

Measuring Truck Bottlenecks

Jeff Short

American Transportation Research Institute (ATRI)

TRB Performance Measurement and Data 2015

Denver

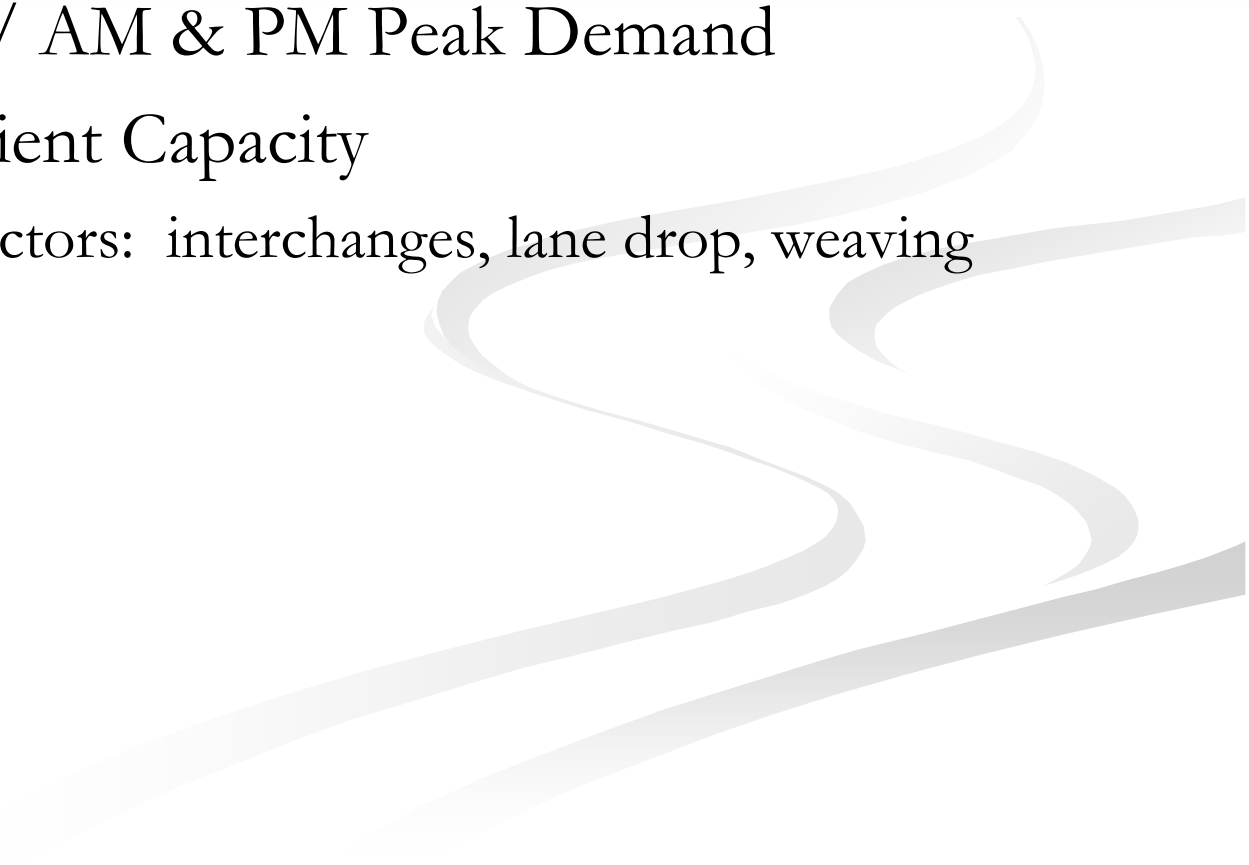
June 01, 2015

ATRI Board of Directors



Highway Truck Bottlenecks

Typical Profile

- Location: Urban Area – Limited Access Highway
 - Time: Weekday/ AM & PM Peak Demand
 - Causes: Insufficient Capacity
 - Contributing Factors: interchanges, lane drop, weaving
- 
- A decorative graphic consisting of several overlapping, wavy, light gray lines that sweep across the bottom right portion of the slide, creating a sense of motion or flow.


