



ILLINOIS STATE FREIGHT PLAN 2017

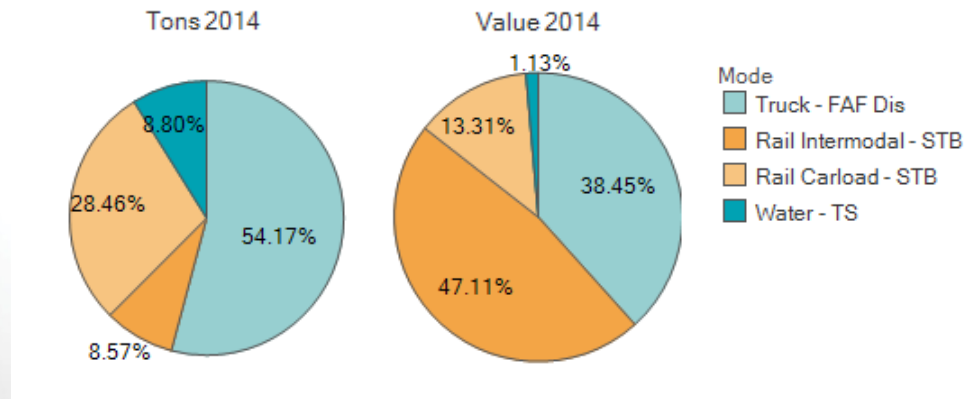
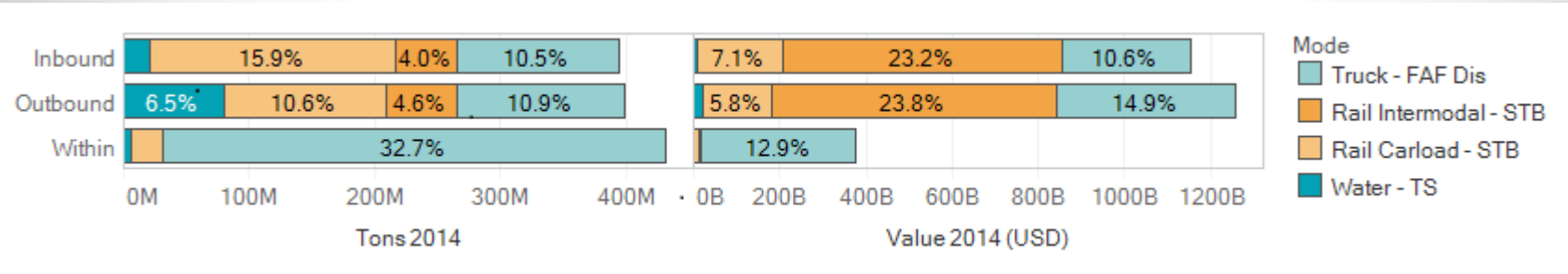
Agenda



- Freight Traffic & Forecast
- Roadway Freight Bottlenecks

IL-Based Freight Volume 2014

1.2 billion tons, \$2.8 trillion product value



Air Cargo: 1.8 Million Tons (2013, different data type)



Inbound 2013	Belly		Freighter		Grand Total	
	Tons	% Tons	Tons	% Tons	Tons	% Tons
ORD - Chicago	217,085	93.8%	645,078	88.9%	862,163	90.1%
RFD - Rockford	44	0.0%	58,544	8.1%	58,588	6.1%
PIA - Peoria	3	0.0%	14,648	2.0%	14,650	1.5%
MDW - Chicago	14,249	6.2%			14,249	1.5%
CHI - Chicago			6,972	1.0%	6,972	0.7%
BLV - Belleville	0	0.0%	56	0.0%	56	0.0%
CMI - Champaign	6	0.0%	0	0.0%	6	0.0%
DPA - West Chicago			4	0.0%	4	0.0%
MLI - Moline	3	0.0%			3	0.0%
BMI - Bloomington	2	0.0%	0	0.0%	2	0.0%
SPI - Springfield	1	0.0%			1	0.0%
Grand Total	231,391	100.0%	725,302	100.0%	956,694	100.0%

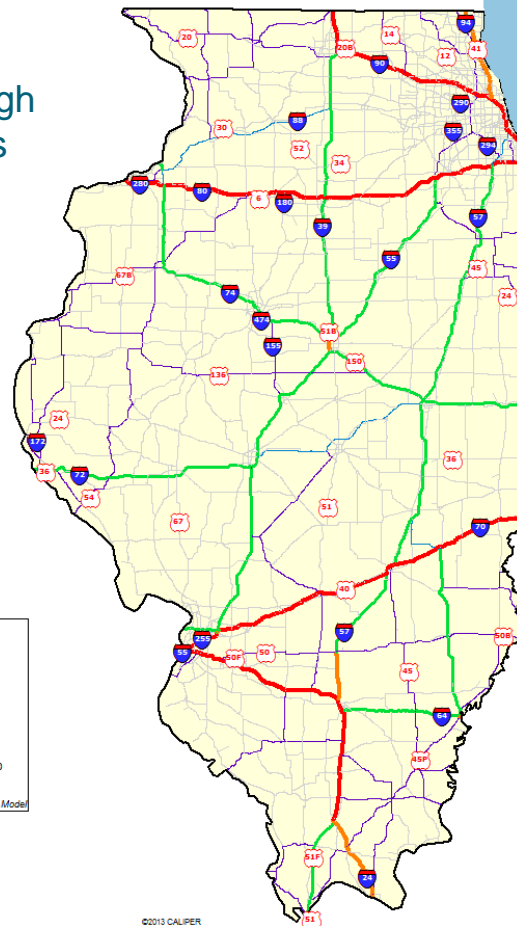
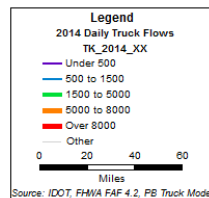
Outbound 2013	Belly		Freighter		Grand Total	
	Tons	% Tons	Tons	% Tons	Tons	% Tons
ORD - Chicago	183,469	92.4%	522,981	84.9%	706,450	86.7%
RFD - Rockford	78	0.0%	72,149	11.7%	72,227	8.9%
MDW - Chicago	14,934	7.5%			14,934	1.8%
PIA - Peoria	1	0.0%	14,703	2.4%	14,705	1.8%
CHI - Chicago			6,401	1.0%	6,401	0.8%
DPA - West Chicago			57	0.0%	57	0.0%
CMI - Champaign	3	0.0%	5	0.0%	8	0.0%
BMI - Bloomington	1	0.0%	4	0.0%	4	0.0%
MLI - Moline	3	0.0%			3	0.0%
Grand Total	198,489	100.0%	616,300	100.0%	814,790	100.0%

- One-quarter international belly cargo, virtually all Chicago
- Three-quarters freighter cargo, largely domestic
- ➔ Southern IL within trucking distance of domestic hubs

Freight Passing Through IL

- Total truck VMT was 28 million vehicle miles in 2014
- 38% was from pass-through trucks
- Pass-through rail adds 44% to tonnage

