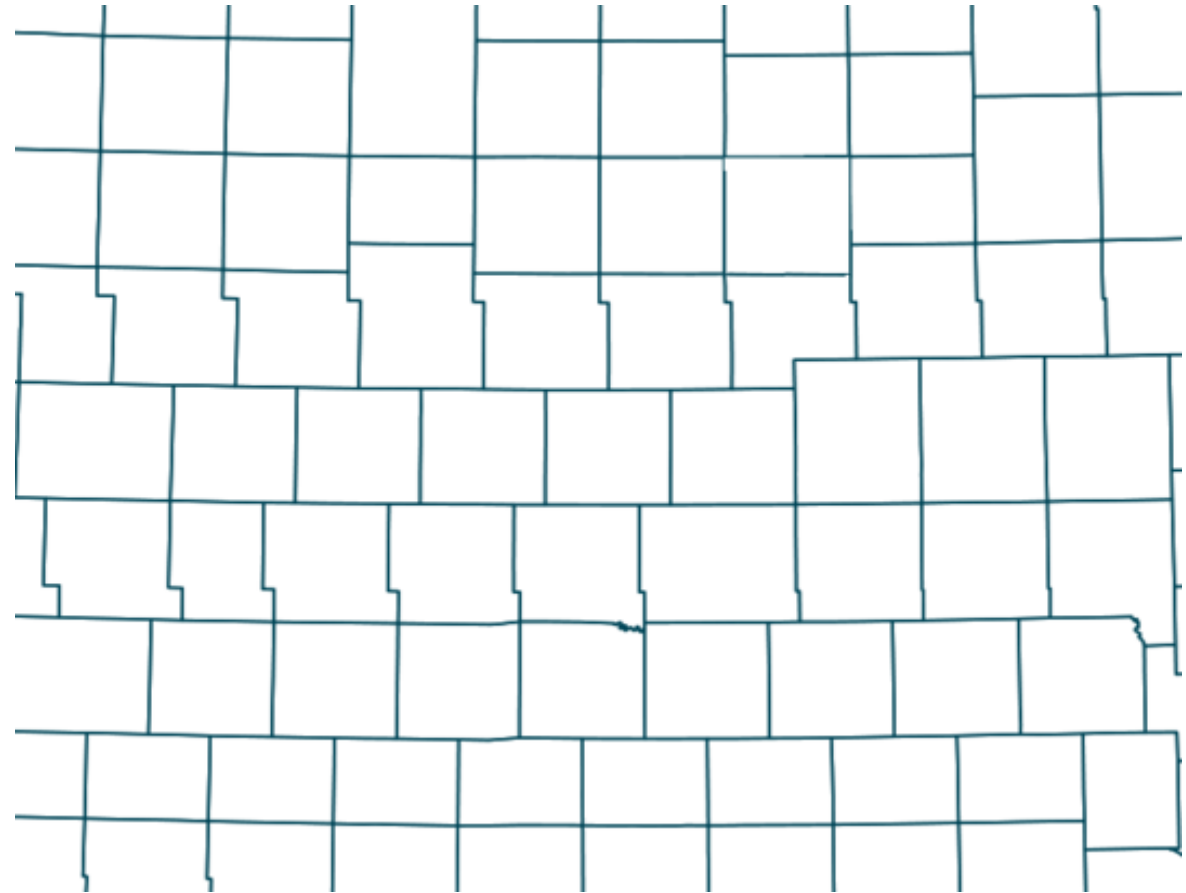


# Transportation & the Economy:

*Drawing Conclusions  
Instead of Drawing Blanks*



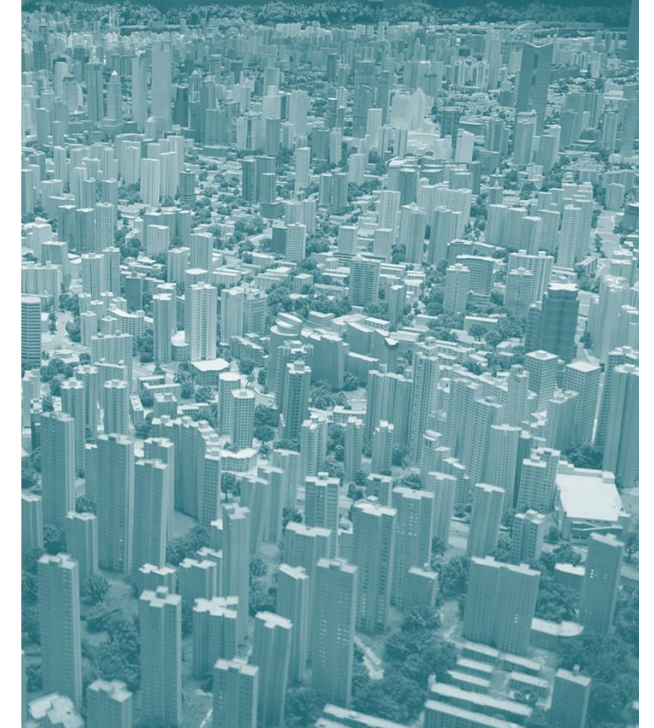
Scott Middleton, EDR Group

TRB Planning Applications Conference, June 4, 2019

# Planning is Hard

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- Economy and technology are always **changing**
- Planning for **uncertainty** and **disruption** is a challenge
- Plans need to consider **tradeoffs** and **asymmetrical consequences**



