

Delmarva Freight Study

March 21, 2013



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DELMARVA FREIGHT STUDY

Agenda

1. What is the Delmarva Freight Study?

- MAP-21

2. Efforts to date

- Economic/Industry factors
- Data Collection
- Development of Cube Cargo

4. Possible Scenarios/Document Development

5. Next Steps



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What is the Delmarva Freight Study?

- A multi-state, multi-MPO effort to develop a comprehensive, multi-modal evaluation of the freight transportation system and its operations along the Delmarva Peninsula.
- According to MAP-21, States must have a freight plan which can improve the ability for them to meet the goals set by the National Freight Policy.
- Not a requirement, but in order for some projects to be eligible for fed \$, they must come from a freight plan!



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What is the Delmarva Freight Study?

- To comprehensively evaluate the multimodal freight transportation system and related operations on the Delmarva Peninsula
- To determine its effect on the environment and economic development
- To develop and assess future planning scenarios to identify priorities for relevant investment and regulation changes

MAP 21: A State Freight Plan must improve the ability of the State to meet the national freight goals established under 23 U.S.C. 167 and included as part of the National Freight Policy, while also highlighting and/or expanding on the most important strategic goals for the State.



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Key Functions of Study

- Collect up-to-date commodity flow data
 - Transearch, FAF3
- Conduct agency, industry and shipper outreach
- Develop CUBE Cargo Model
- Generate current/future freight forecasts for multiple modes (truck, rail, water, pipeline)
- Analyze future planning scenarios



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Freight plan goals to address MAP-21

- Freight Connectivity, Mobility & Accessibility
- Safety & Security
- Sustainability & Environmental Stewardship
- Economic Vitality
- System Management, Operations & Maintenance



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Goals

Freight Connectivity, Mobility & Accessibility

- ❖ **MAP-21:** Reduce congestion on the freight transportation system
- ❖ **Delmarva Focus:** Enhance freight mobility through broader transportation improvements that recognize the unique **seasonal or tourist-based congestion** aspects of travel to, from, and within the Delmarva Peninsula
- ❖ **Delmarva Focus:** Enhance freight network connectivity with an emphasis on the unique needs and constraints related to serving the Delmarva Peninsula as a peninsula with **limited geographical points of access**
- ❖ **Delmarva Focus:** Enhance opportunities for accessing and utilizing the freight transportation network on the peninsula through **strategic multimodal infrastructure improvements**

Goals

Safety & Security

- ❖ **MAP-21:** Improve the safety, security, and resilience of the freight transportation system
- ❖ **Delmarva Focus:** Support improvements that recognize the criticality and **regional / national freight significance of the I-95 / Northeast Corridor**
- ❖ **Delmarva Focus:** Support improvements that enhance **system redundancy** with respect to the I-95 / Northeast Corridor and with respect to the geographical point of access limitations of the peninsula
- ❖ **Delmarva Focus:** Support improvements that recognize the presence and unique needs of the **region's governmental, military, or international shipping** communities

Goals

Sustainability & Environmental Stewardship

- ❖ **MAP-21:** Reduce adverse environmental and community impacts of the freight transportation system
- ❖ **Delmarva Focus:** Support improvements that recognize the unique relationships between consumer demand and commodity flows on the peninsula with respect to **seasonal or tourist-based variability and quality of life**
- ❖ **Delmarva Focus:** Support efforts to improve the flexibility and resiliency of the freight transportation system to meet **changing global energy demands or sources**

Goals

Economic Vitality

- ❖ **MAP-21:** Improve the contribution of the freight transportation system to economic efficiency, productivity, and competitiveness
- ❖ **Delmarva Focus:** Support efforts to preserve **existing multimodal freight-transportation infrastructure** to assure mode choice & competition between modes
- ❖ **Delmarva Focus:** Support efforts to preserve **land use compatibility** adjacent to freight infrastructure throughout the peninsula
- ❖ **Delmarva Focus:** Support strategically-located or planned improvements that recognize the existing and projected **population concentrations, employment and development, and related secondary traffic / population-based freight patterns**
- ❖ **Delmarva Focus:** Support efforts that address **changes in economic activities** (local, regional, national, or global) or **growth in targeted industries**
- ❖ **Delmarva Focus:** Support efforts to enhance **access to/from major regional ports** and international shipping opportunities in multiple surrounding states