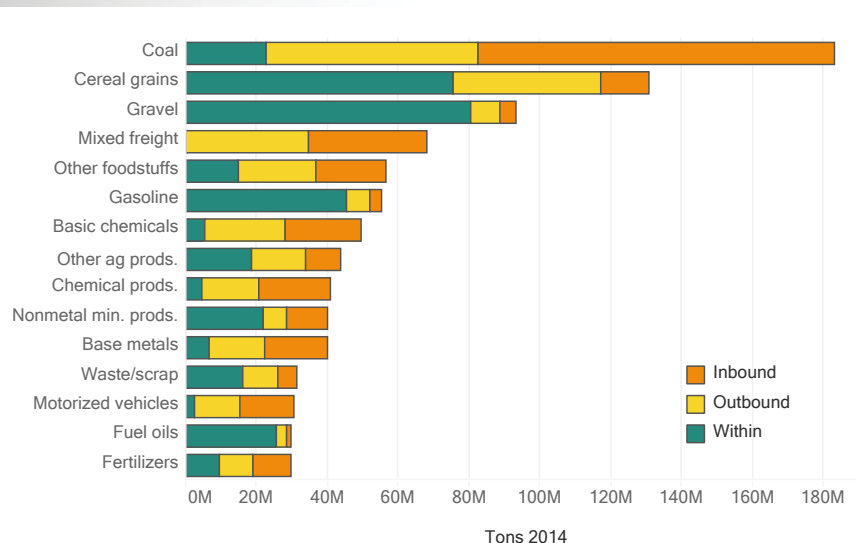
Through Trucks 2014



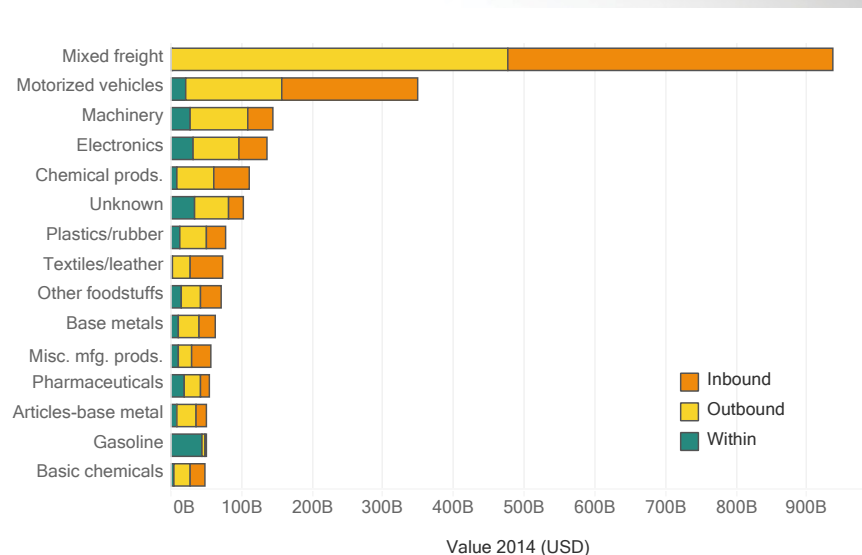
Top 15 IL-Based Commodities: Detail by Direction



Tons:



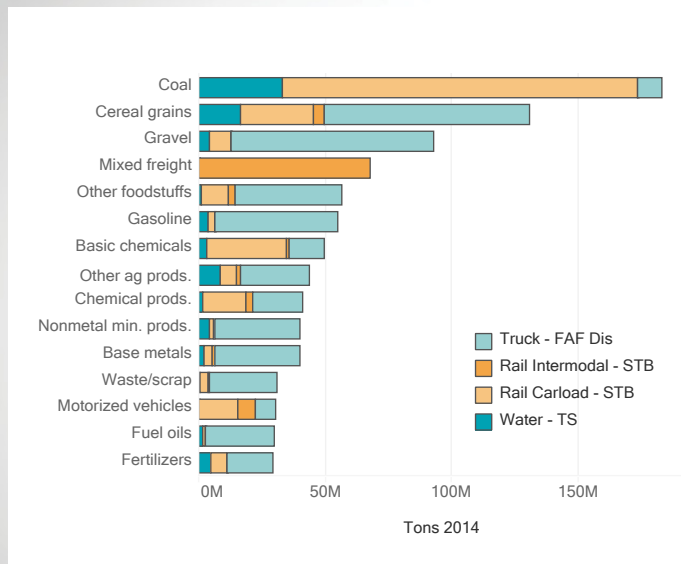
Value:



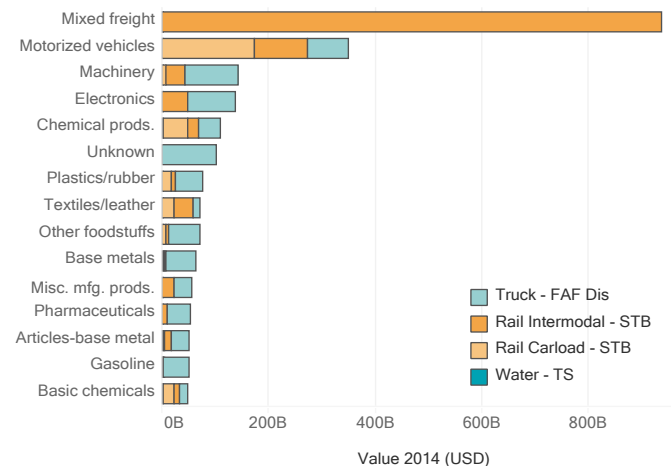
- 75% of Tons, 83% of Value
- ➡ But *different* commodities

Top 15 IL-Based Commodities: Detail by Mode

Tons:

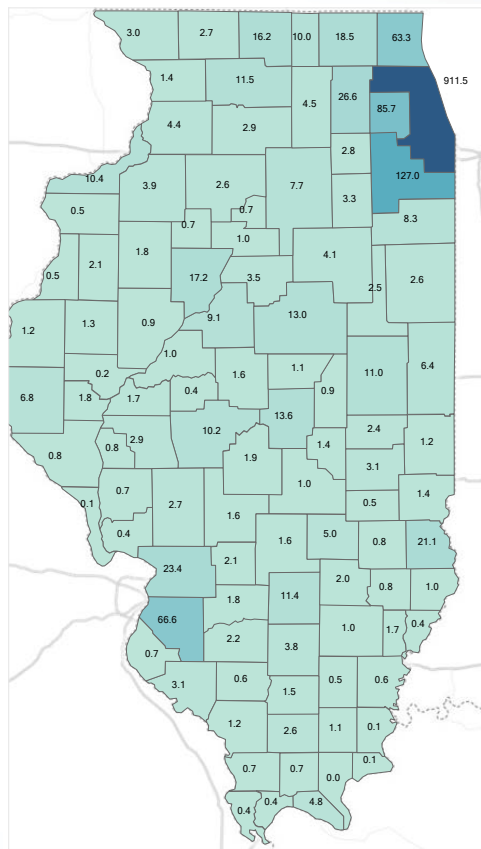
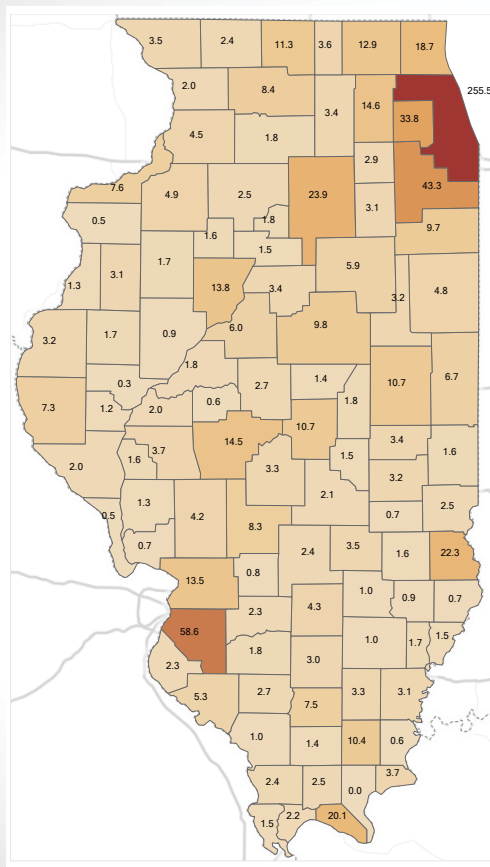


Value:



