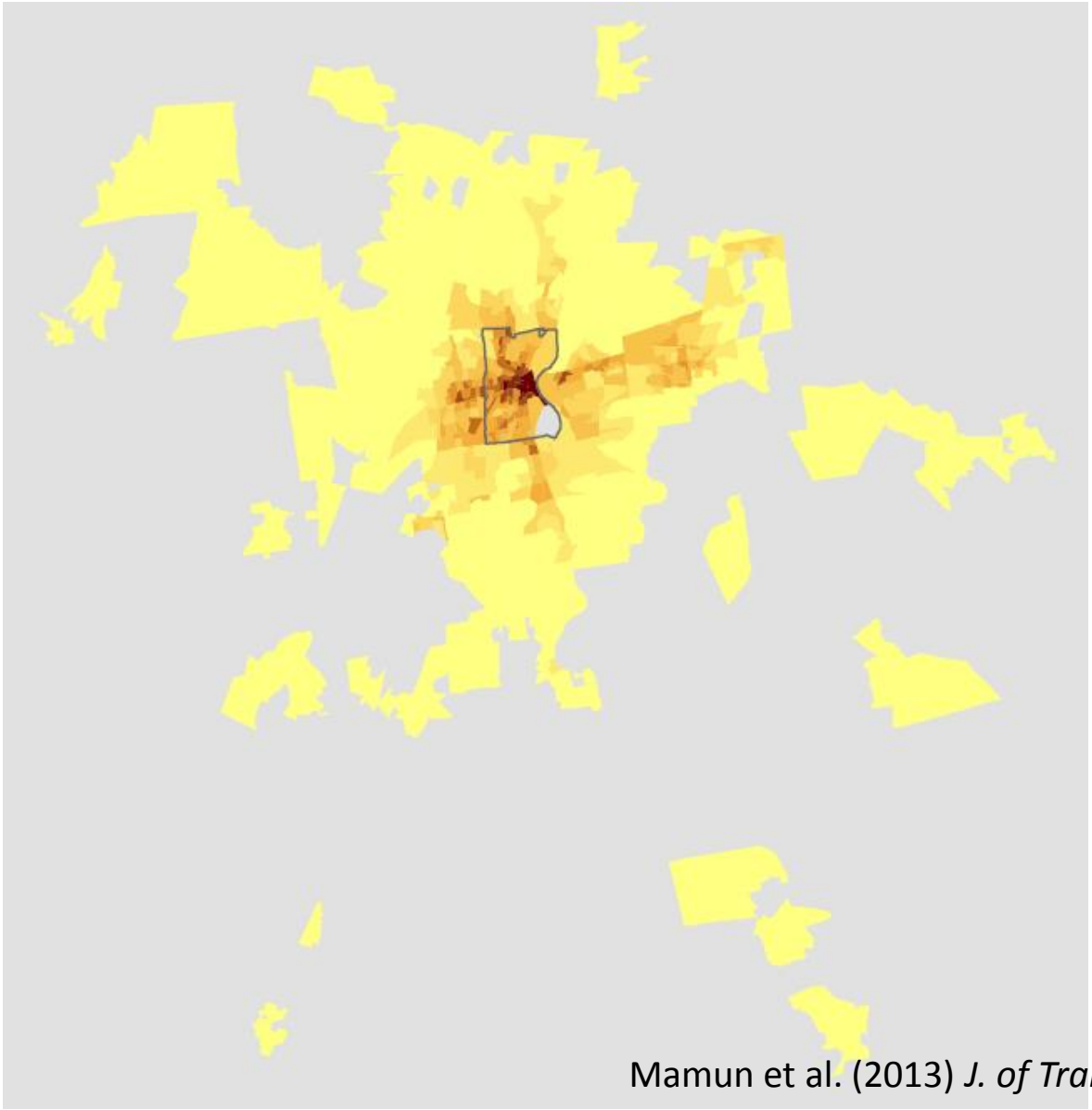
Mamun et al. (2013) *J. of Transport. Geog.*