Highway Truck Bottlenecks

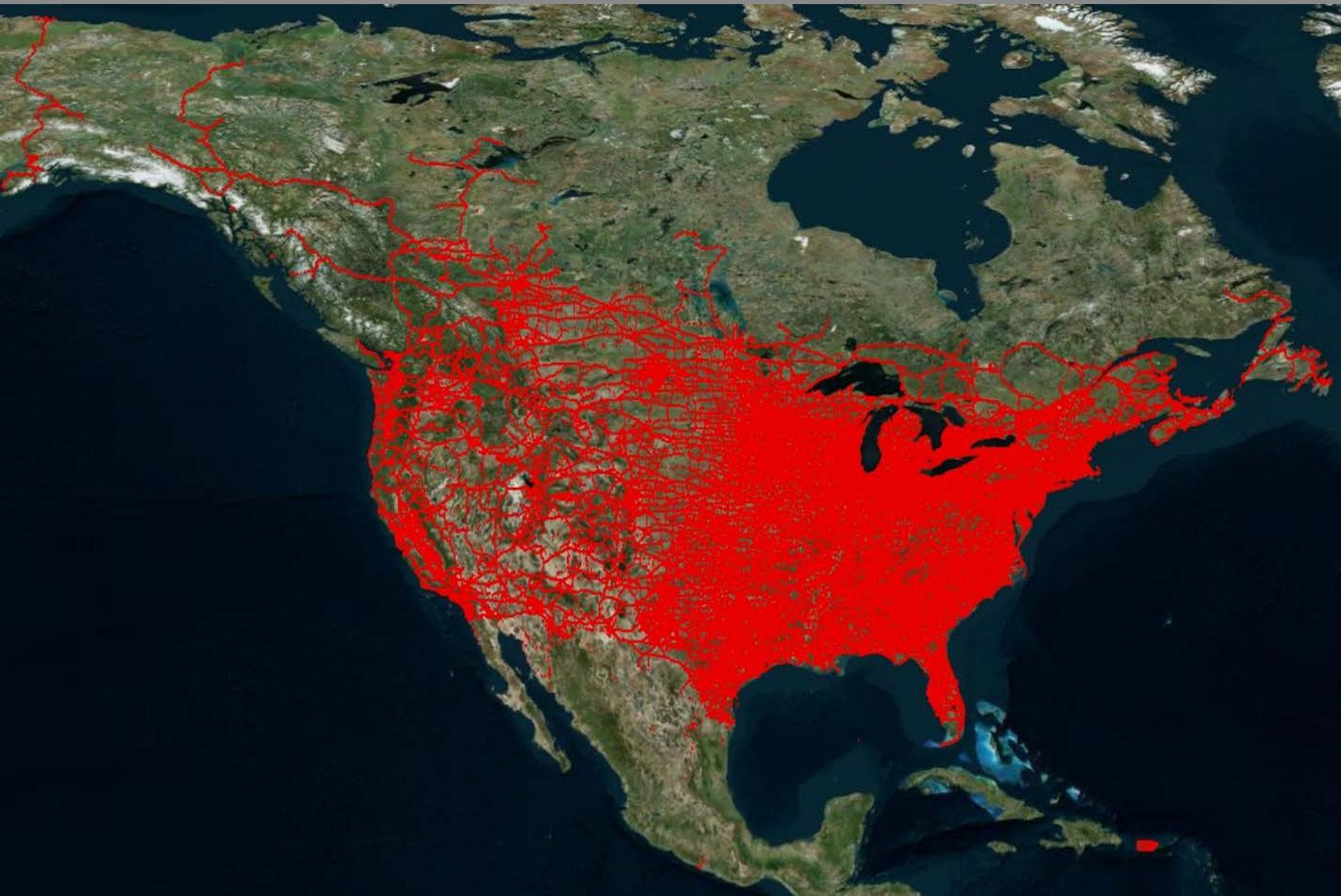
Bottleneck Aggravators

- Economy
 - Fuel Prices
 - Traffic Incidents
 - Weather
 - Distracted Driving?
 - Road Closures (rare)
- 
- A decorative graphic consisting of several overlapping, wavy, light gray lines that flow from the bottom left towards the right side of the slide, creating a sense of movement or a stylized road.