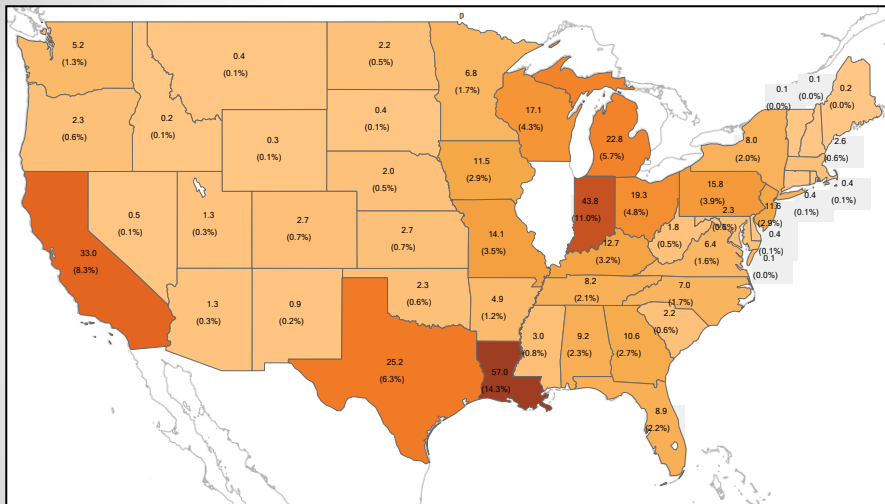
- Rail coal leads Tons, Rail intermodal leads Value
- Truck tons led by bulks, value by machinery & electronics

wsp

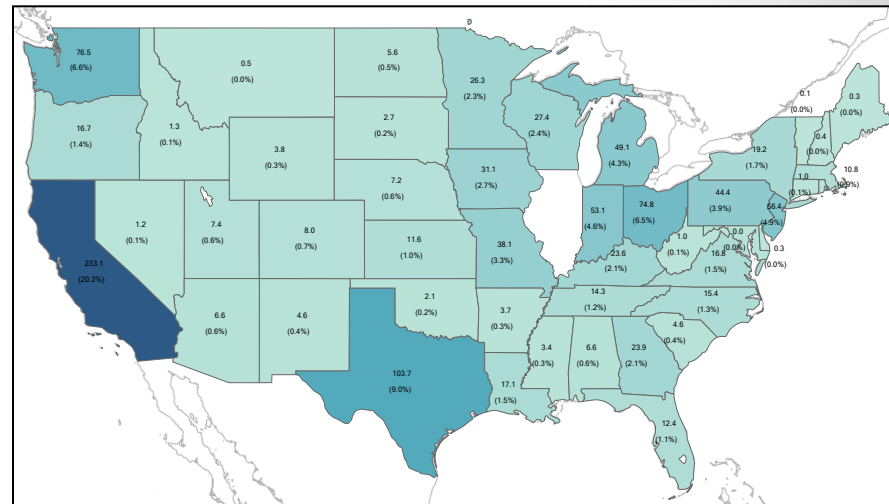


IL Markets: Outbound Trading Partners

Tonnage



Value

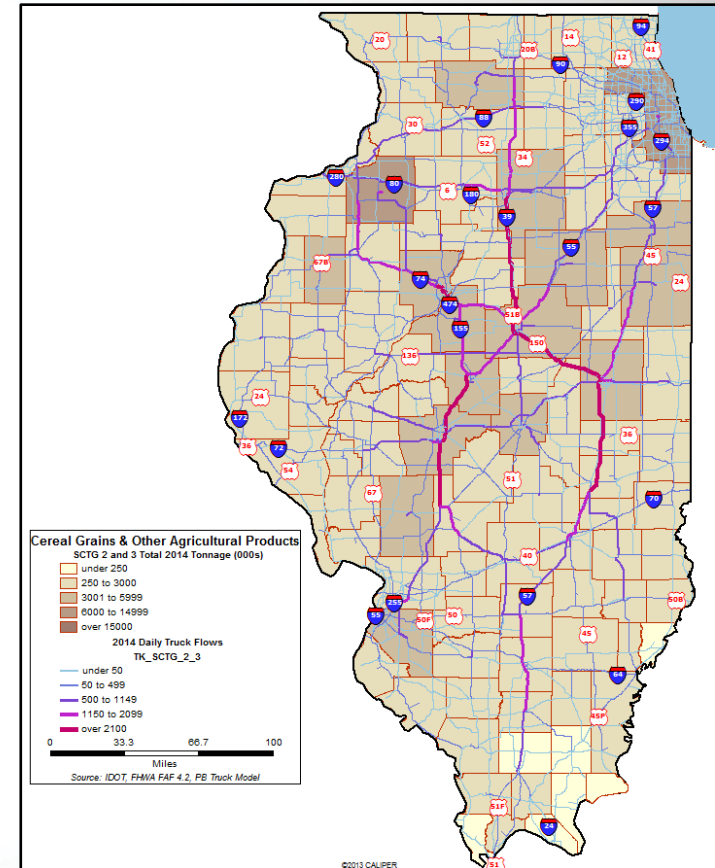
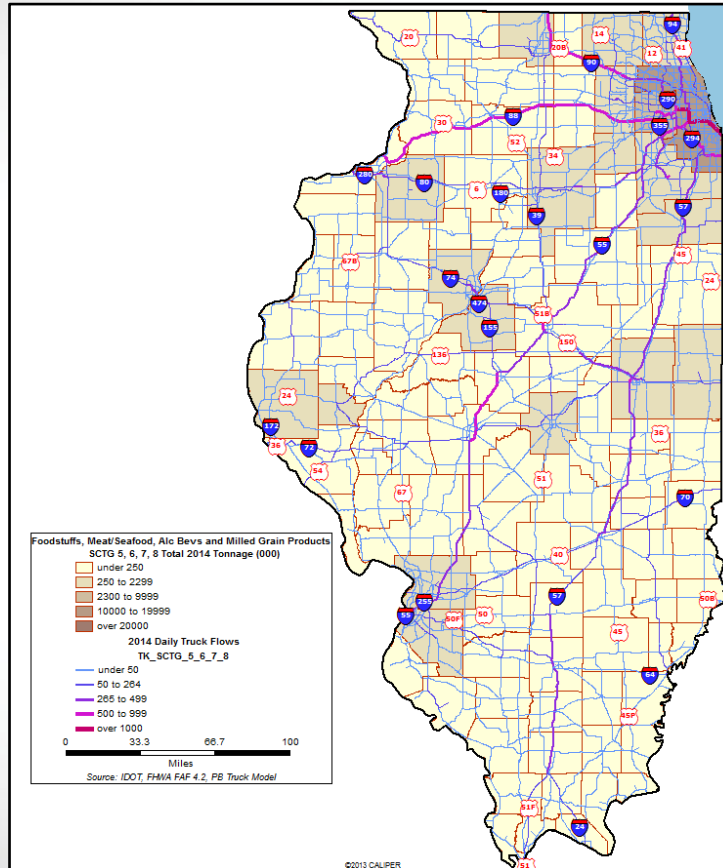


- Tonnage Markets: Gulf Coast, CA, Regional
- Value Markets: CA and WA, TX, Regional

