



Mapping Business to System Performance
*Understanding the Intermodal
Challenge*

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5th International Transportation Systems
Performance Measurement and Data Conference
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Tiger Cool Express LLC

- Asset-based provider of temperature-controlled intermodal transportation

Intermodal transportation



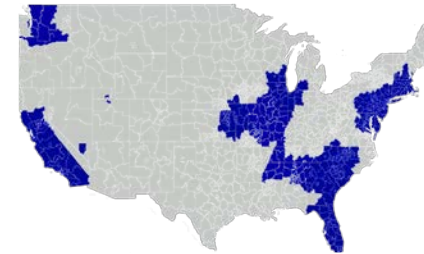
- Established in 2013
- A privately held company led by highly experienced management and private equity backing

State of the art assets



- Brand-new 53-foot refrigerated container fleet meets all CARB requirements
- Telematics enable real time track and trace and complete refrigeration control

Sustainable door-to-door value



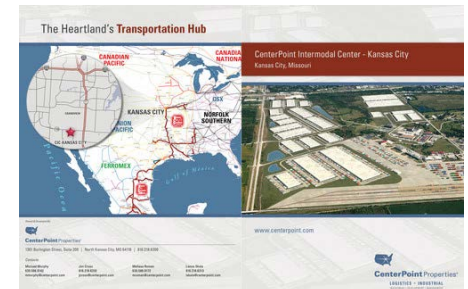
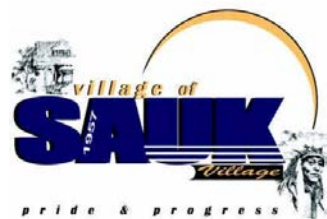
- Nationwide operating network offering intermodal benefits
- Centralized business model with single point of contact

Temperature-controlled intermodal for sustainable advantage

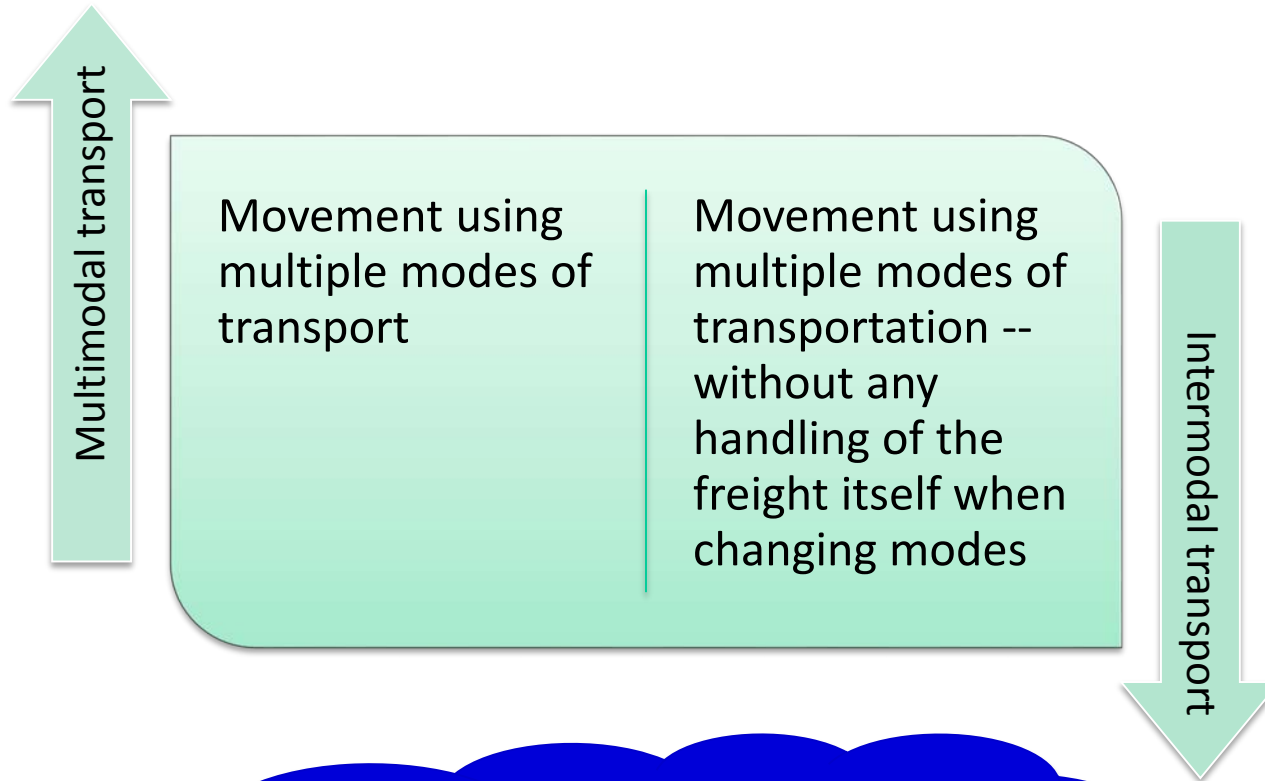
Intermodal Insanity

- 49 U.S. Code § 5501
 - National Intermodal Transportation System policy
 - (a) General.— It is the policy of the United States Government to develop a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the United States to compete in the global economy, and will move individuals and property in an energy efficient way.
- Insanity: doing the same thing over and over again and expecting different results
 - Albert Einstein

Intermodal Insanity



Introduction to Intermodal Networks

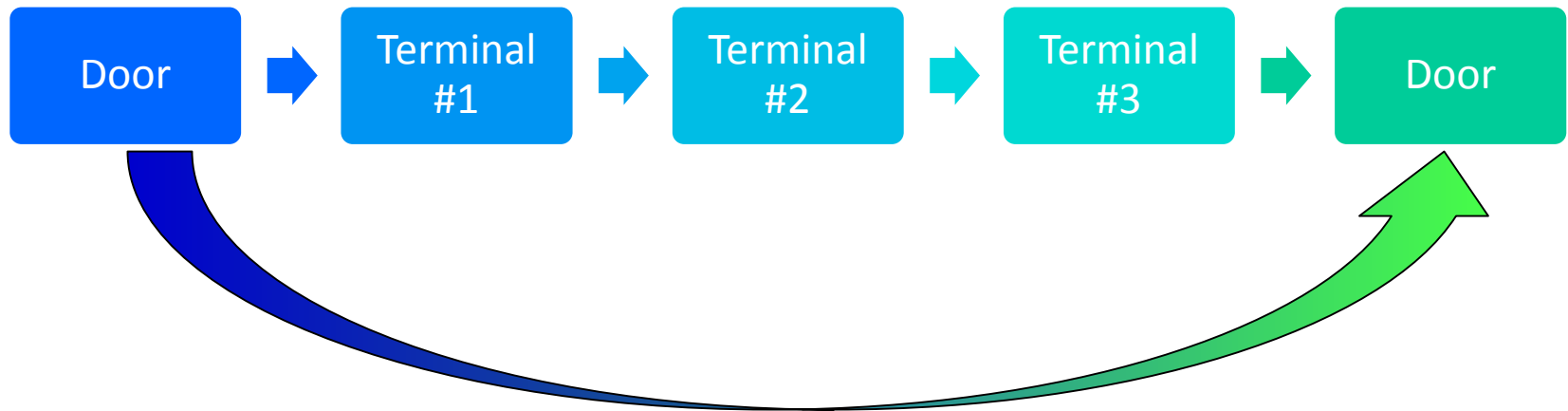


Co-modality “use of different modes on their own and in combination” in the aim to obtain “an optimal and sustainable utilisation of resources.”