Highway Truck Bottlenecks

Standard Measures


- Speed Measures
 - Travel Time
 - Reliability/Variability
 - Cost
- 
- A decorative graphic consisting of several overlapping, wavy, light gray lines that flow from the bottom left towards the top right, creating a sense of movement and depth in the lower half of the slide.




Average Speed - PM Peak Weekday

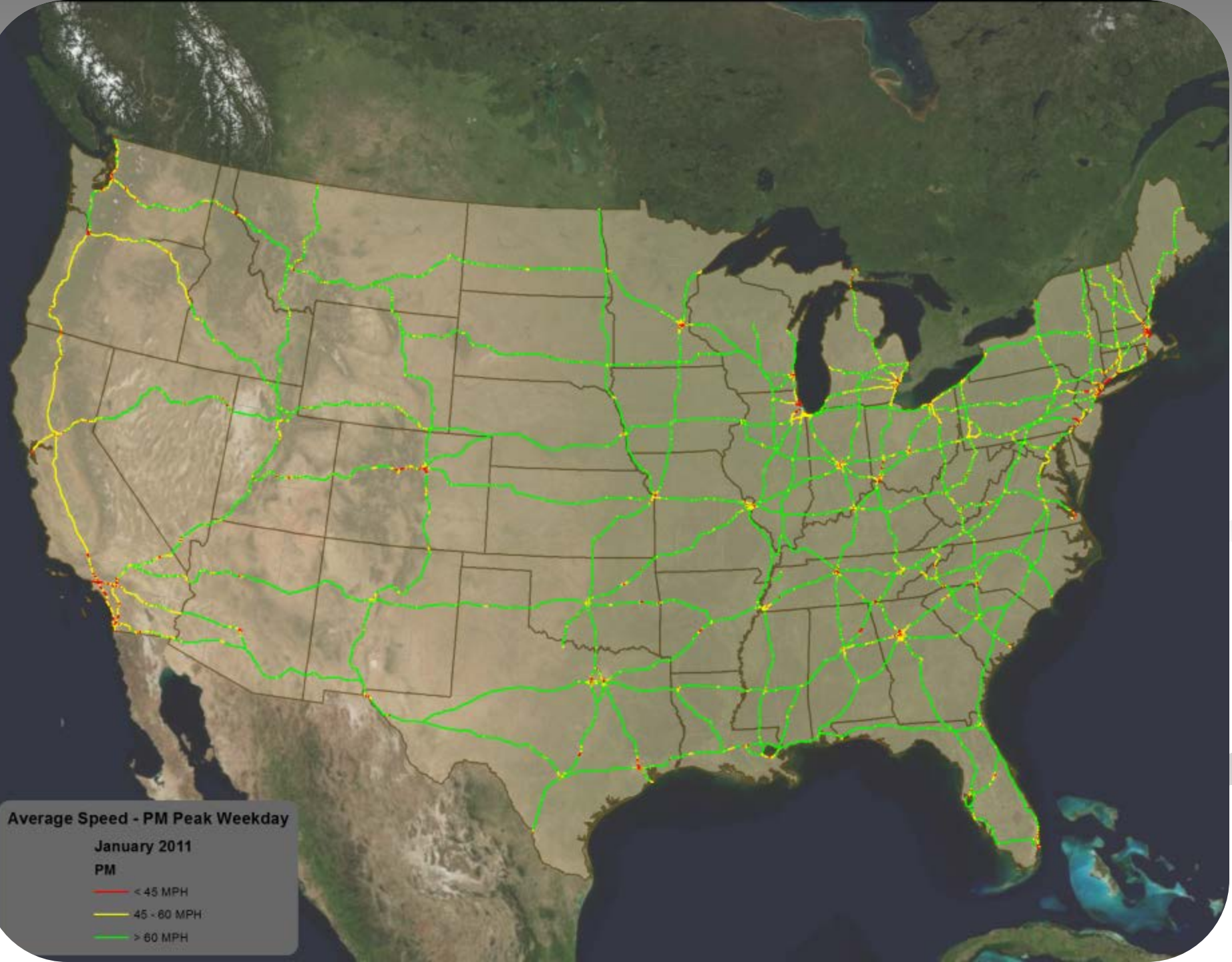
January 2011

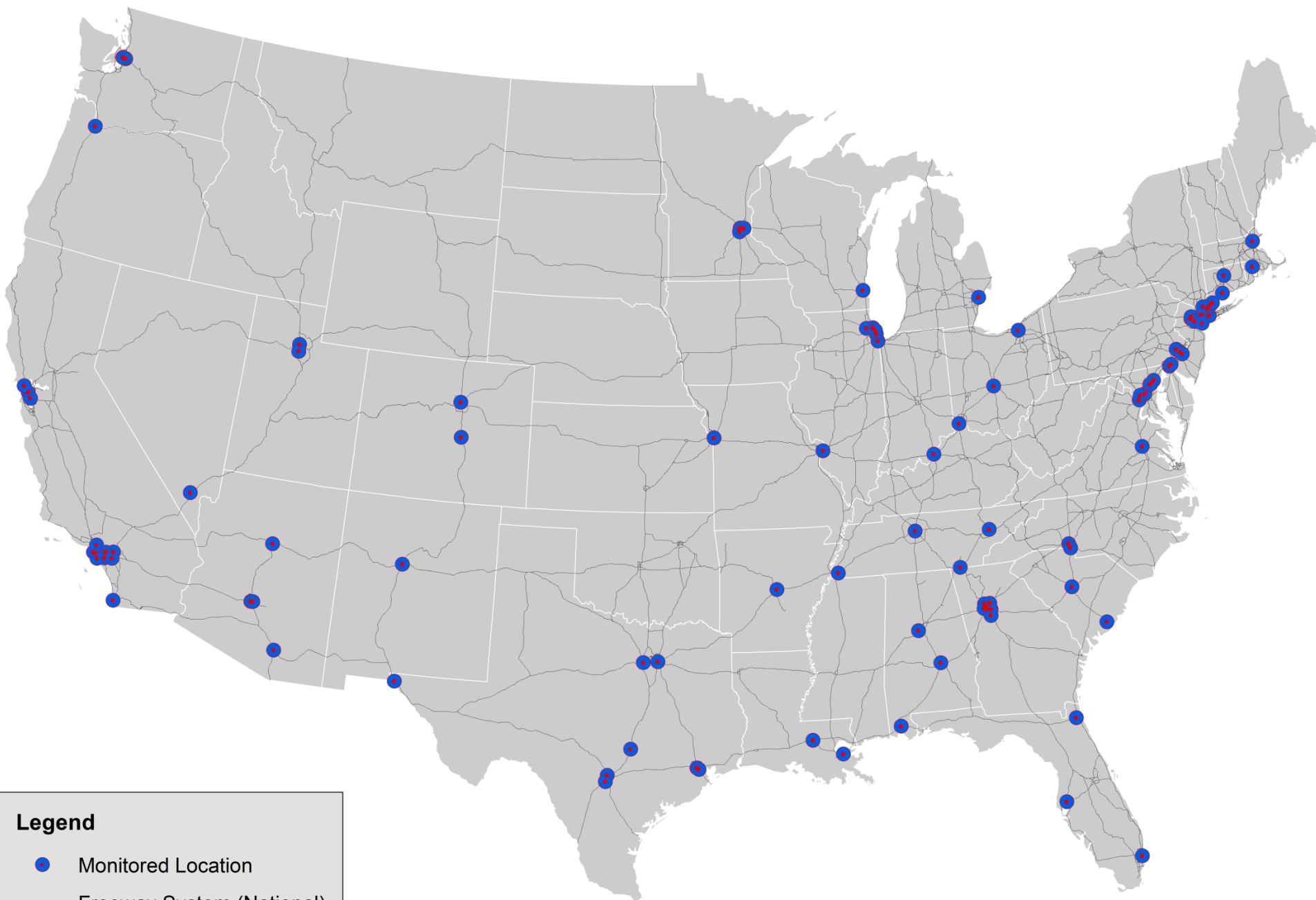
PM

 < 45 MPH

 45 - 60 MPH

 > 60 MPH





Chicago, IL: I-290 at I-90/I-94



Summary

National Ranking by
Congestion Index

1

Average Speed

29

Peak Average Speed

22

Nonpeak Average
Speed

32

Nonpeak/Peak Ratio

1.43

Average Speed by Time of Day