Key Industry Highway Dependence: Food & Agriculture



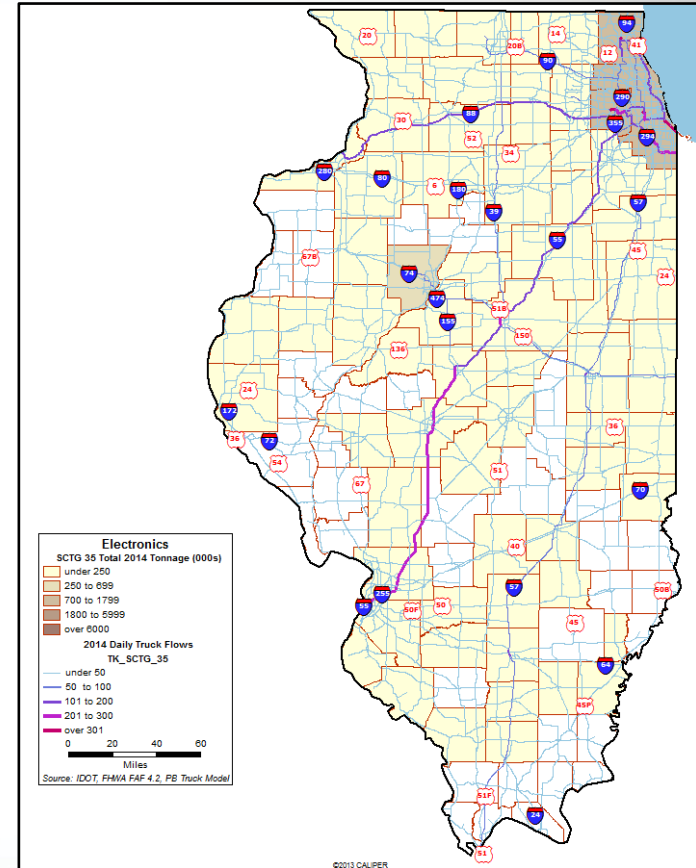
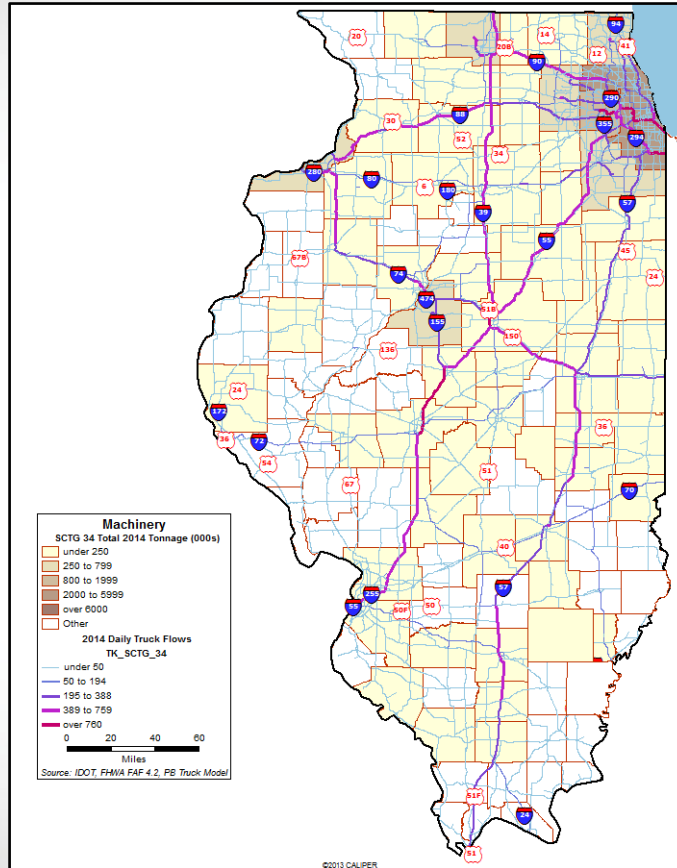
Total IL Truck Flows & County Origins, 2014 Tons



Key Industry Highway Dependence: Machinery & Electronics



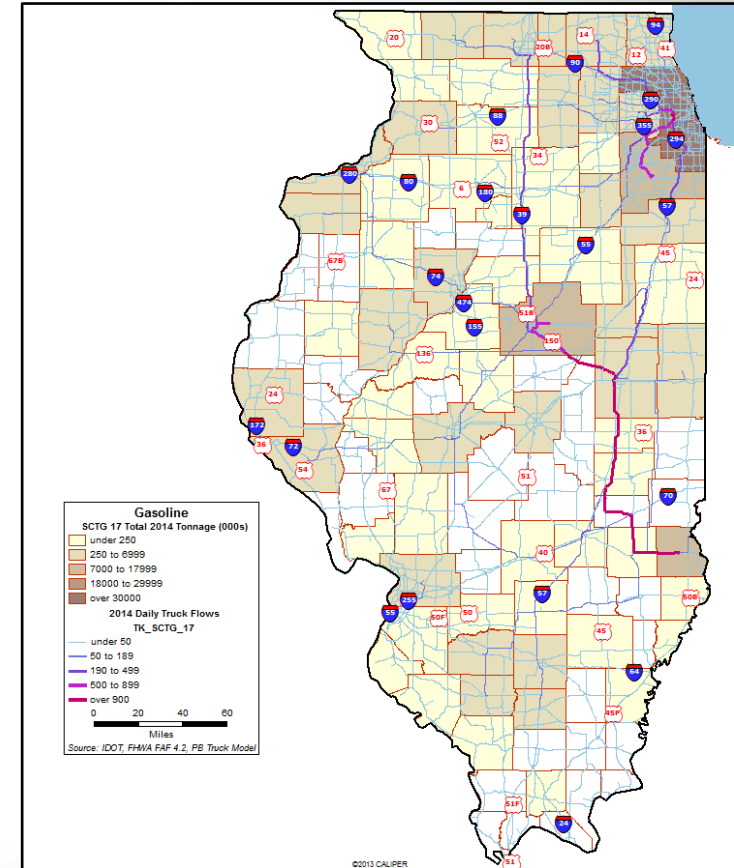
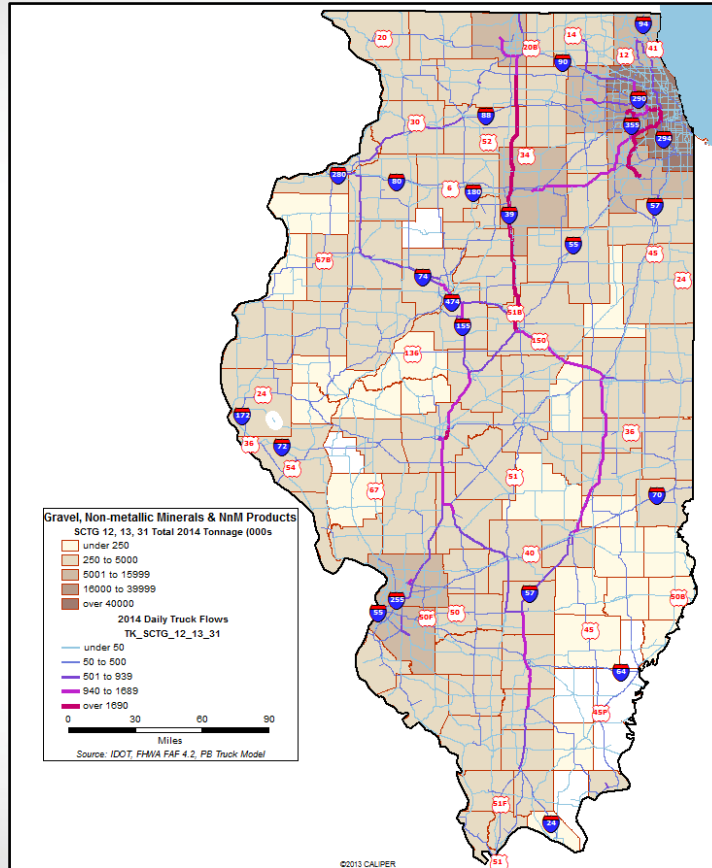
Total IL Truck Flows & County Origins, 2014 Tons



