

Identifying and Ranking Texas' Most Congested Truck Segments

Innovations in Freight Data Workshop
Irvine, California

Bill Eisele

Texas A&M Transportation Institute

Texas *100 Most Congested Roadways List*

- Two (2) freight big data sources:
 - Speed dataset & volume dataset – combined to find the biggest problems
- “Total magnitude” measures
 - Hours of delay (“all vehicle”)
 - Hours of truck delay (truck only)
 - Delay per mile (“all vehicle” and truck only)
- “Individual” traveler measures
 - Travel time index
 - Planning time index (reliability)

<http://mobility.tamu.edu>

Texas Freight 50

Rank	Section	Annual Delay per Mile (Hrs)	Annual Cong. Cost \$M
1	I-35 (US290E to SH71)	108,645	\$72.3
2	I-610W (I-10 to I-69W)	68,893	\$21.0
3	I-69W (I-610W to SH288)	51,604	\$23.6
4	I-635 (I-35E to US75)	49,538	\$33.6
5	I-10W (Eldridge to BW8W)	48,855	\$13.4
6	I-345 (SS366 to US175)	46,744	\$9.4
7	I-69 (I-10E to SH288)	45,469	\$11.6
8	I-10W (BW8W to I-610W)	44,400	\$21.2
Approx. 1,800 Texas 100 Sections - Freight			\$2,217
Approx. 1,800 Texas 100 Sections – All Travel			\$9,720

Texas DOT 100 Most Congested Roads

http://www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html

Statewide Planning Map x

www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html

Maps Search Measure Query Sketch Tool Legend About

Base Maps

- TxDOT
- ESRI Streets
- Imagery
- Topographic

Overlays

- Clear Overlays
- AADT
- Area Offices
- COG
- Control Section
- Freight Network (FHWA)
- Freight Network (TxDOT)
- Functional Classification & Urban Areas
- Future Traffic & Percent Truck
- Highway Designations
- Maintenance Office
- MPO
- National Highway System
- Non-Attainment Areas
- Permanent Count Stations
- Projects - Construction Scheduled
- Projects - Finalizing for Construction
- Projects - Under Development
- Projects - Long Term Planning
- Railroads
- Reference Markers
- Speed Limits
- State House Districts
- State Senate Districts
- Texas Trunk System & Urban Areas
- Top 100 Congested Roadways**
- US House Districts
- Vertical Clearance

Rank: 1

Roadway Name	IH 610
TxDOT District	Houston
Annual Cost of Delay	\$90.63 Million
Annual Hours of Delay per Mile	1,112,917
Truck Delay Rank	2
Annual Hours of Truck Delay per Mile	68,893
Annual Cost of Truck Delay	\$20.99 Million
TCI	2.47

TCI - Texas Congestion Index - ratio of the peak period average travel time to the free flow travel time. A value of 1.20 means that a 30 minute trip during light traffic would take 36 minutes during peak periods.

[List View](#)

[Zoom to](#)

Detailed Directional Roadway Information

The 2016 ranking of Texas' most congested roadways illustrates a familiar theme – growth-induced traffic gridlock is getting worse every year. This new list provides a variety of congestion measures for the top 100 road segments in the state and a more comprehensive examination of nearly 1,800 roadways across Texas.