I-290 at I-90/I-94



FREIGHT PERFORMANCE MEASURES PROGRAM - CITY PAIR ANALYSIS

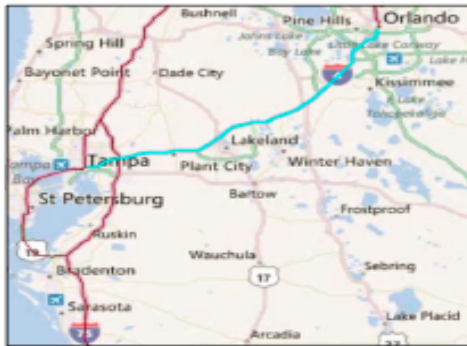
TAMPA, FL - ORLANDO, FL

FIRST QUARTER 2012

EASTBOUND to Orlando

Eastbound Statistics

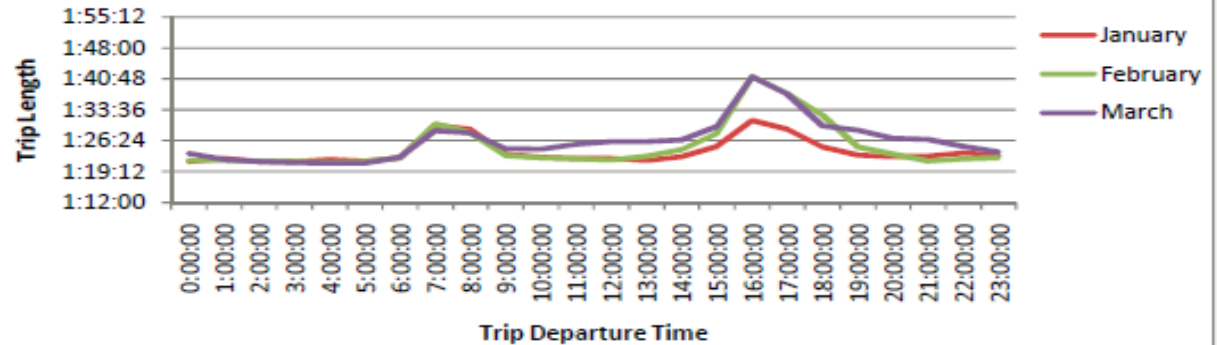
Minimum Travel Time	1:21:05
Maximum Travel Time	1:41:19
Median Travel Time	1:23:04
Max/Min Ratio	24.9%