European Commission [2006]

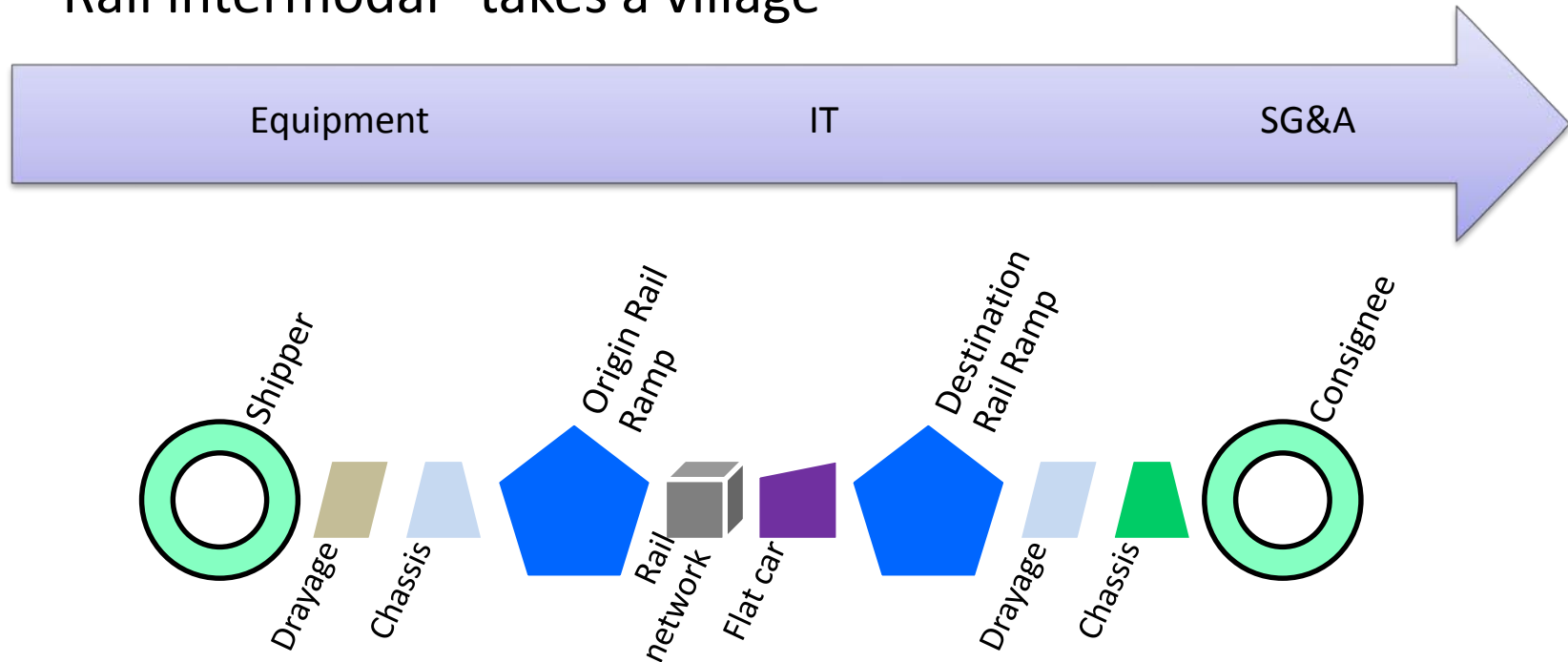
Introduction to Intermodal Networks

- The topology is always identical
 - Intermodal (multiple vehicle) vs.
 - Single vehicle



Introduction to Intermodal Networks

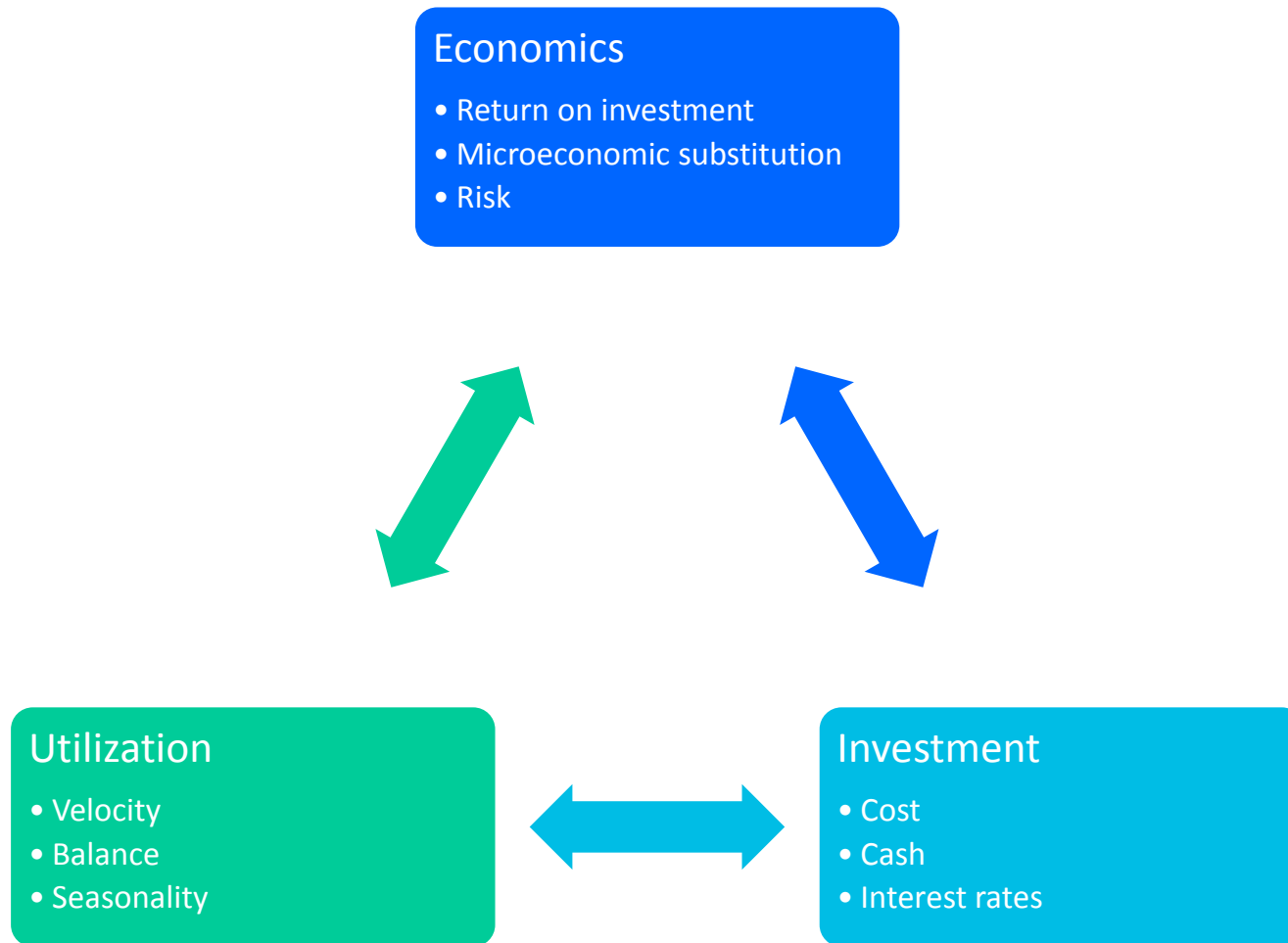
- Rail intermodal “takes a village”