**How can we pull insights from limited data?**

# Planning for Two Types of Change

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## Organic (Expected) Change

- Economic Growth
- Population Growth
- Tech and Worker Productivity

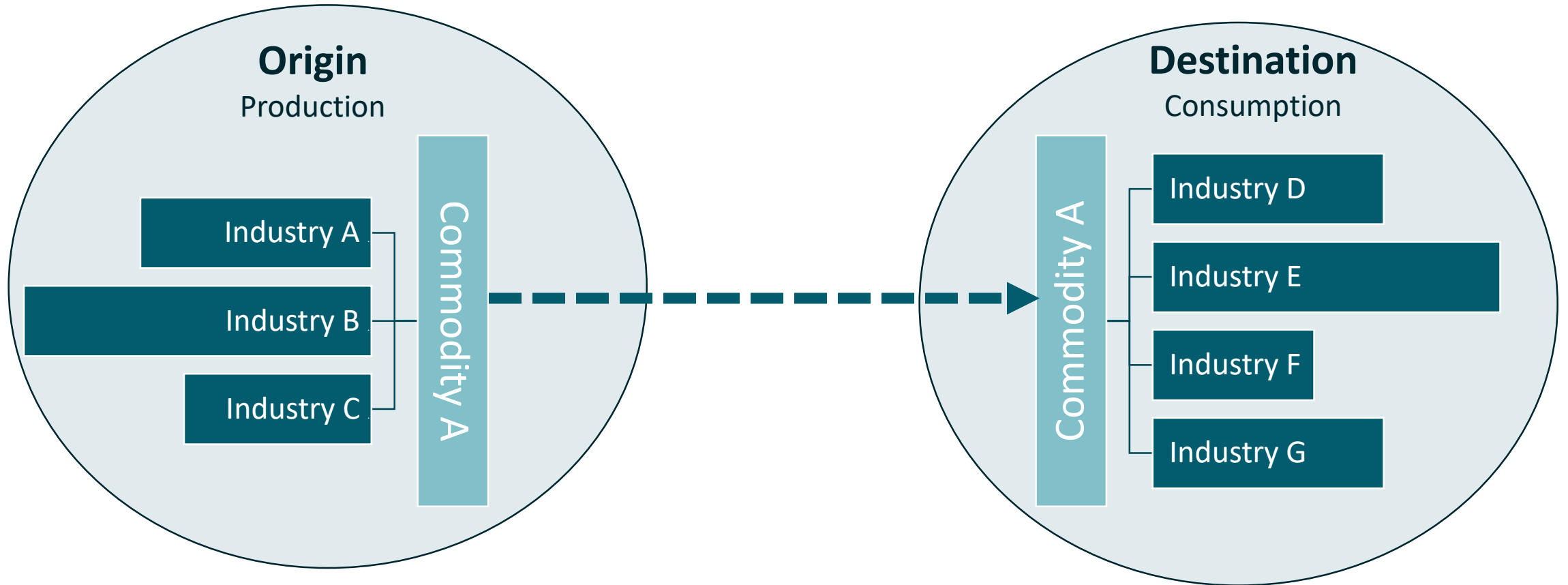
## Disruptive Change

- Global Economy + Trade
- Weather + Seismic Events
- Technology Innovation

## Alternative Futures

- △ Pattern of Population + Economy
- △ Commuting, Personal + Freight Flows
- △ Transportation Investment Needs