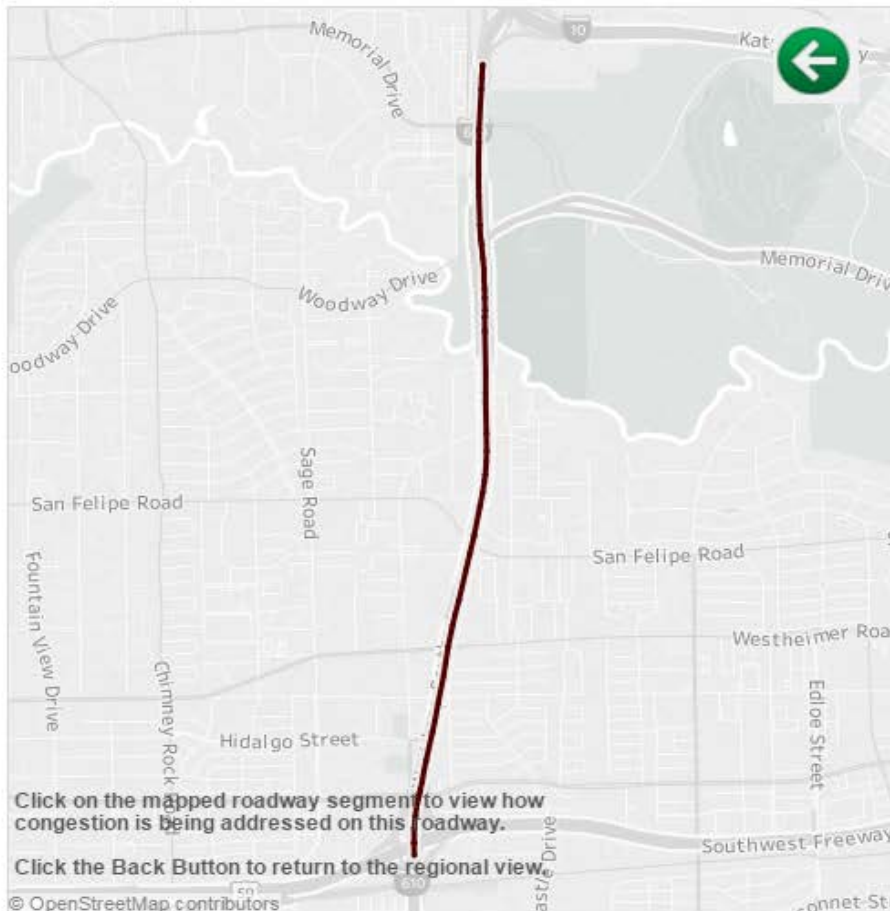
Note: Must go here for this info: <http://mobility.tamu.edu>

TOP 100 ROADWAYS

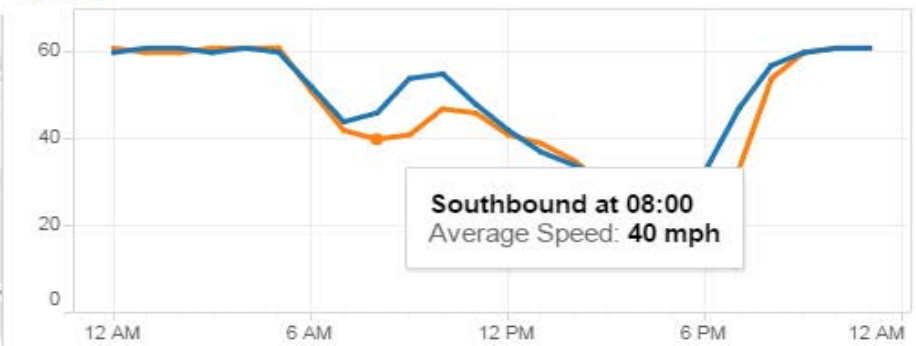
- [Complete Statewide List](#)
- [How We Got the Numbers](#)
- [100 Congested Roadways – TxDOT](#)