Asset	Intermodal Connectors	Rail network	Rail Terminal	Drayage Tractor	Rail Flat Car	Container	Chassis
Value	Priceless	\$Billions	\$100 million	\$125,000	\$150,000	\$55,000	\$15,000
Investors	Public sector	6 Majors	Railroads	Drayage	Railroads and TTX	Bimodals and lessors	Bimodals and lessors

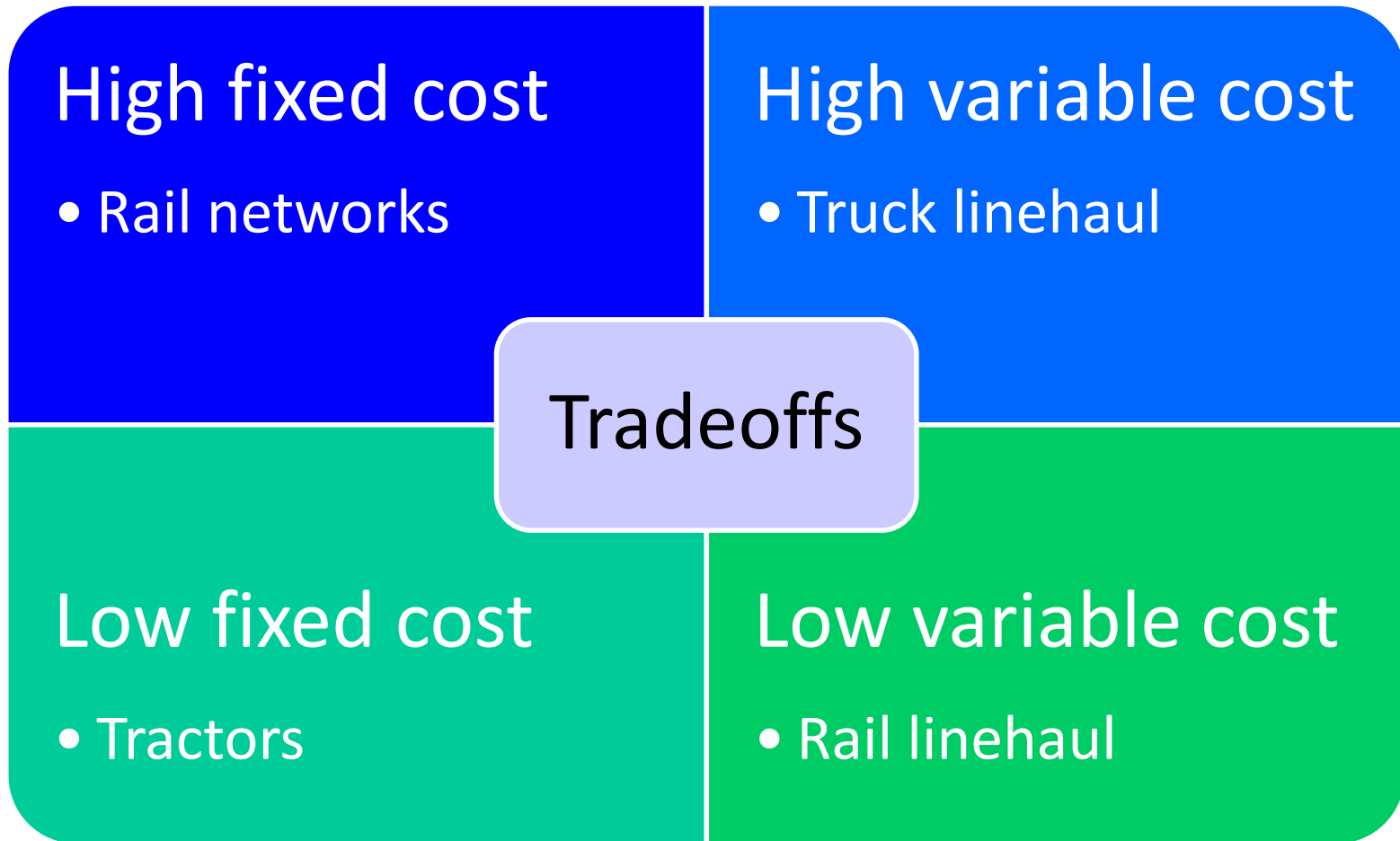
Intermodal Economics

- Transportation is asset-based

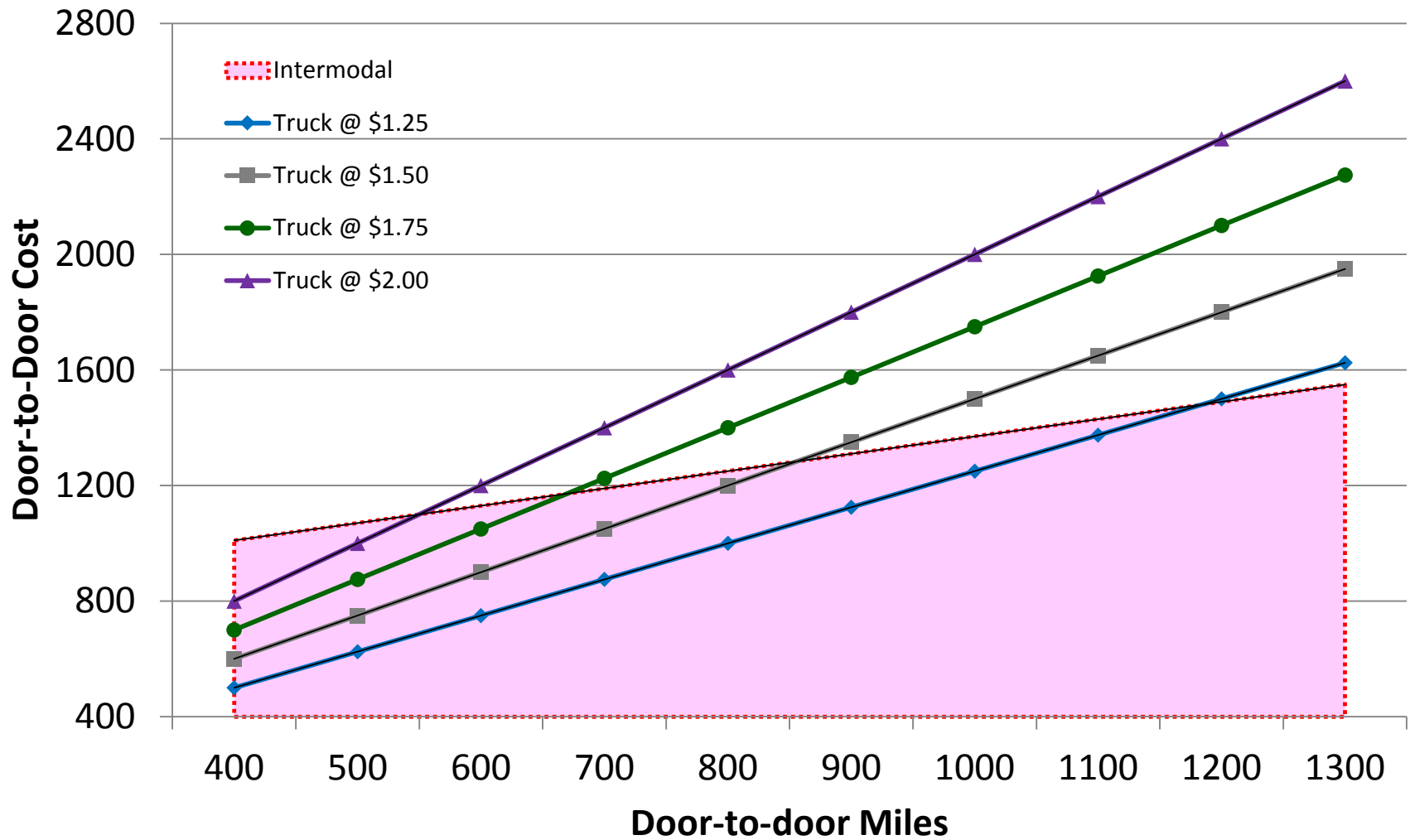


Intermodal Economics

- How does intermodal “beat” truck?