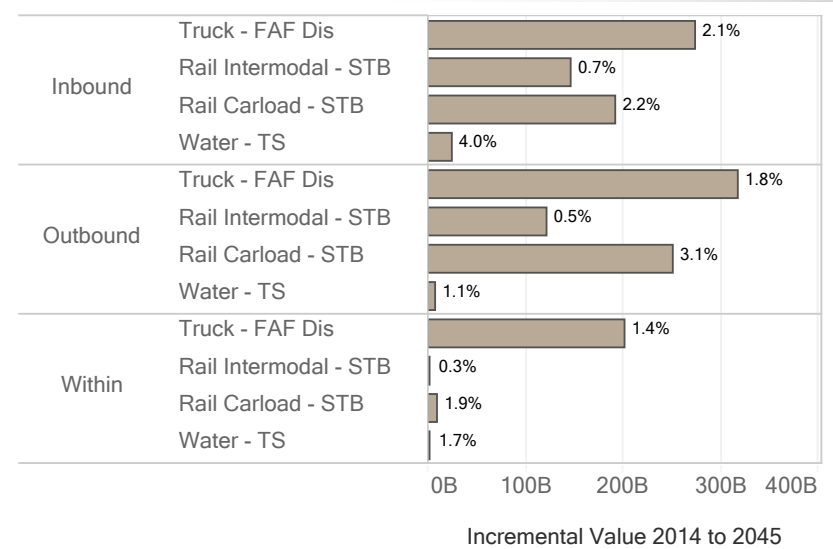
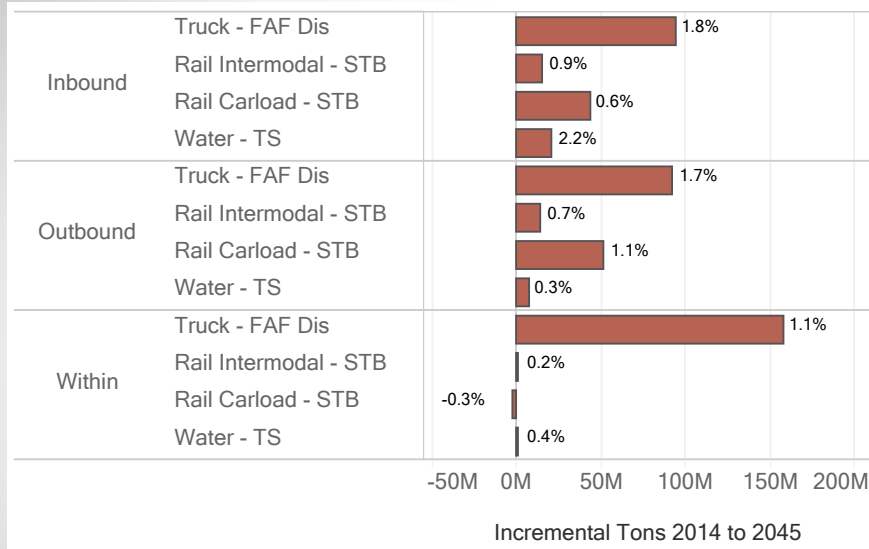
Key Industry Highway Dependence: Aggregates & Gasoline



Total IL Truck Flows & County Origins, 2014 Tons



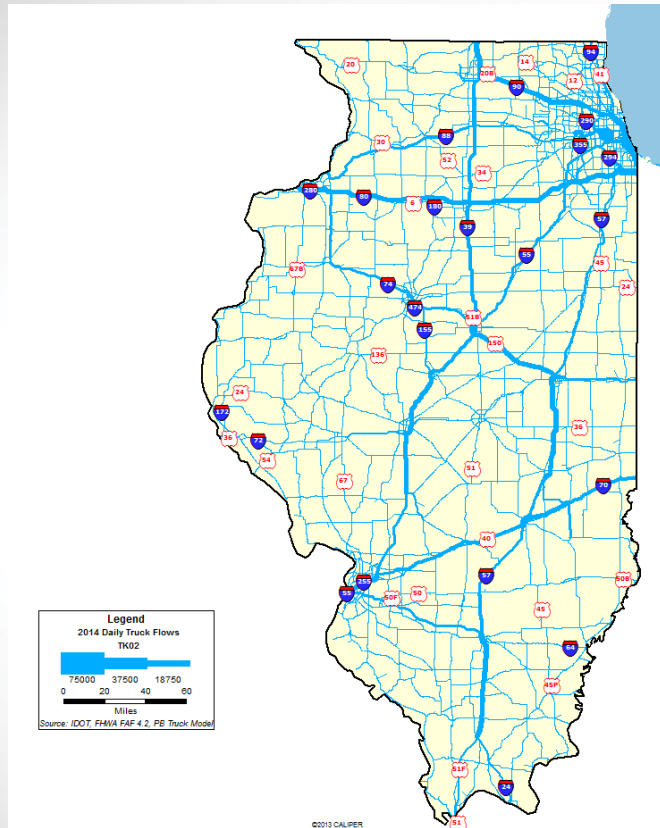
2045 IL-Based Forecast: Added Volumes & Growth Rates



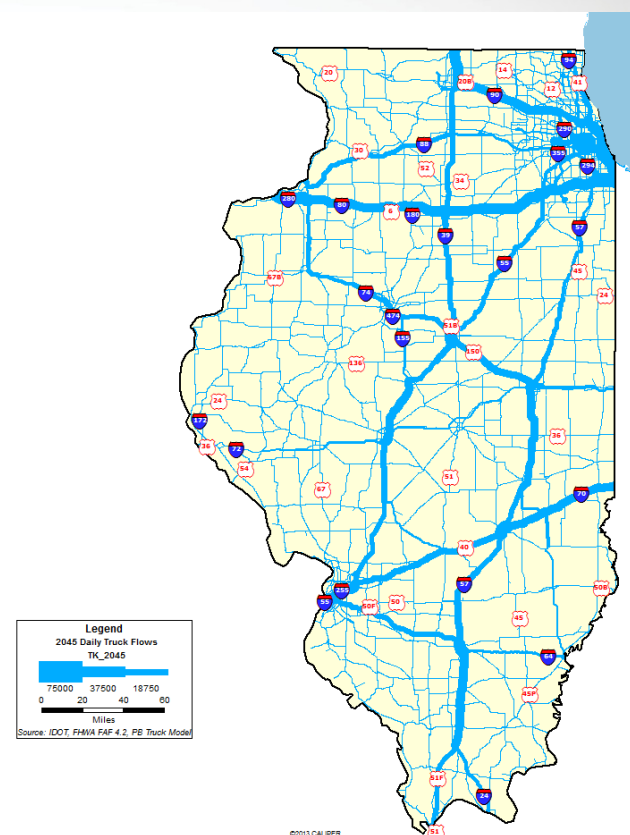
- Tonnage: 40% growth, +493 million tons, 70% by truck
- Value: 56% growth, +\$1.5 trillion product value, 51% by truck

2045 Forecast: Total Truck VMT Grows 82%

2014



2045



➡ Through trucks grow faster, add half the new VMT

Agenda



- Freight Traffic & Forecast
- Roadway Freight Bottlenecks

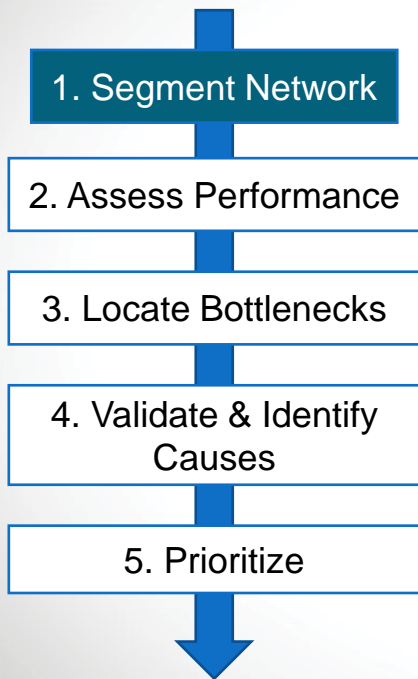
Truck Bottleneck Identification



What is a freight bottleneck?

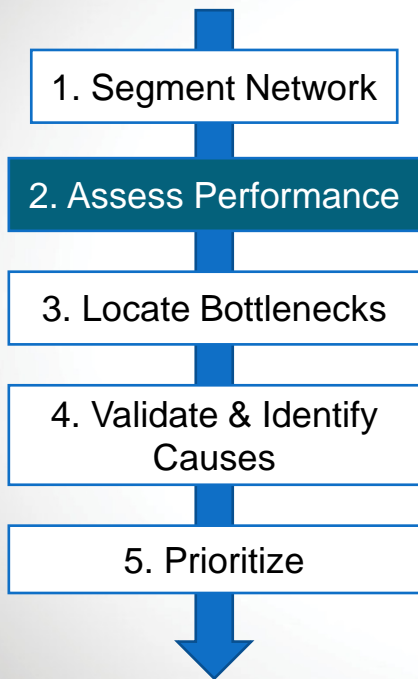
A freight bottleneck is a part of the transportation system that causes disproportionately high costs to the movement of freight in terms of delay and unreliability.