TOI: Transit Opportunity Index

Inter Peak

Mamun et al. (2013) *J. of Transport. Geog.*

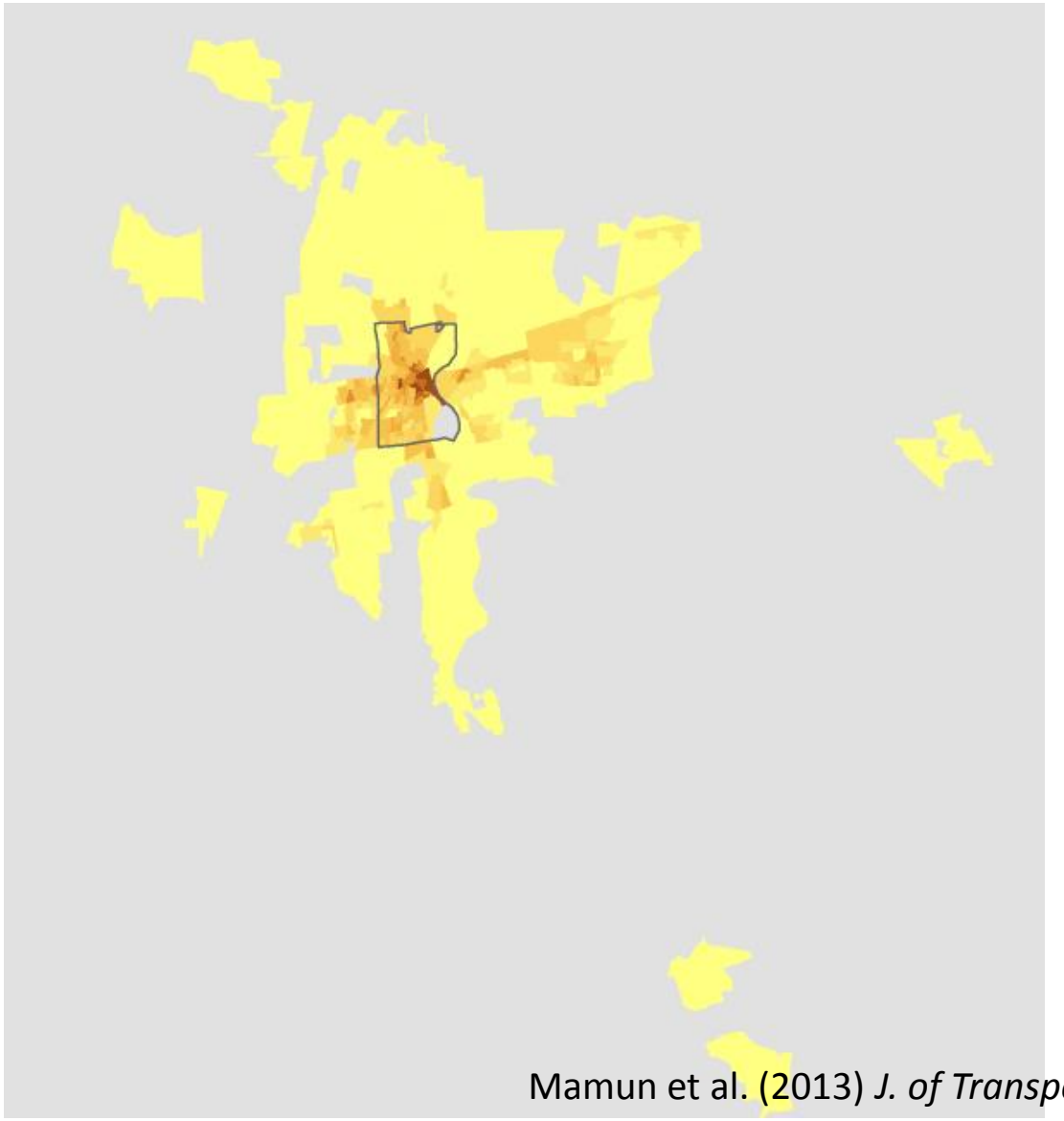
TOI: Transit Opportunity Index



PM Peak