# Using Economic Data to Understand Good Movements



# Supporting Planning with Data: Our Examples

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## 1) Organic Change:

Forecasting Freight Flows in the Oregon Economy

Freight Analysis Framework

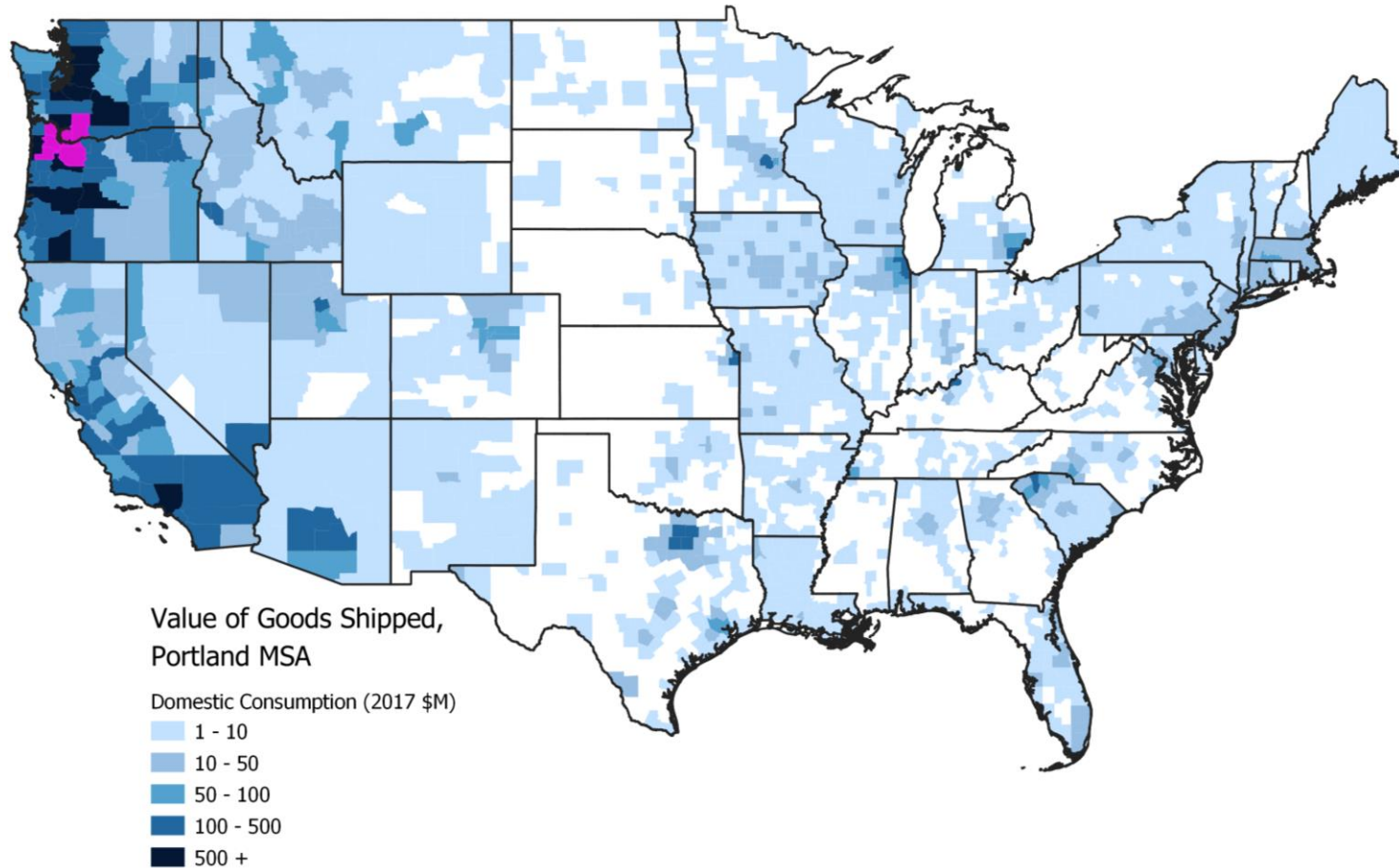
MOODY'S  
ANALYTICS

## 2) Disruptive Change:

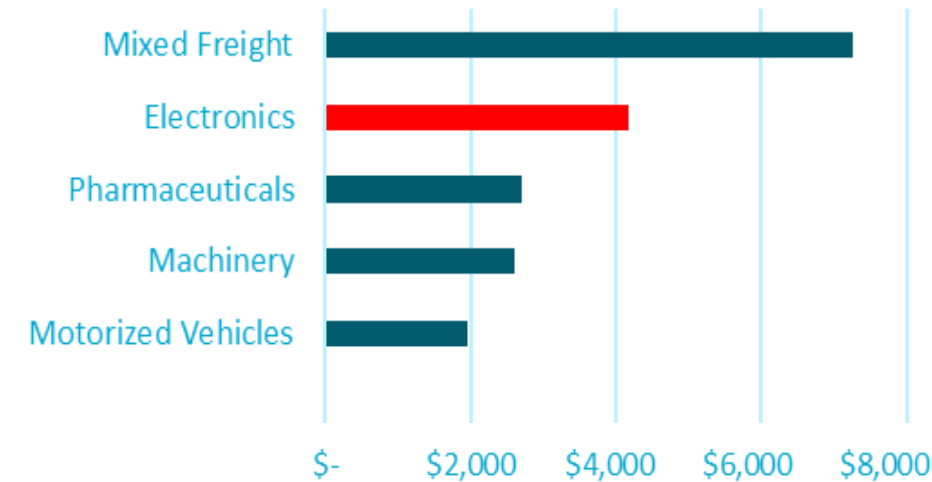
Understanding the Impact of Port Closures in Virginia