Truck Bottleneck Identification



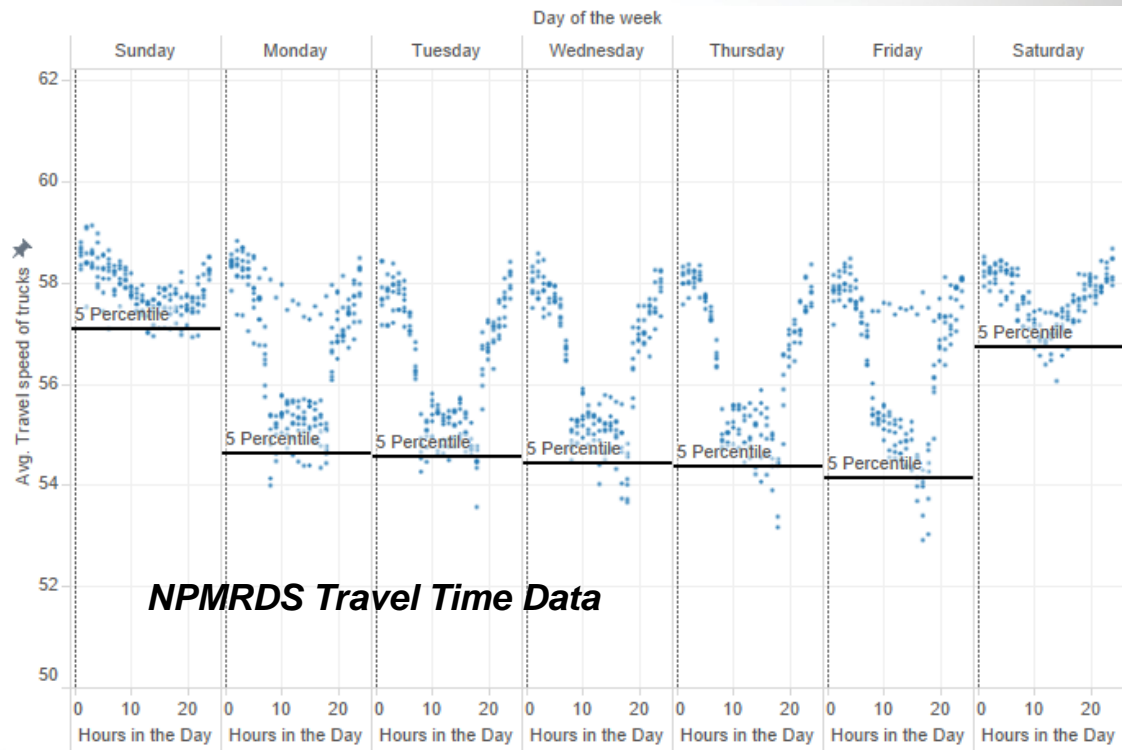
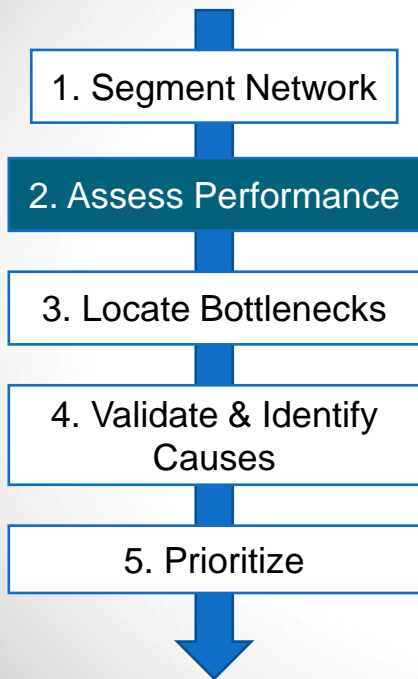
- Segments should have comparable characteristics
 - Congestion
 - Traffic levels/operations
 - Geometry
- Adopt segmentation in NPMRDS
- Focus on highways

Truck Bottleneck Identification

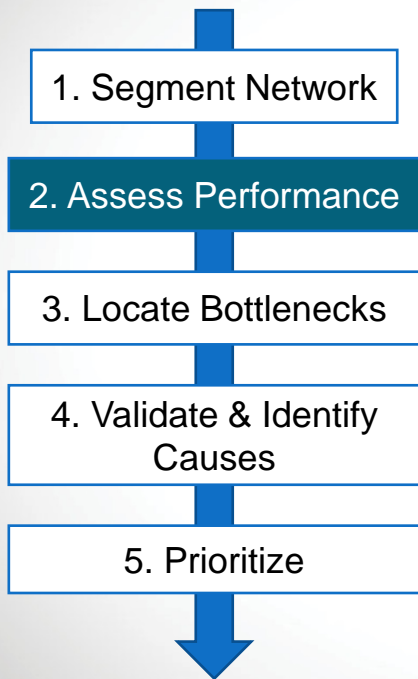


- Calculate two metrics based on NPMRDS and Truck AADT
 - **Recurring Travel Time Delay:** Can be anticipated
 - **Non-Recurring Travel Time Unreliability:** Cannot be anticipated
- Set thresholds based on policy
- Different thresholds for urban and rural