Intermodal Economics



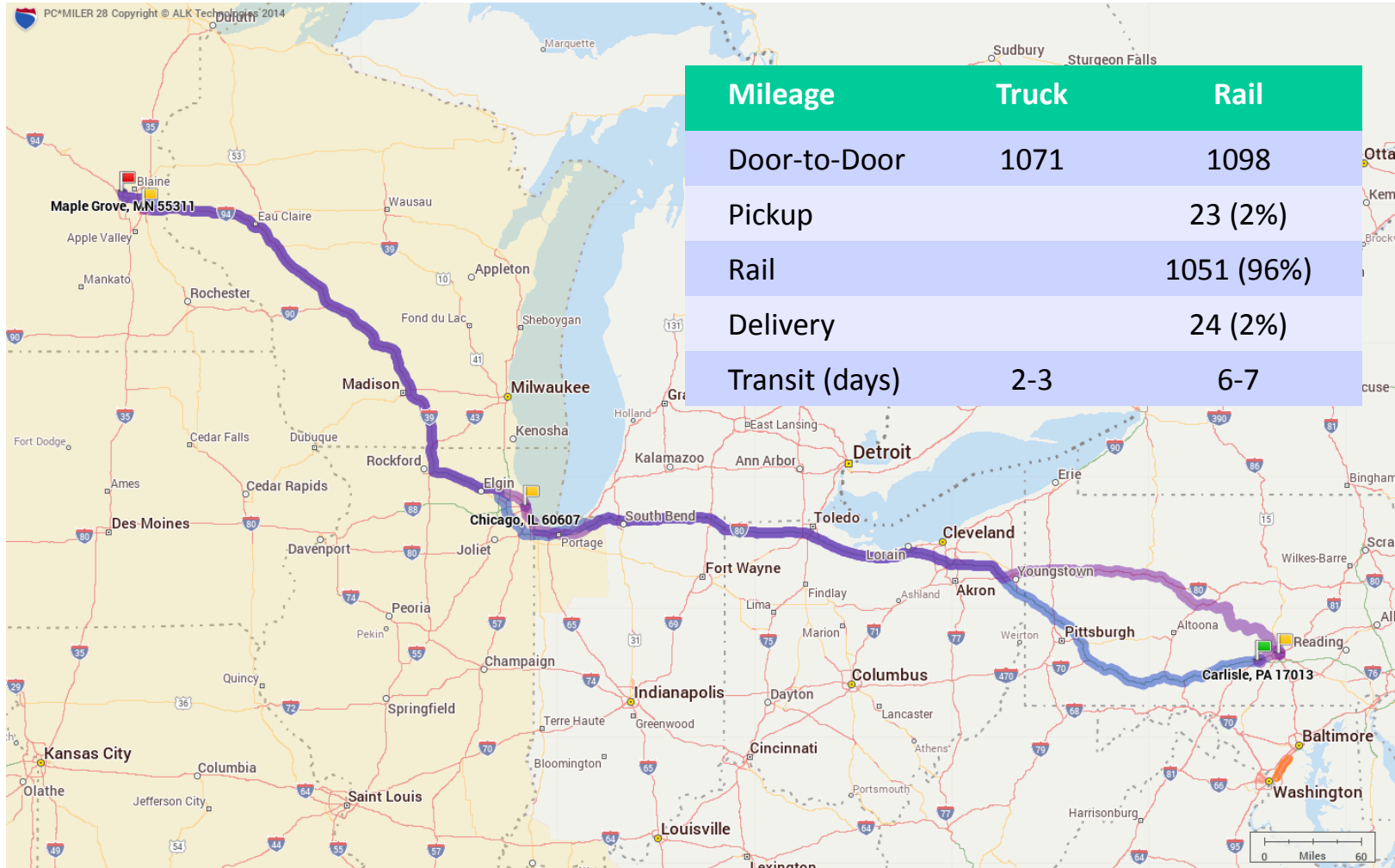
Intermodal Economics

- This corridor (Yuma – Des Moines) doesn't work



Intermodal Economics

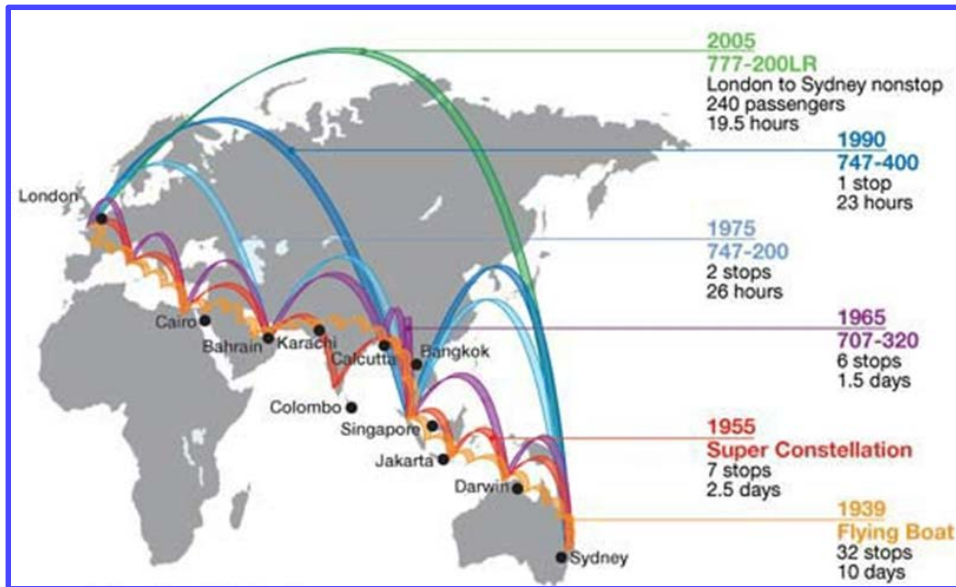
- This corridor (Carlisle – Twin Cities) doesn't work either



The Intermodal Drayage Dilemma