State View Regional View Roadway Details

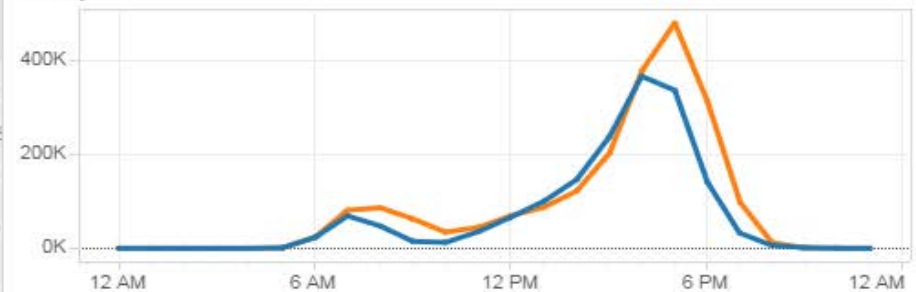
W Loop Fwy / IH 610, Rank: 1



Speed



Delay

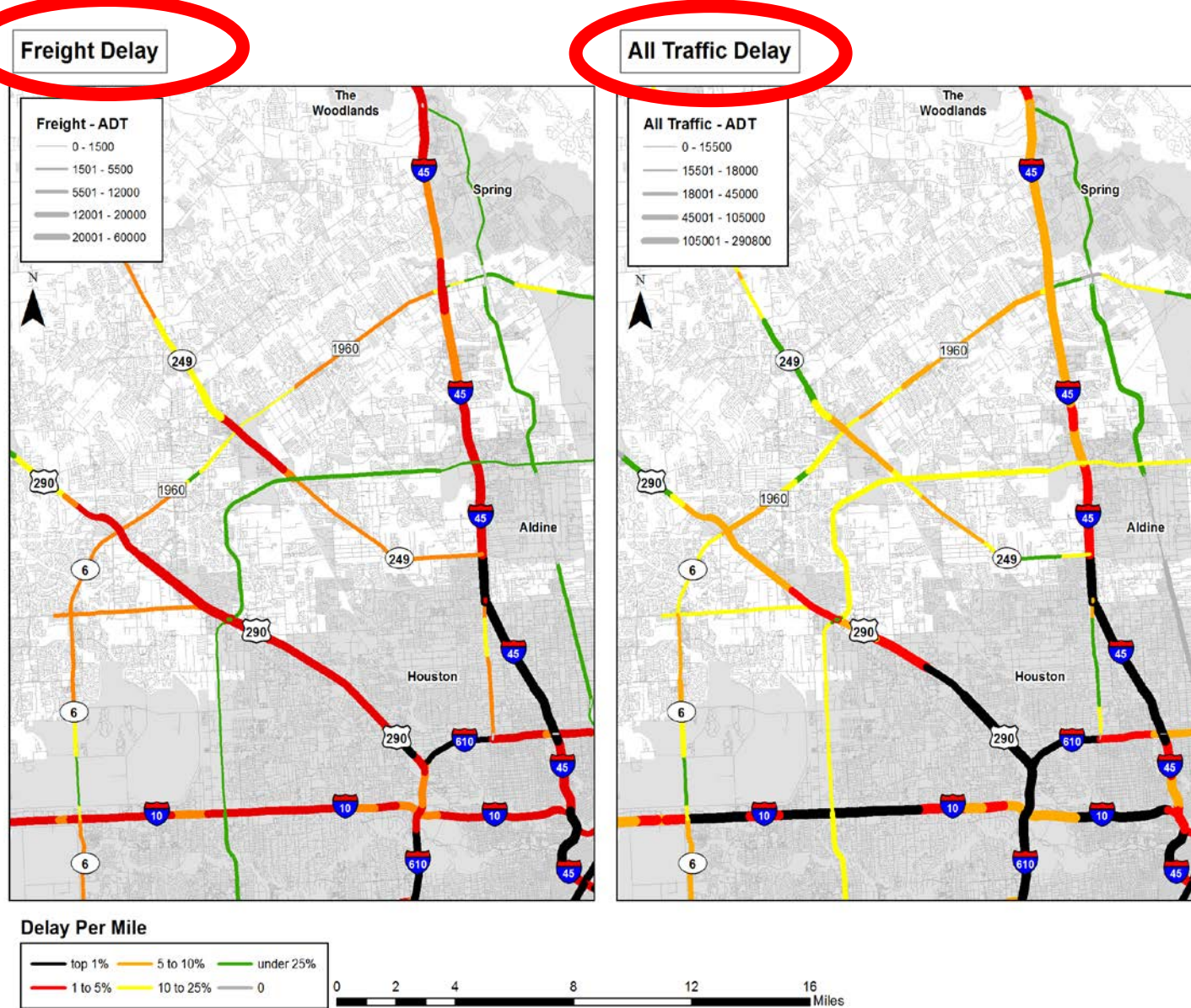


Direction
■ Northbound
■ Southbound

Speed: Average speed for the hour (Miles per Hour).
Delay: Yearly extra travel time for all users (Person-Hours).