Mamun et al. (2013) *J. of Transport. Geog.*

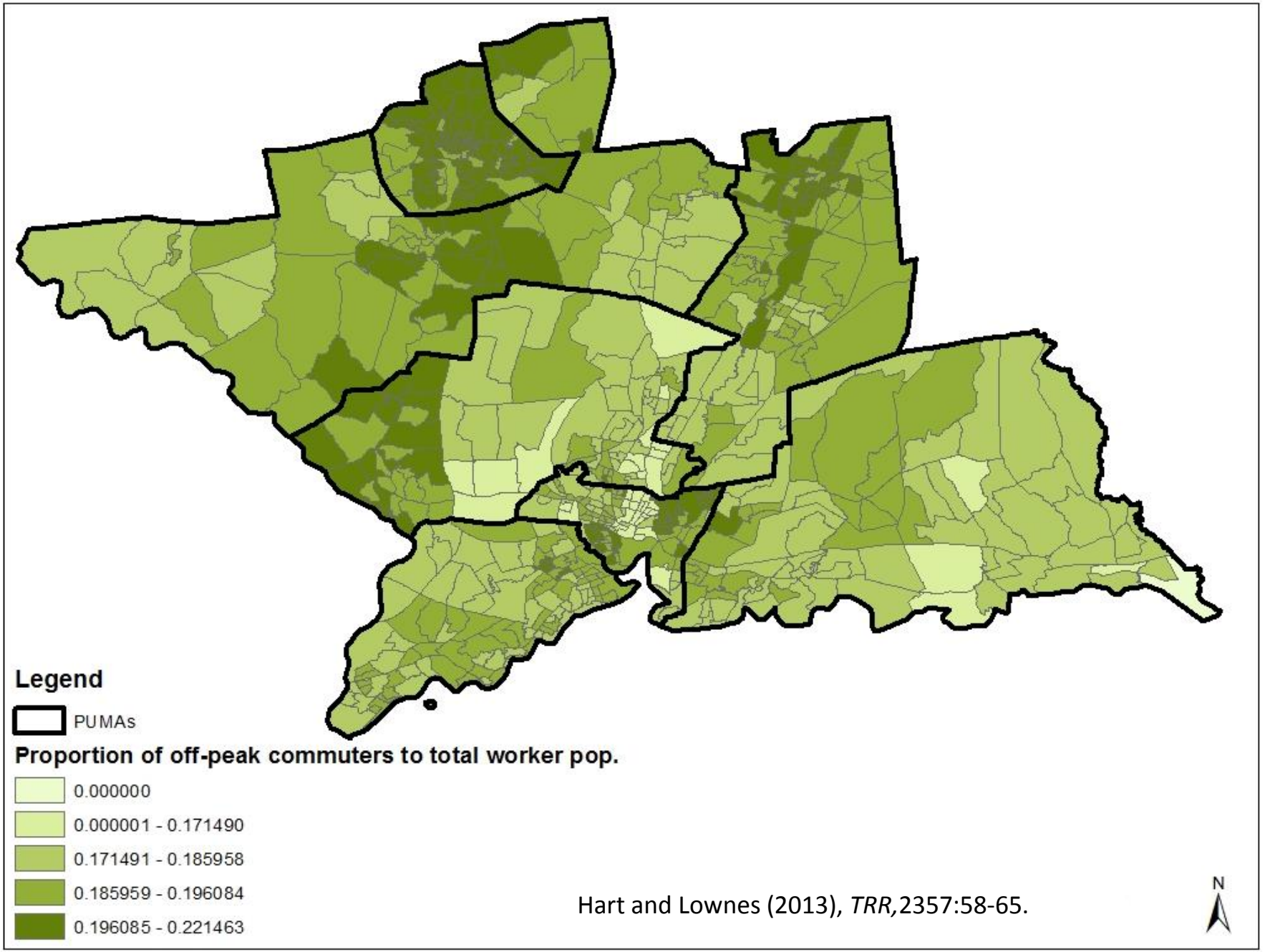
TOI: Transit Opportunity Index



Off Peak

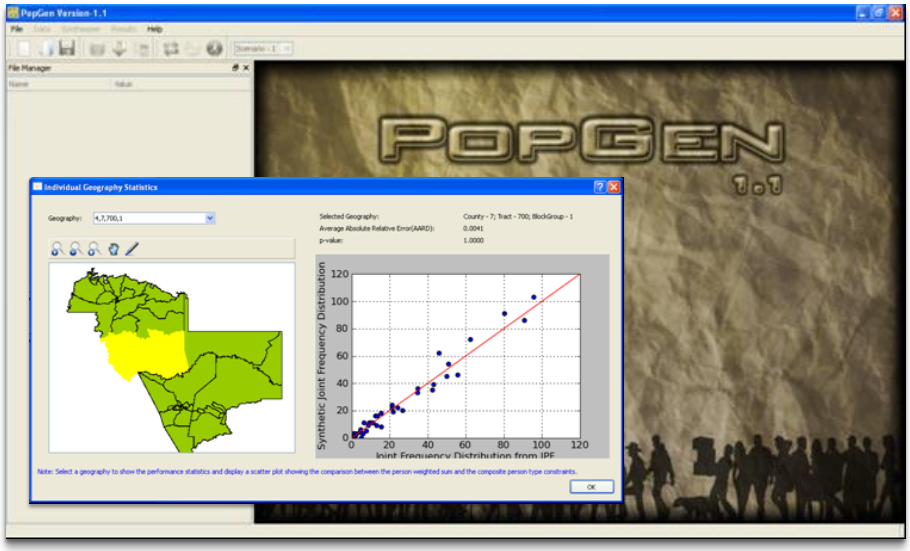
Mamun et al. (2013) *J. of Transport. Geog.*