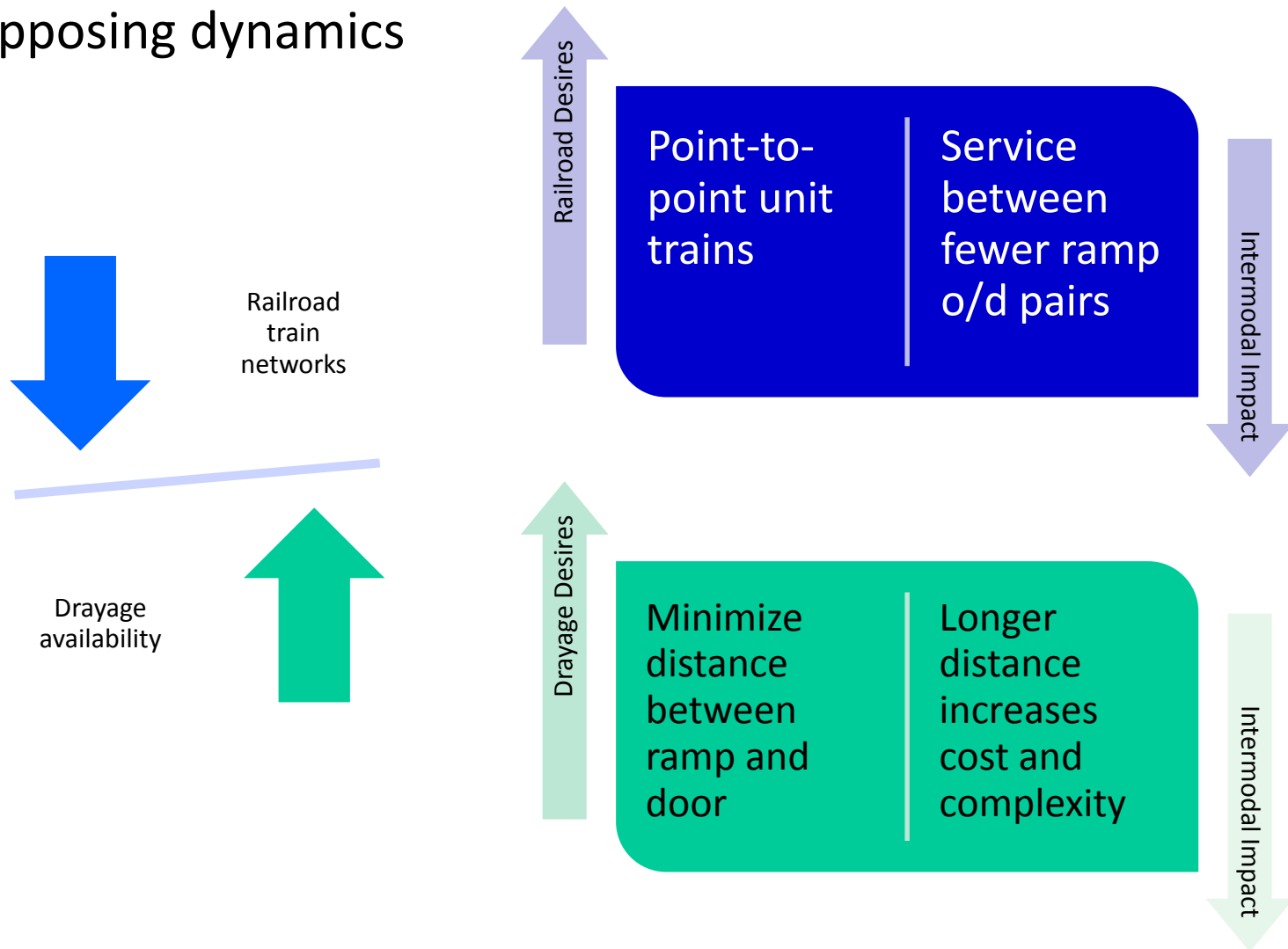
Railroads seek to maximize economies of *scale*

Drayage seeks to maximize economies of *scope*



The Intermodal Dilemma

- Opposing dynamics



Intermodal Constraints

- Hours of service regulations were supposed to be a slam-dunk for intermodal growth
 - They weren't