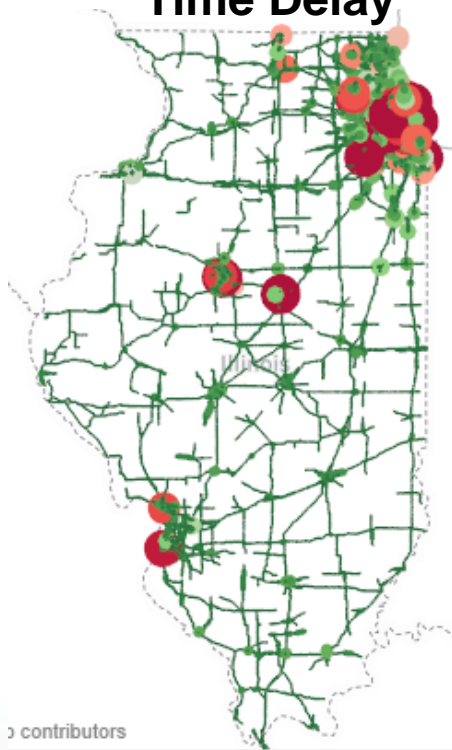
Truck Bottleneck Identification



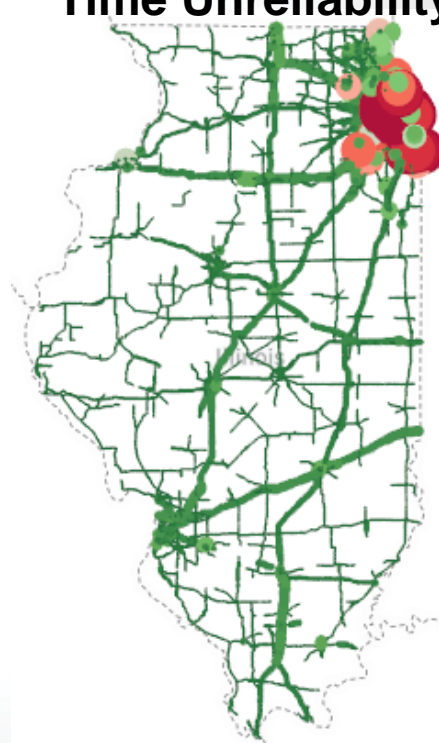
Truck Bottleneck Identification



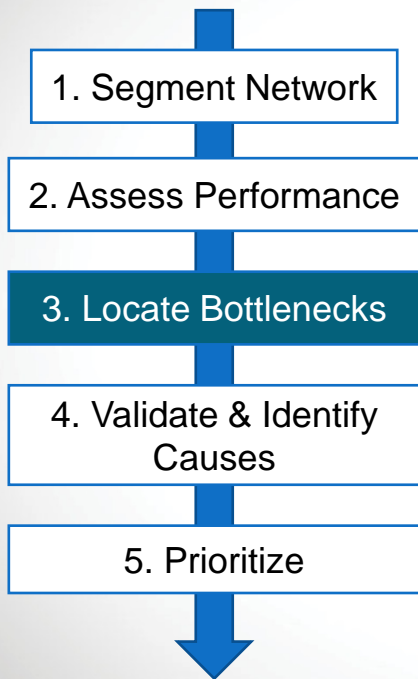
**Recurring Travel
Time Delay**



**Non-Recurring Travel
Time Unreliability**

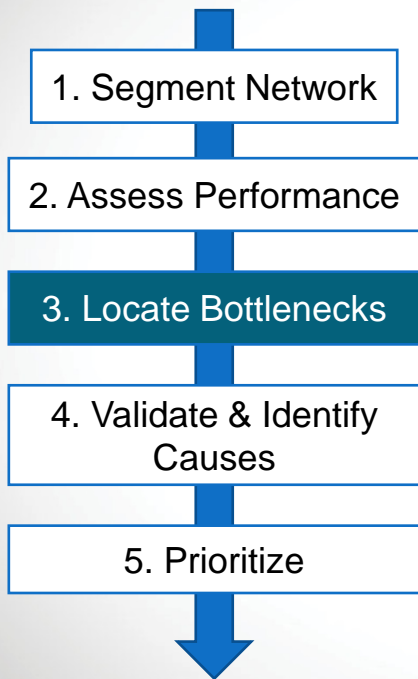


Truck Bottleneck Identification



Threshold Transpo Delay (hr/mile-yr)	Threshold Unreliability	Bottleneck Miles	% Bottleneck Miles of Total	Number of TMC Bottlenecks
38,048.0	11,891.2	498.28	2.5%	749

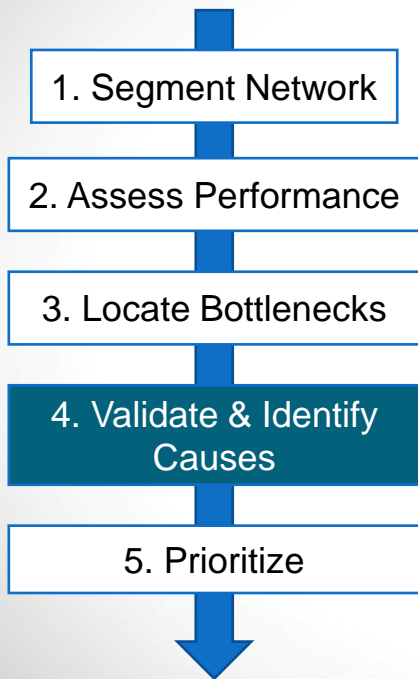
Truck Bottleneck Identification



- Listened to stakeholders
- Got confirmation on performance issue locations

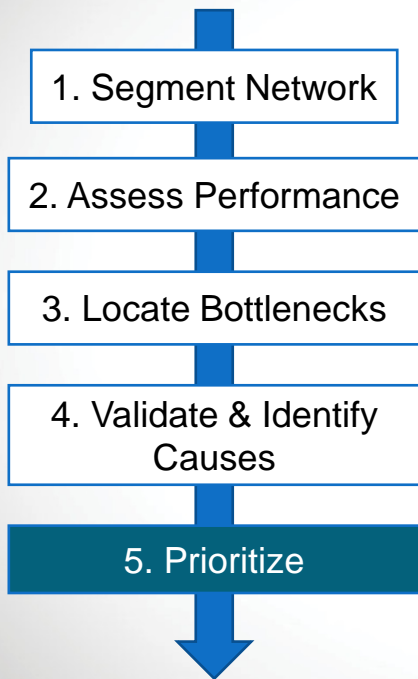


Truck Bottleneck Identification



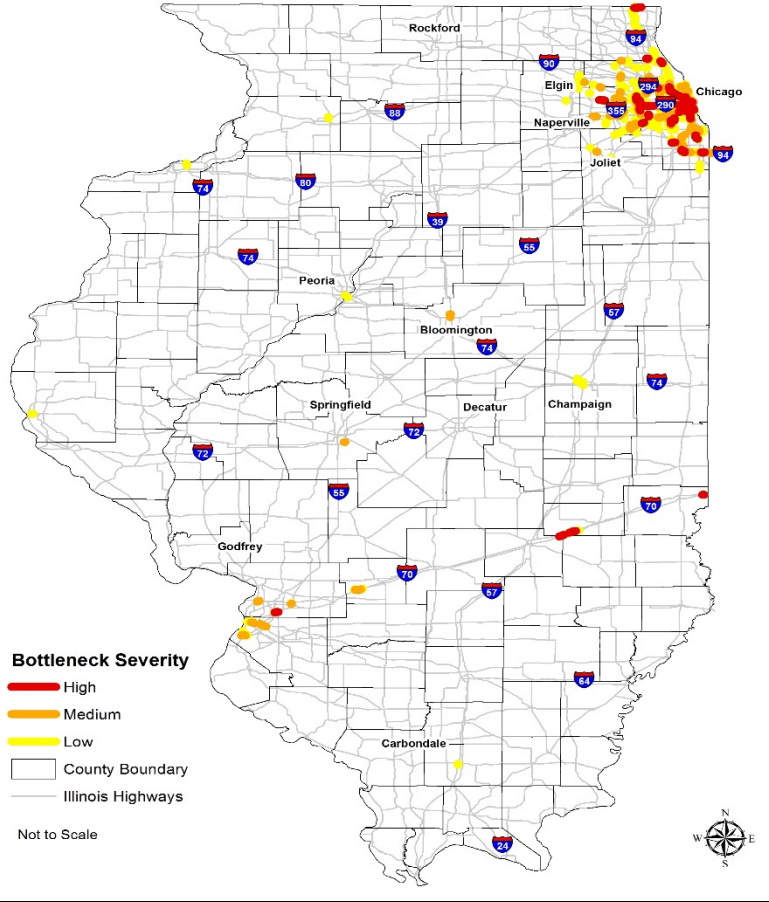
- Use complementary data sets to validate performance issues
- Search for agreement between data sets
- Start to find causes for performance issues
- Correlate performance issues with:
 - **Demand**
 - Freight Analysis Framework Tons 2014
 - Freight Analysis Framework Incremental Tons 2045 to 2014
 - Volume to Capacity Ratio
 - **Incidents**
 - Frequency of truck related collisions, injuries, and fatalities per year (2010 to 2014)
 - **Pavement Condition**
 - Pavement CRS
 - Pavement IRI

Truck Bottleneck Identification



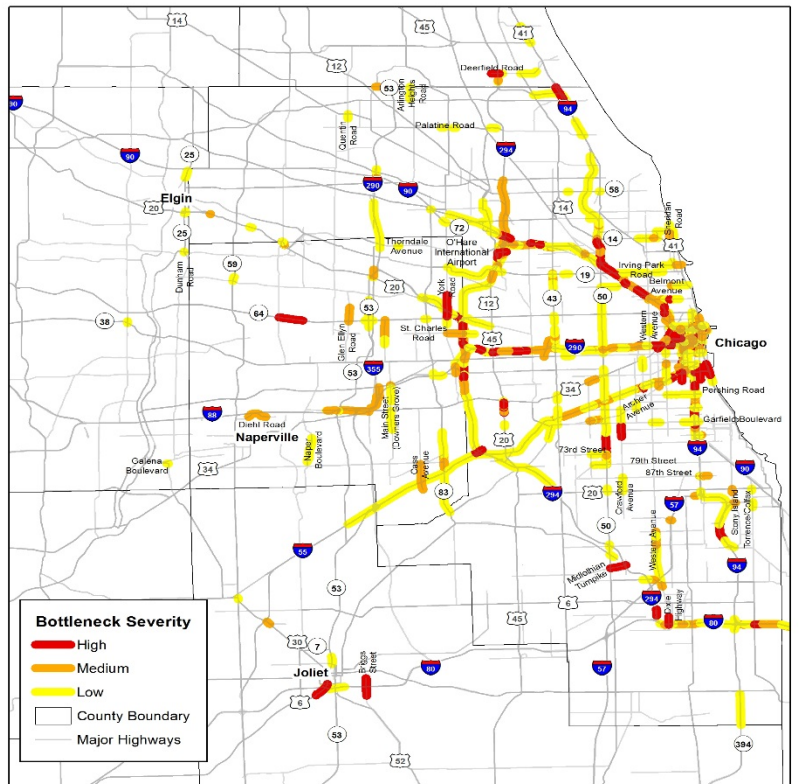
- Rank High, Medium, Low
- Combined percentile rank of Delay and Unreliability