Northwest Houston (2014)

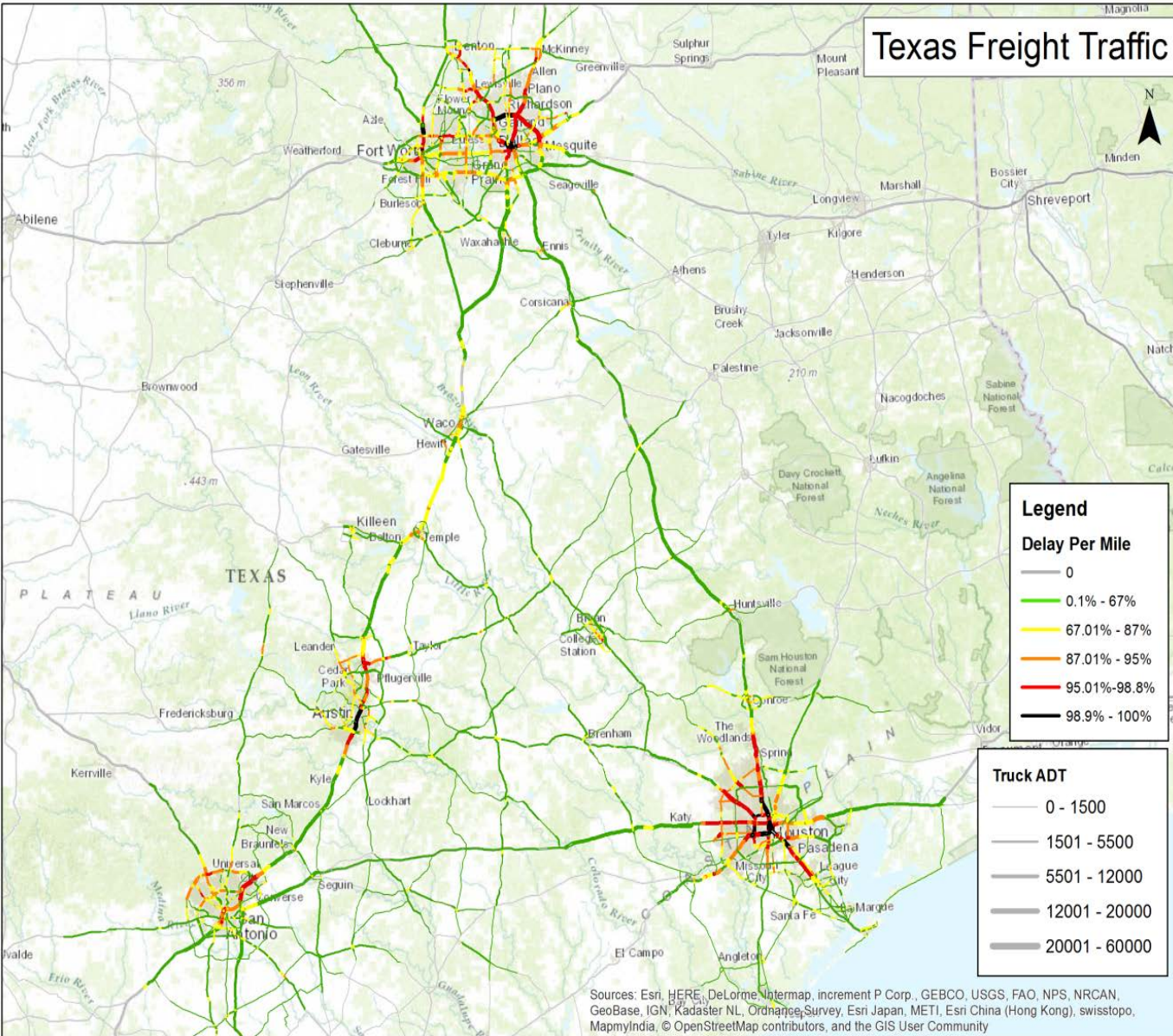
- Truck delays compared to All Vehicles delays
- Sam Houston Tollway cars > trucks
- I-45 N of Tollway trucks > cars
- US 290 NW trucks > cars
- I-10 from downtown cars > trucks



Texas Freight Traffic

Statewide Truck Congestion Map (2014)

- Delay per mile (color) and
- Volumes (line width)



Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

I-35 Statistics

I-35 National (2014)

- 39% of corridor daily VMT in Texas
- 62% of corridor urban delay in Texas
- 46% of corridor rural delay in Texas

Within Texas (2016)