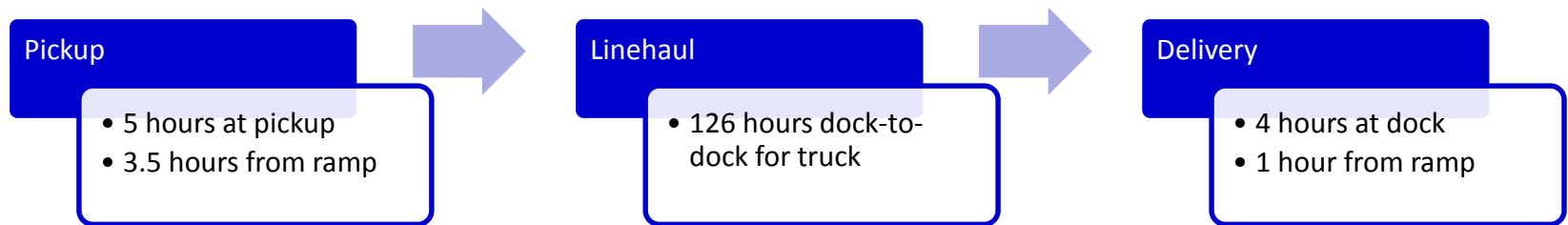


- The same was true for fuel

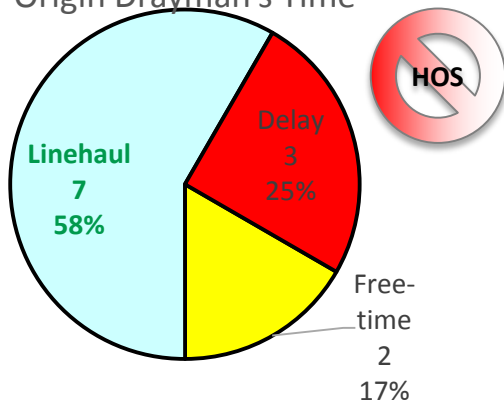


Reliable Dray Capacity

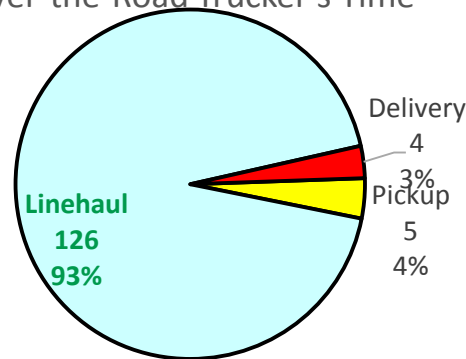
- Intermodal conversion is asymmetric impact of customer dock delay on drayage.
 - Draymen won't accept what owner operators will.



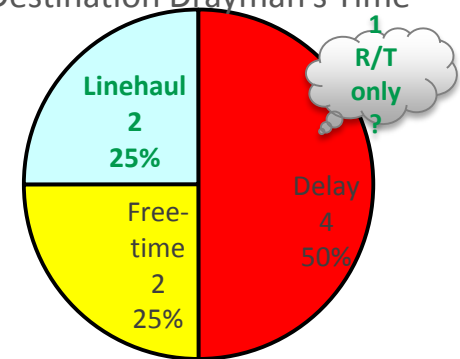
Origin Drayman's Time



Over-the-Road Trucker's Time



Destination Drayman's Time



Concluding Thoughts

- Freight industry's concern
 - We're speaking
 - Public sector isn't listening



Thought #1

- What happened to the “E”?

ISTEA (1991)

- E for Efficiency
- *The greater good*

TEA21 (1998)

- E for Equity
- *What's ours is ours*

SAFETEA (2005)

- E for Excess
- *What's ours is mine*

MAP-21 (2012)

- E for Elusory
- *What do we do?*

Thought #2

- It's the Network!
 - Recognize freight's federal role
 - Freight moves globally in a systemic network fashion



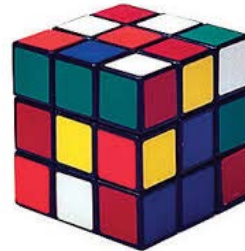
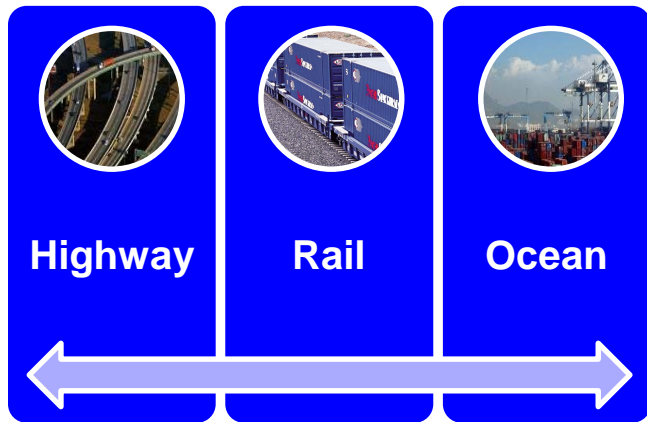
- National priorities must be established while recognizing other constituencies