Westbound Statistics

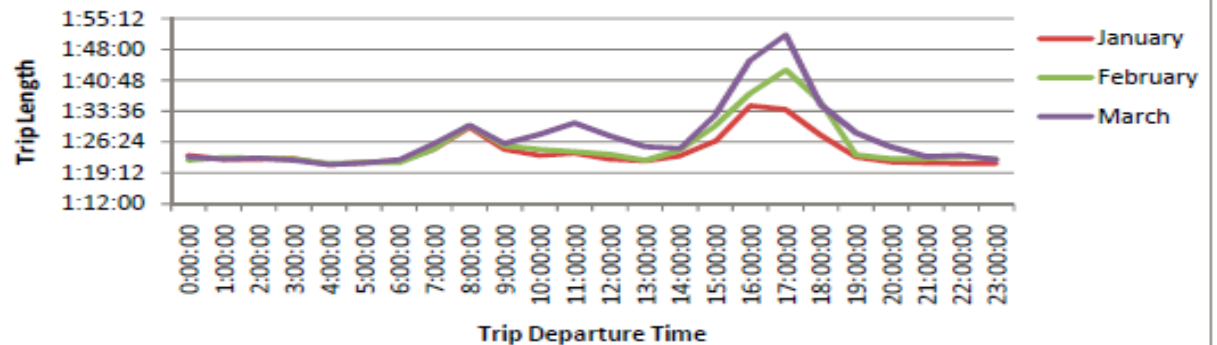
Minimum Travel Time	1:21:05
Maximum Travel Time	1:51:24
Median Travel Time	1:23:18
Max/Min Ratio	37.4%