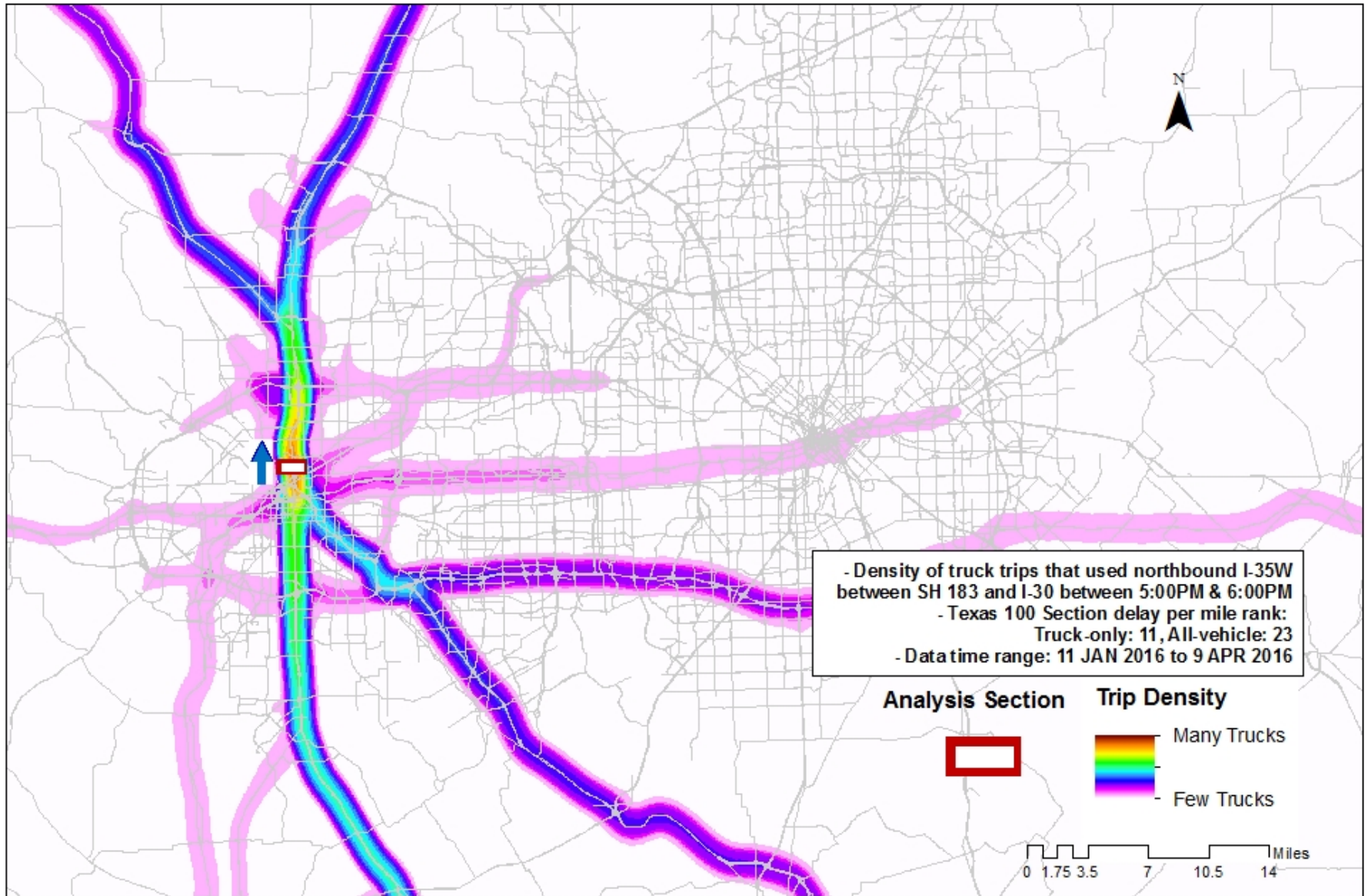
- 15% of TX Interstate mileage
- 23% of TX IH daily VMT (5.9% of ALL daily VMT)
- 25% of TX IH daily truck VMT (10.6% of ALL daily truck VMT)
- 8.5% of All TX100 Sections Congestion Cost
- 12.4% of All TX100 Sections Truck Congestion Cost

What's the Next Step in Truck Data Innovation?...

...is it waypoint data for mobility analysis?