- Broadest perspective is federal

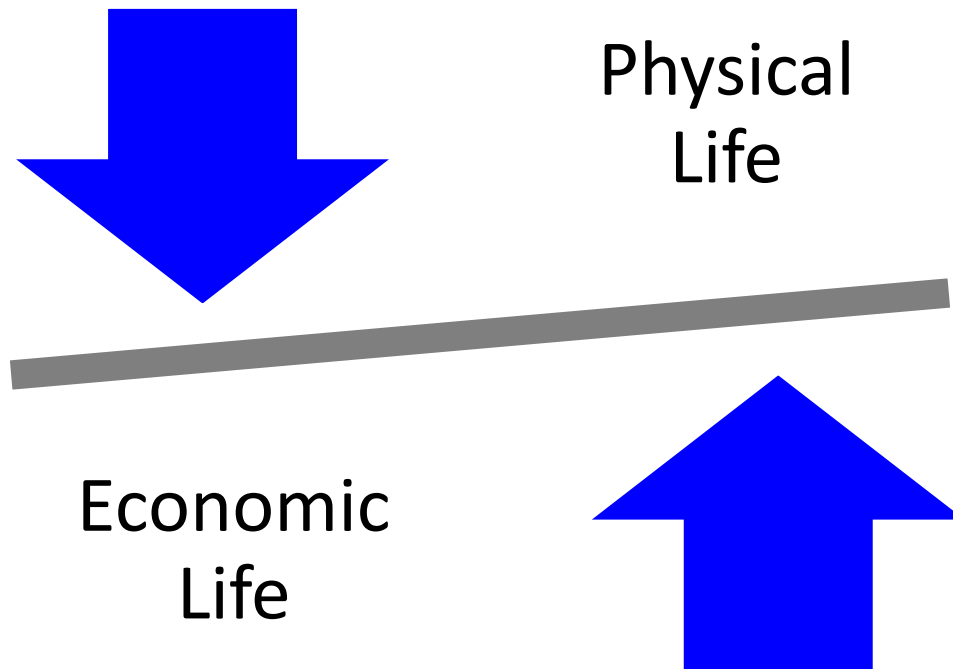
Thought #3

- Modal transportation can't be solved by itself

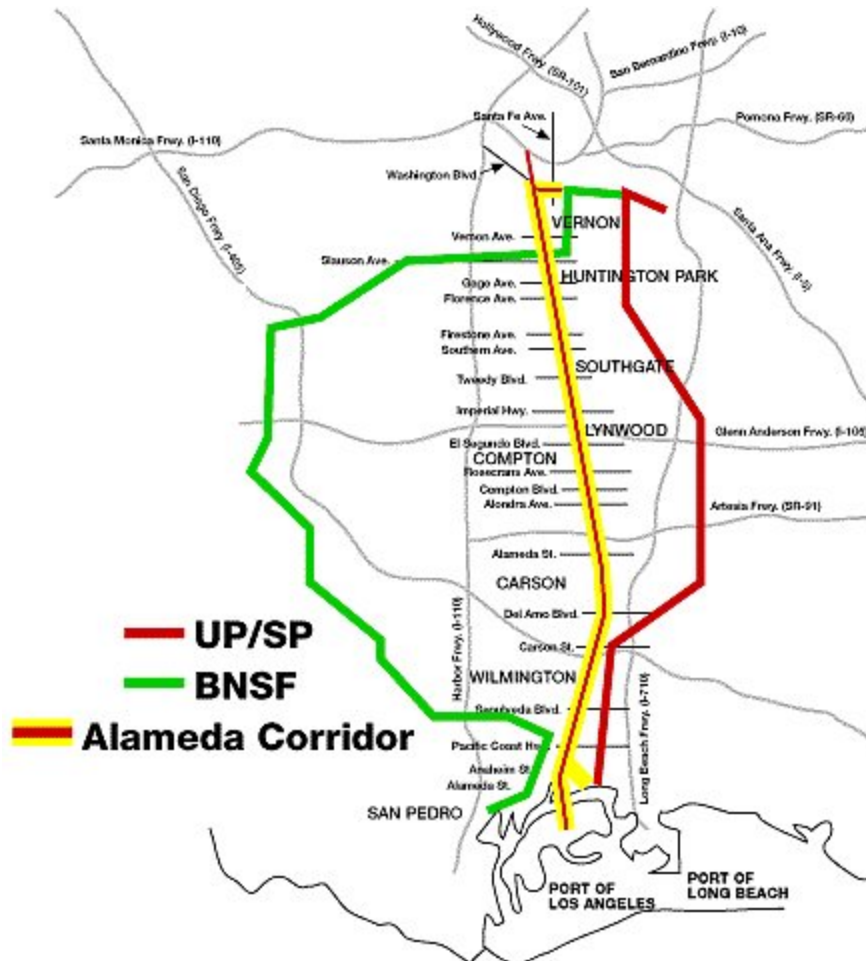


Thought #4

- Consider obsolescence – and the need for flexibility



Thought #4 (Continued)

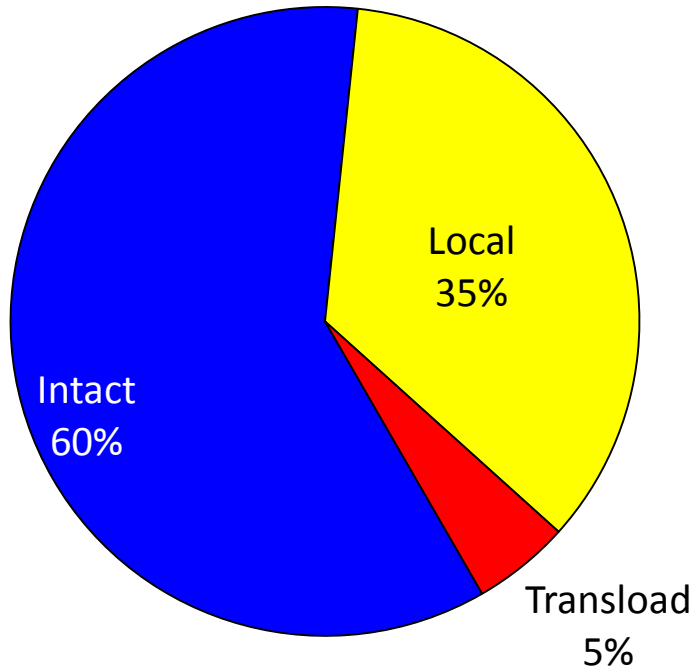


Alameda Corridor plan never considered that traffic mix might change.

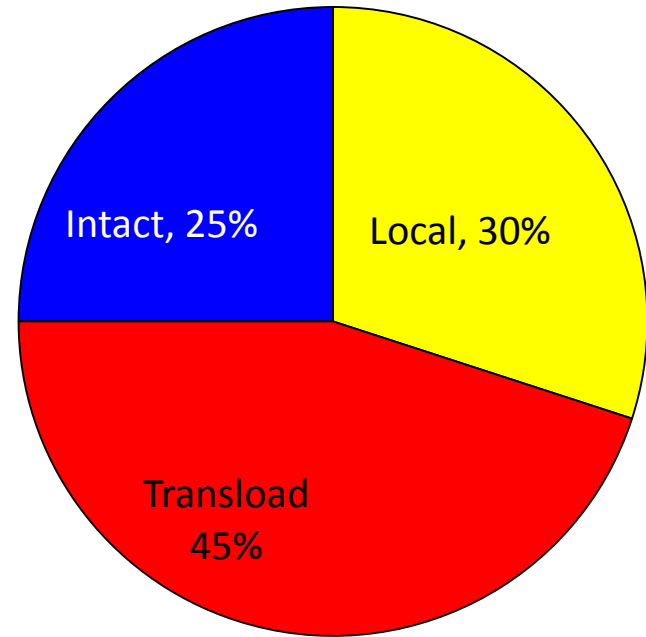
What happens when the traffic comes – but in a different way?

Thought #4 (Continued)