Tampa to Orlando - Travel Time by Time of Departure



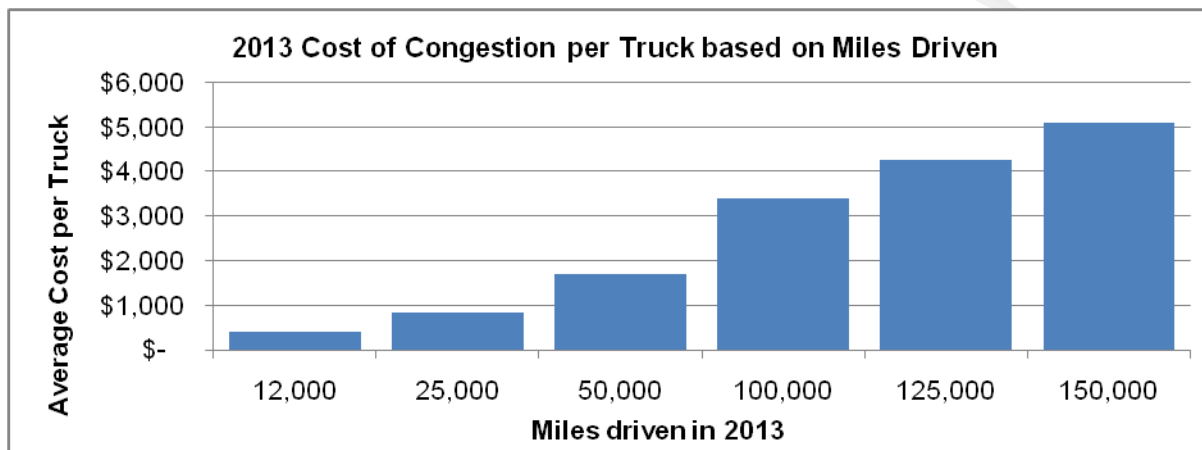
WESTBOUND to Tampa

Orlando to Tampa - Travel Time by Time of Departure

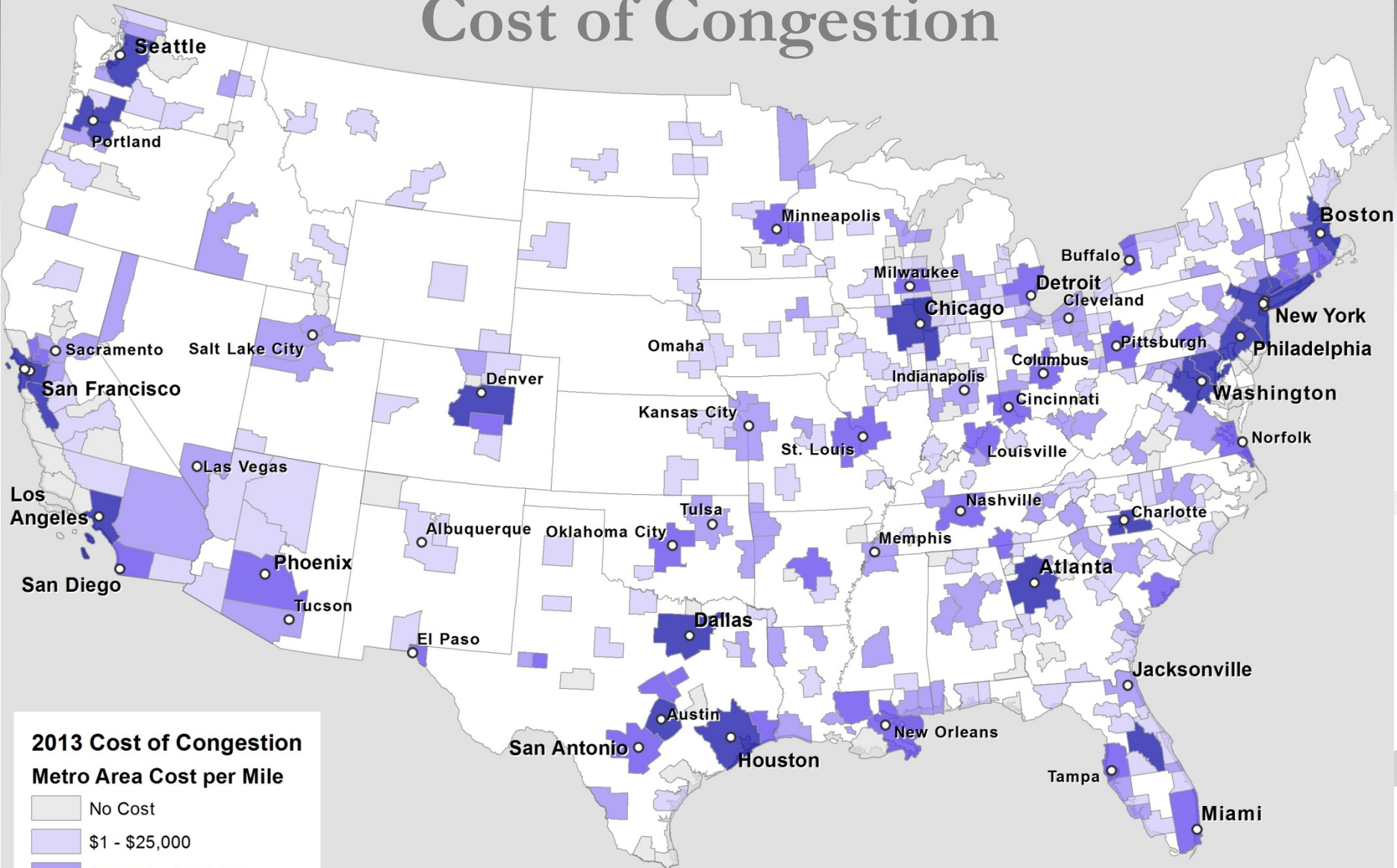


Cost of Congestion

- 2013 cost of \$9.2 billion
- 141 million lost hours of productivity
 - Translates to over 51,000 drivers sitting idle for a working year
- Overall average of \$864 per registered large truck (GVWR 10k+ lbs.)
 - Can also calculate average cost per truck based on VMT



Cost of Congestion



Los Angeles metro worst with
\$1.1B in costs

Additional Trucking Factors

Can the industry avoid bottlenecks: It's a matter of timing.

- Hours-of-service
- Detention time



Opportunity: Data Mining and Analytics

- Travel Conditions
- Hours-of-Service Status
- Weather Information
- Parking Information



Contact Information

Jeff Short

jshort@trucking.org