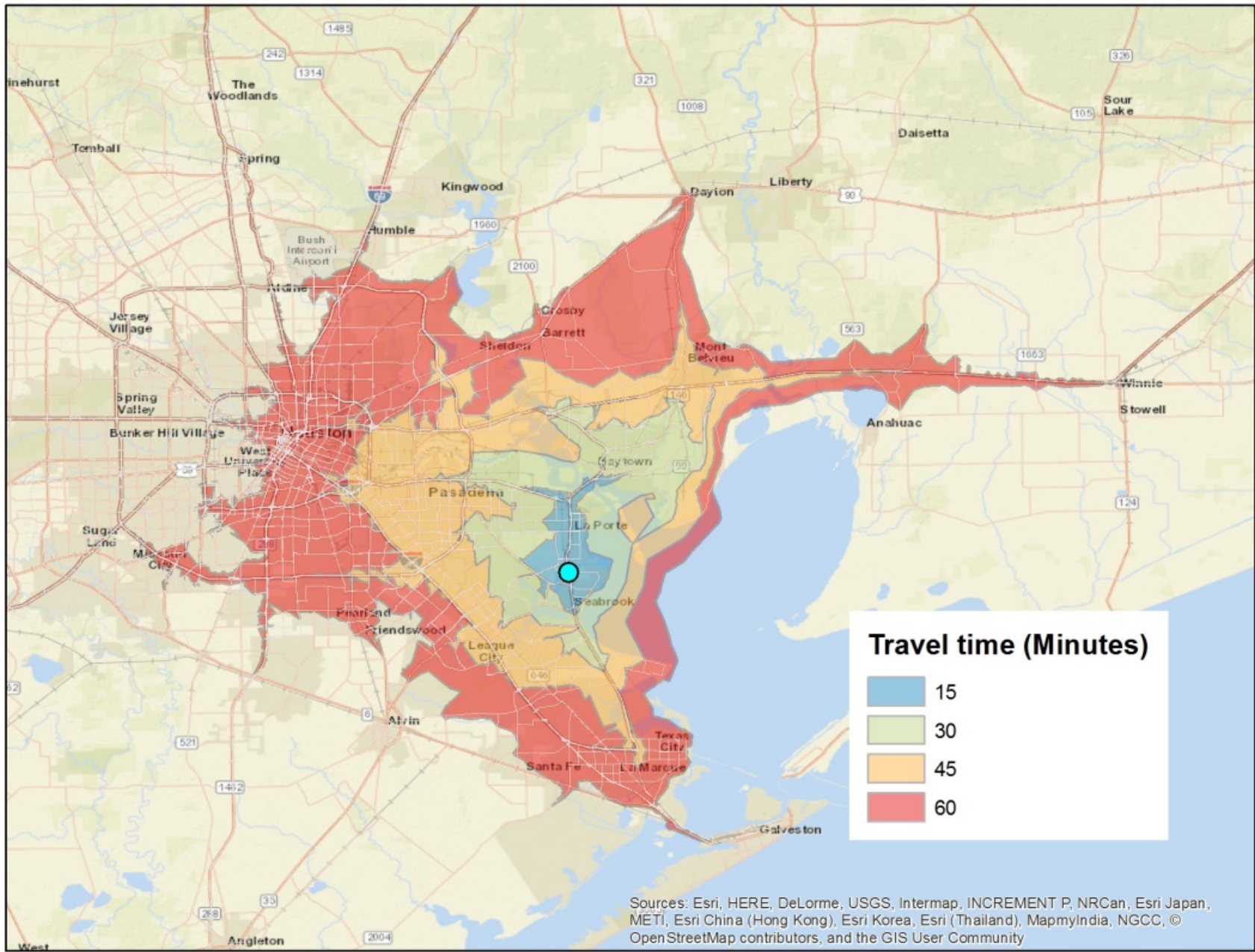
...if so, *the future is now!*

Truck Trip Patterns (for All Trucks Using I-35W Northbound in Downtown Fort Worth)



*35W selected area coordinate (-97.323 32.78 ; -97.316 32.77)

Wednesday Afternoon Peak Hour (5pm-6pm) Travel time Contour from Bayport Terminal



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

2016 I-35E Northbound Travel Times (Rio Grande River to Red River)