1989: 40% Highway Moves



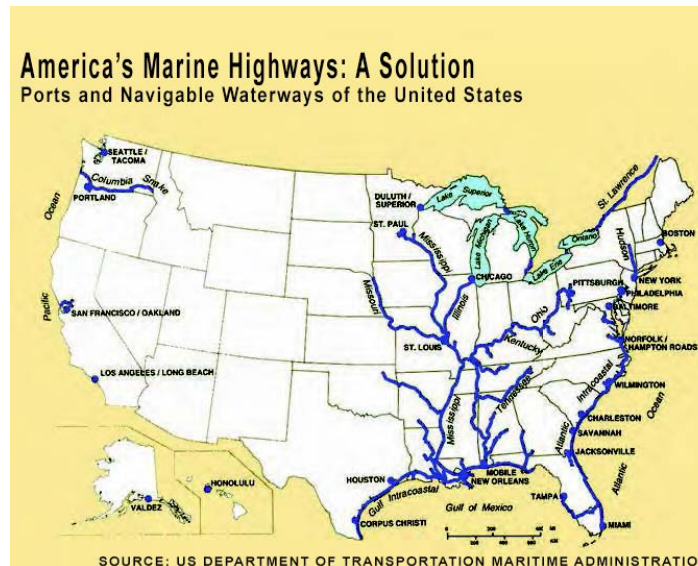
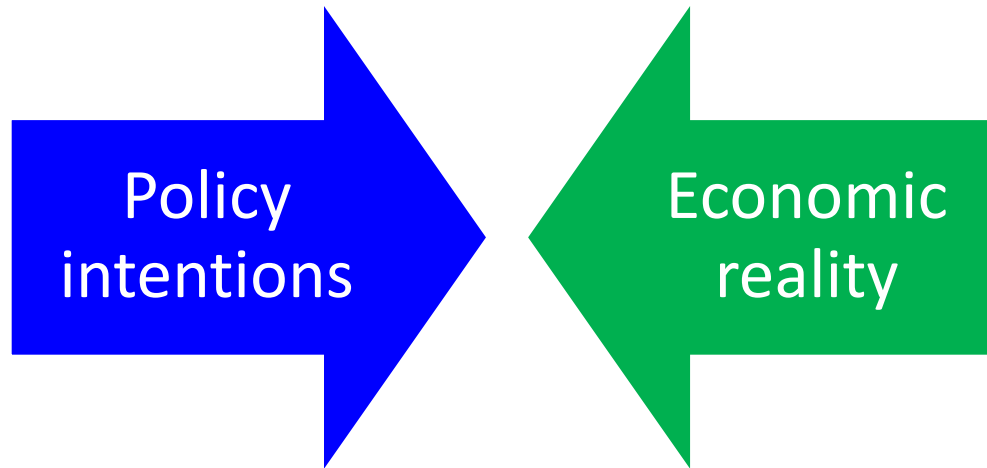
2014: 75% Highway Moves



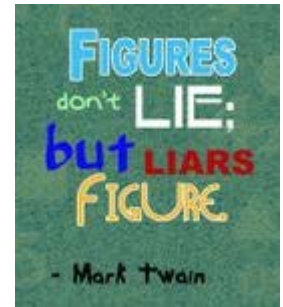
Overall volume grew as mix drastically changed (intact % ↓)
Unintended consequence: even more trucks on the highway.

Thought #5

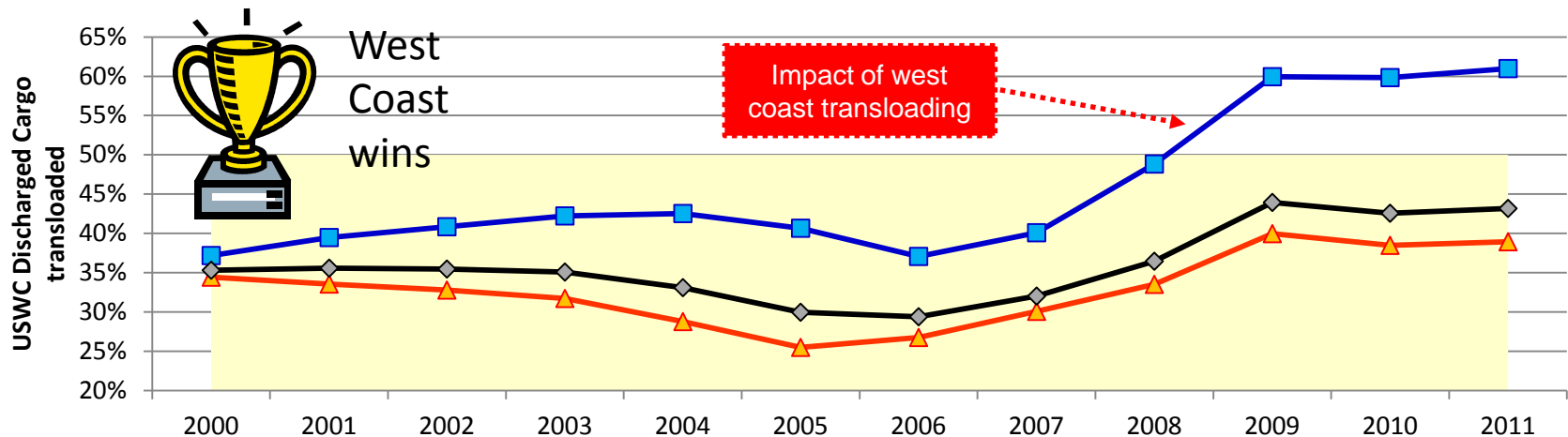
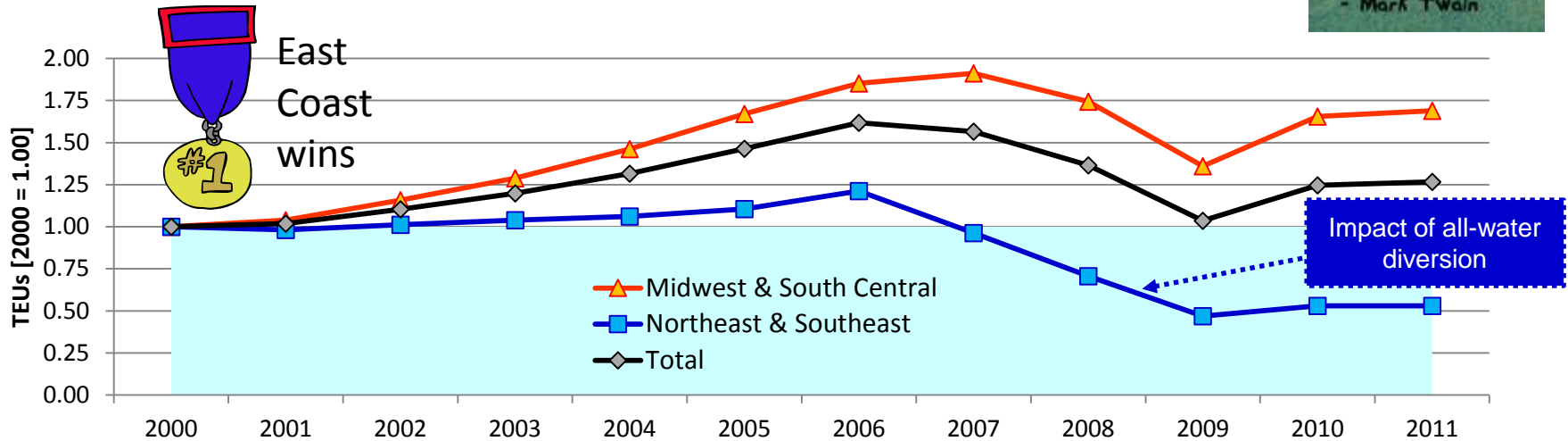
- Be honest: intellectually and analytically



Thought #5 (Continued)



- Different metrics yield different results



A Final Thought

- Vision without a plan is an hallucination