# Example 1: Freight Flows from Portland MSA (2017)

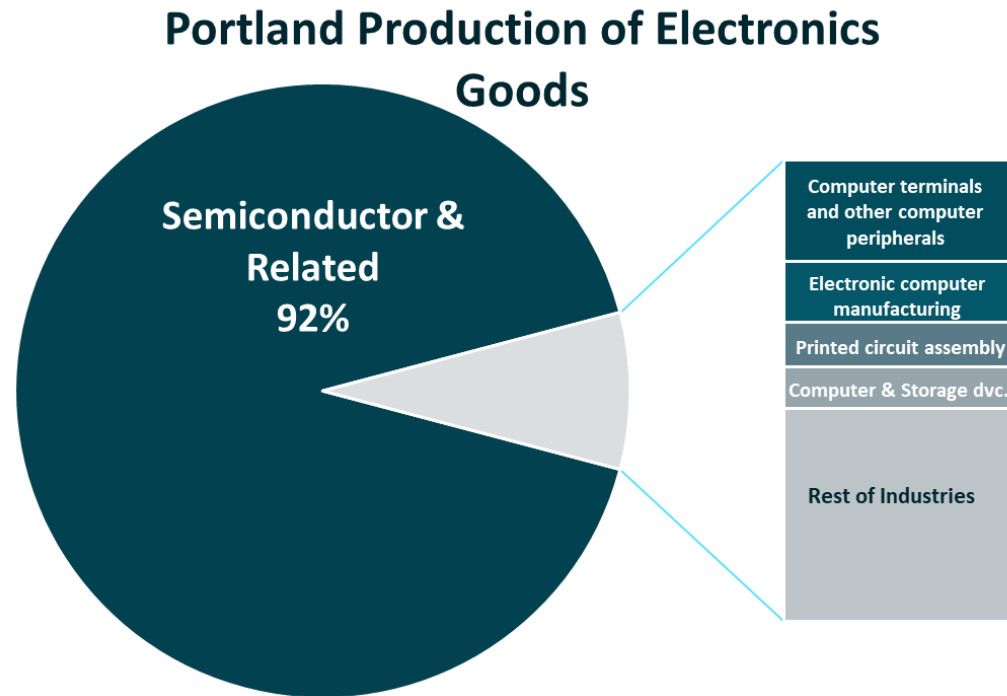


## Top Commodities Shipped by Truck (2017 \$M)

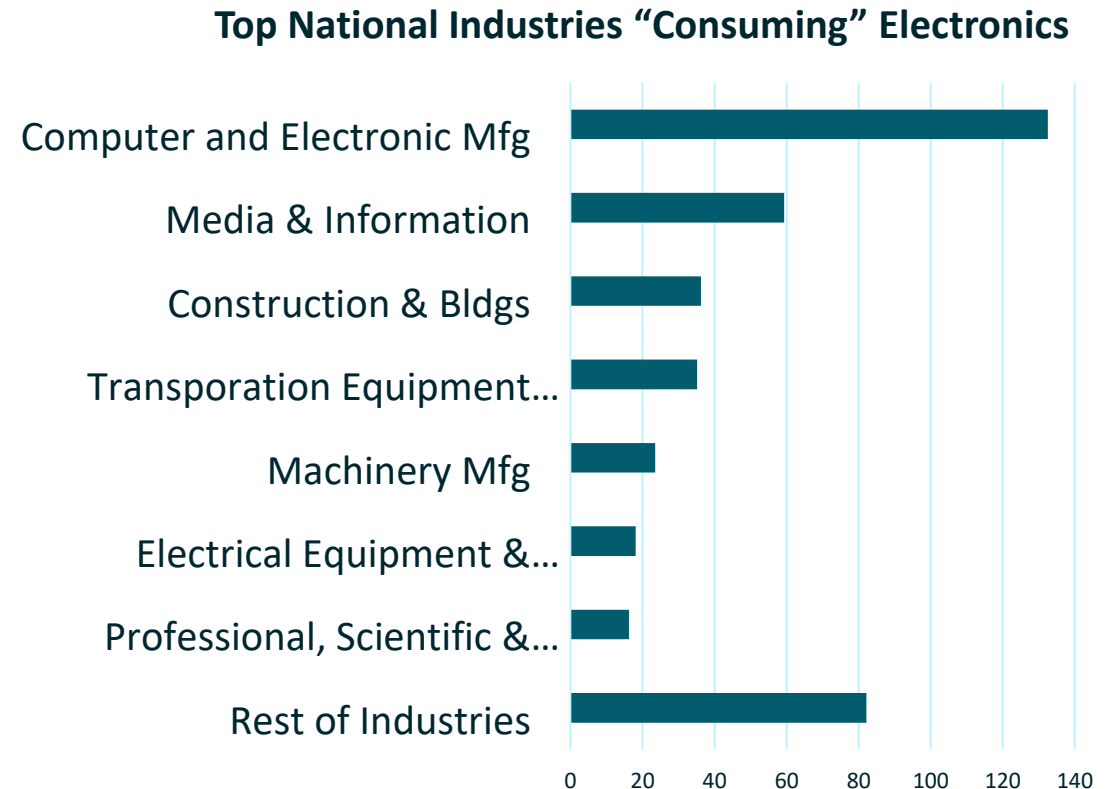


# Example 1: Freight Flows from Portland MSA (2017)

- What does Portland make?