Jobs Access (New Haven, CT)

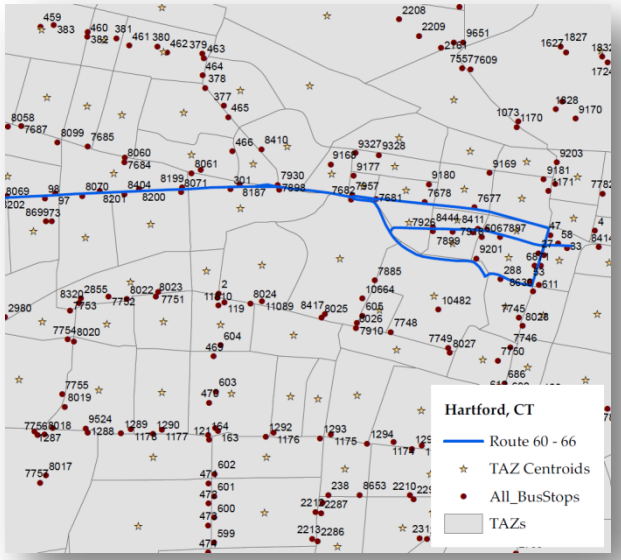


Hart and Lownes (2013), *TRR,*2357:58-65.

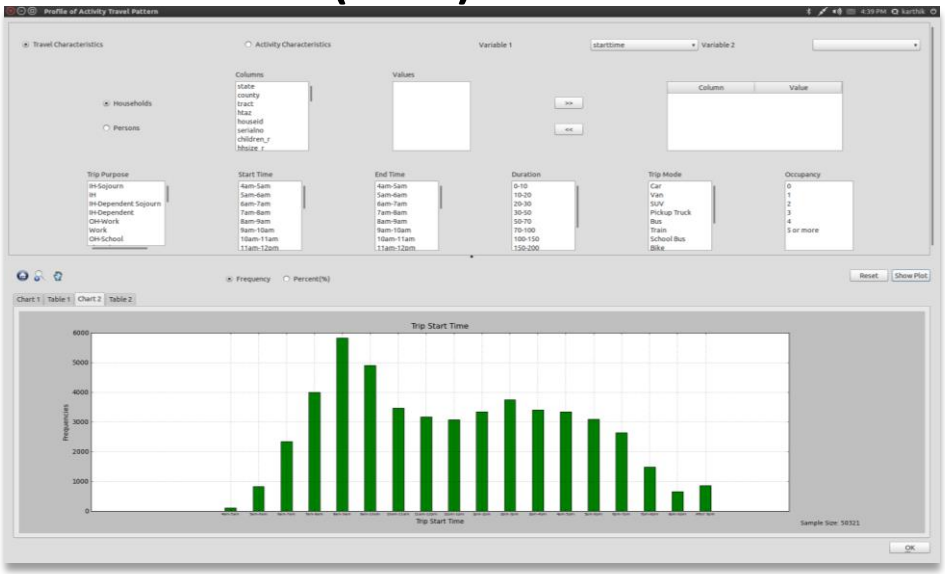
Who's on the bus? Advanced modeling integration



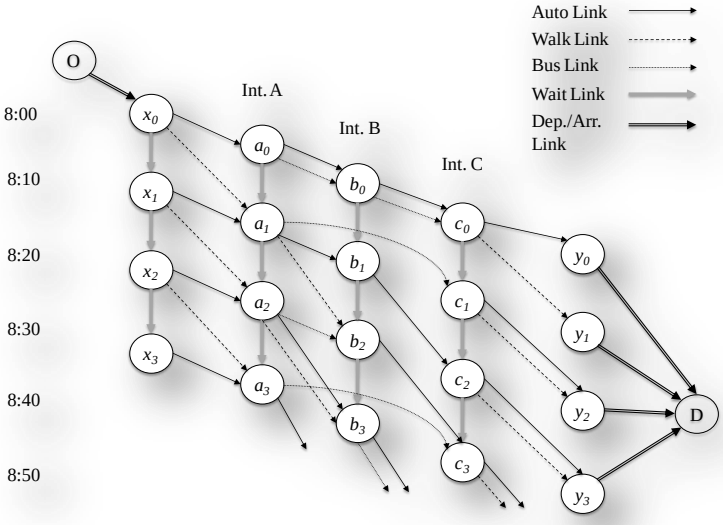
Simulated population (PopGen)
Konduri et al. (2013)



System configuration (GTFS)



Departure time distribution (PopGen)



Transit path assignment (Fast-TrIPs)
Khani et al. (2013)

Thank you

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