Bottleneck Locations Colored by Severity Statewide



749 Bottlenecks: Statewide View

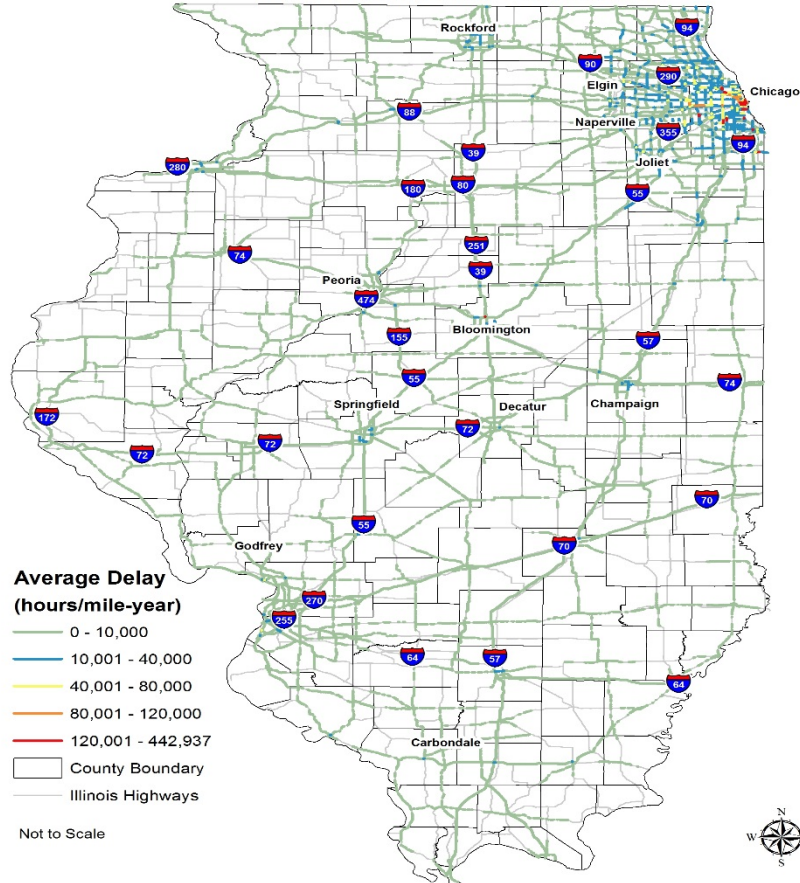
Bottleneck Locations Colored by Severity NE IL



Not to Scale

Northeast IL Bottlenecks Up-Close

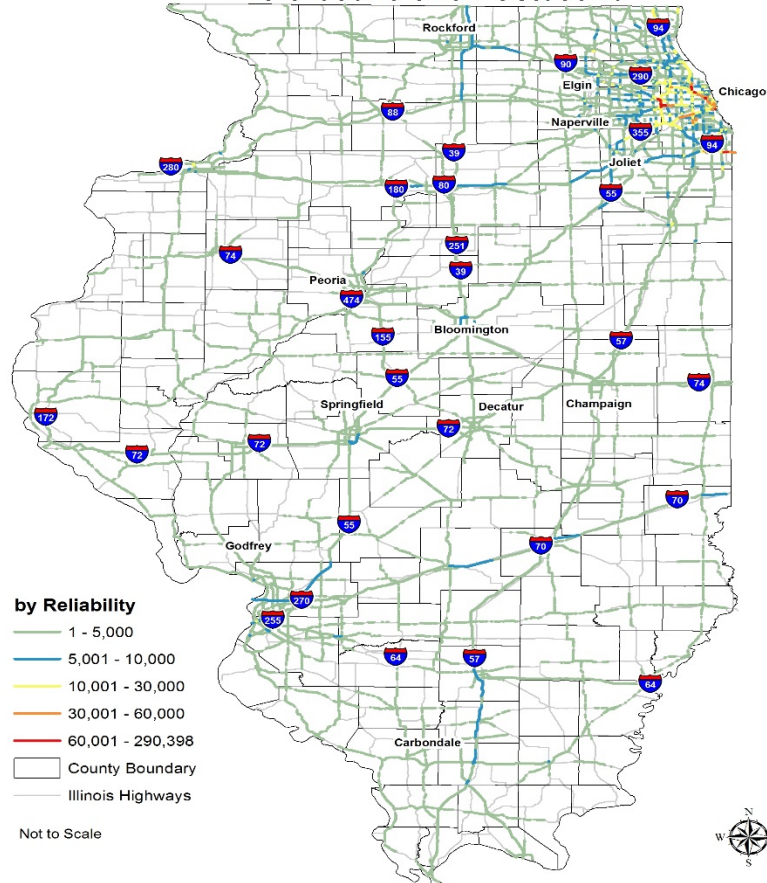
Average Truck Delay, Northbound and Eastbound



Avg. Truck Delay North/East

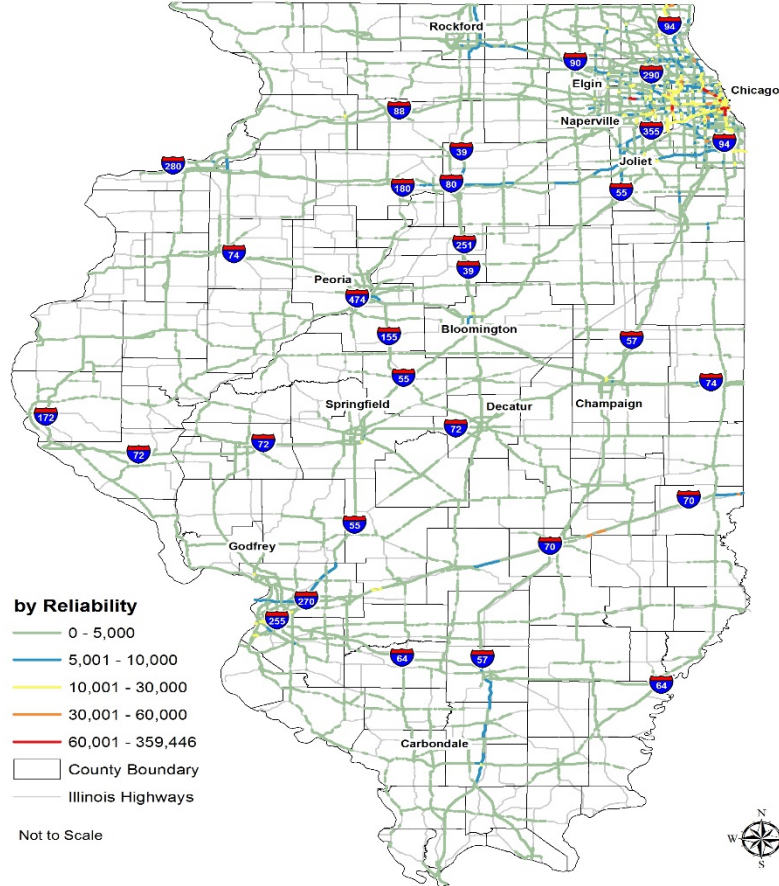


Truck Travel Time Unreliability, Northbound and Eastbound



Reliability North/East

Truck Travel Time Unreliability, Southbound and Westbound



Reliability South/West

Thank You!



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