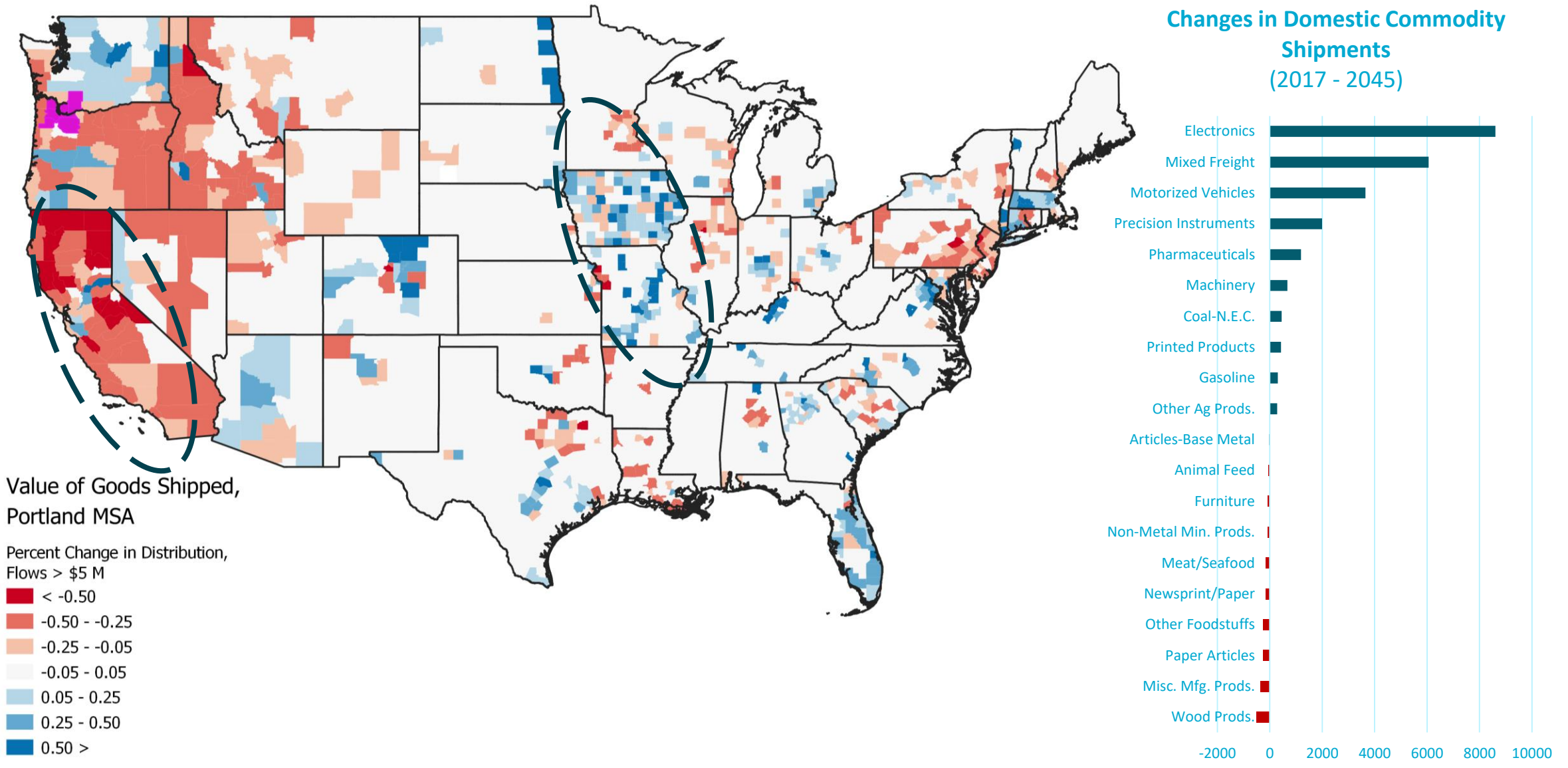


- Who consumes it?





# Example 1: Forecasting Change in Portland Freight (2045)





## Example 2: Impacts of Port Closure in Virginia

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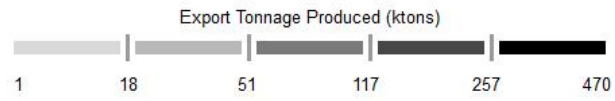
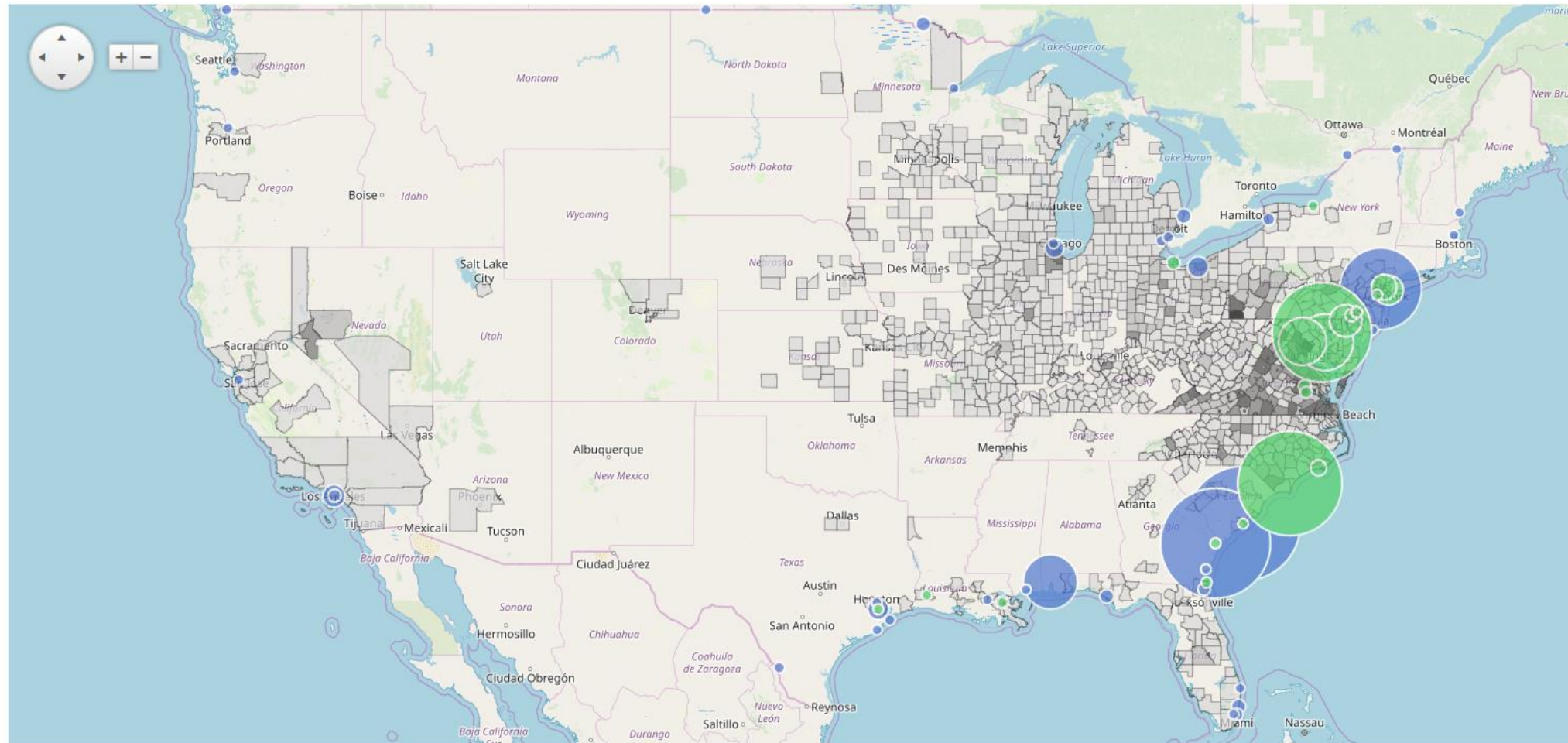
- Imagine the Norfolk Int'l Terminals in the Port of Virginia are closed for 3 months after a hurricane
- Exports will either be trucked from VA (short-term) or diverted to other ports (long-term)
- How can we predict the economic effects for transportation infrastructure



# Example 2: Impacts of Port Closure in Virginia

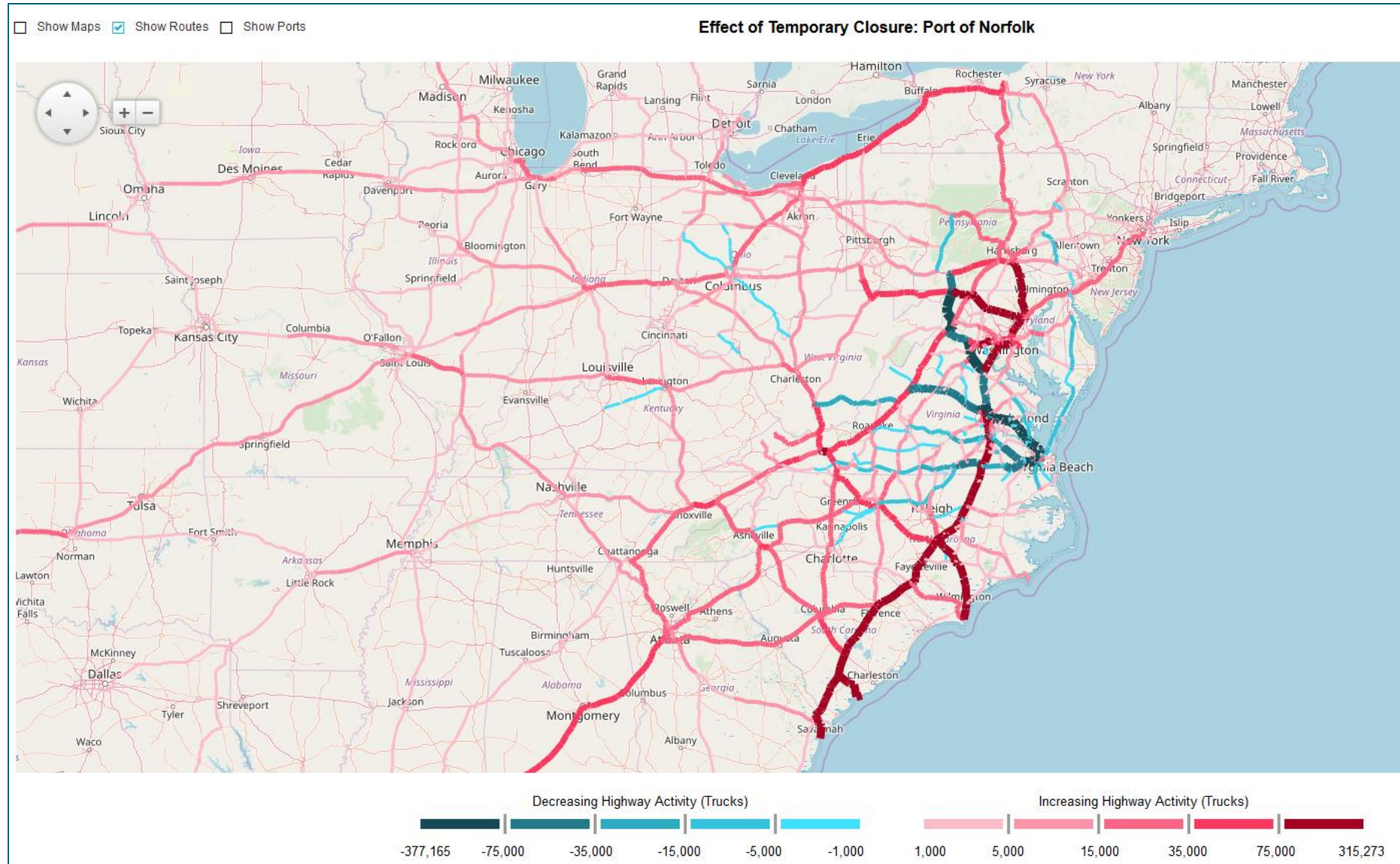
Show Maps  Show Routes  Show Ports

Effect of Temporary Closure: Port of Norfolk



- Blue circle: Re-Routed Ports (By Tonnage Diverted)
- Green circle: Nearest Ports (By Tonnage Diverted)

# Example 2: Impacts of Port Closure in Virginia





# Conclusion: Economic Change Impacts Freight Transportation

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*The freight-economy connection offers the opportunity to use rich data for planning in three steps:*

- 1) Identify external factors and define alternative futures
- 2) Use models to study effect of alternative futures on infrastructure
- 3) Consider acceptable risk (upside or downside) and appropriate actions to manage risk

**Thanks!**

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**Derek Cutler: [dcutler@edrgroup.com](mailto:dcutler@edrgroup.com)**

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# Appendix: Generation of Freight Data