Goals

System Management, Operations & Maintenance

- ❖ **MAP-21:** Use advanced technology, performance management, innovation, competition, and accountability in operating and maintaining the freight transportation system
- ❖ **MAP-21:** Improve the state of good repair of the freight transportation system
- ❖ **Delmarva Focus:** Enhance policies and opportunities related to truck parking & rest areas, weight limits, taxes, tolls, or other **motor freight specific issues**
- ❖ **Delmarva Focus:** Support efforts to address physical improvements on **secondary roads and bridges** critical to motor freight access throughout the peninsula
- ❖ **Delmarva Focus:** Support efforts to maintain or enhance dredging operations and the identification and preservation of **adequate spoil sites for dredged materials**

ECONOMIC/ INDUSTRY FACTORS

Developed by Vantage Point Development Advisors LLC. to provide:

- DEMOGRAPHIC/ INDUSTRY OVERVIEW
- FREIGHT DEPENDENT INDUSTRIES
- INDUSTRY MODES/ MARKETS
- INDUSTRY IDENTIFIED FREIGHT ISSUES
- GEOGRAPHIC SPECIFIC ISSUES



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ECONOMIC/ INDUSTRY FACTORS

Freight traffic in the Delmarva region is highly concentrated. Five commodity groups constitute over 70% of the region's truck traffic.

Commodity	Millions of Tons*	Cumulative %
50 Secondary Traffic	12.8	20%
32 Clay, Concrete, Glass, Stone	12.6	40%
20 Food and Kindred Products	6.6	51%
29 Petroleum and Allied Products	6.6	61%
28 Chemical or Allied Products	7.4	73%
33 Primary Metal Products	2.9	78%
24 Lumber or Wood Products	2.3	81%
37 Transportation Equipment	1.5	84%
26 Pulp, Paper and Allied Productst	1.1	86%
34 Fabricated Metal Products	0.7	87%
Else	8.4	100%
TOTAL	62.9	

* Includes inbound, outbound, and local truck tons



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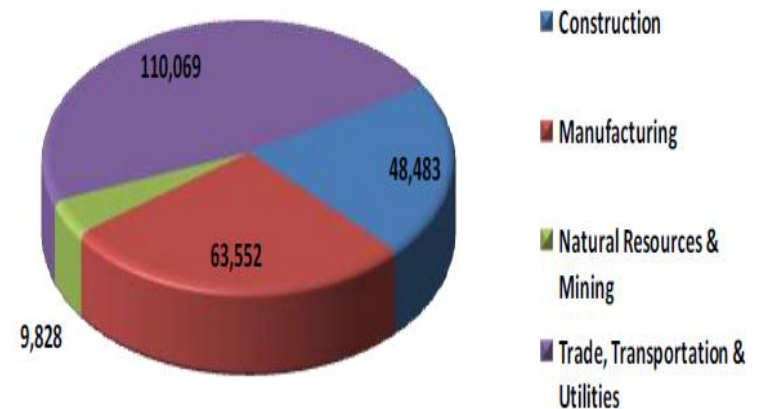
DELMARVA FREIGHT STUDY

ECONOMIC/ INDUSTRY FACTORS

Demographic Data Analysis Commodity Flow & Households

- Growth in Households will Drive Internal Peninsula Shipments of Secondary Traffic to Meet the Demand of Consumers.
- Employment in the Top 4 Freight Related Industries is over 1/3 Total Employment, Half of which is in Trade, Transportation & Utilities.

2011 Number of Employees by Industry



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Industrial Outlook

- U.S. Spends Only 1.7% of its GDP on Transportation Infrastructure while Canada Spends 4% & China Spends 9% . (Source: KC Smartport Supply Chain Centered)
- Infrastructure Deficiency Decreases Productivity Per Worker, Critical Job Opportunities are Lost in Highly Skilled & Well-Compensated Non-Transportation Sectors Throughout the Economy. (Source; Report by American Society of Civil Engineers, 2011)
- **Implications for Delmarva:** With the Major Congestion Issues, Residential Encroachment, the Need for Improved Motor Freight, Barge & Potential Rail Service is Critical, there is a Strong need to Address the Infrastructure Deficiencies & Provide it.
- Peak Seasonal Traffic Coincides with the Need for Motor Freight Traffic to Serve Peak Seasonal Population, Creates Additional Congestion Issues Related to Freight Movement, Economic Stability & Quality of Life.



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Data Collection



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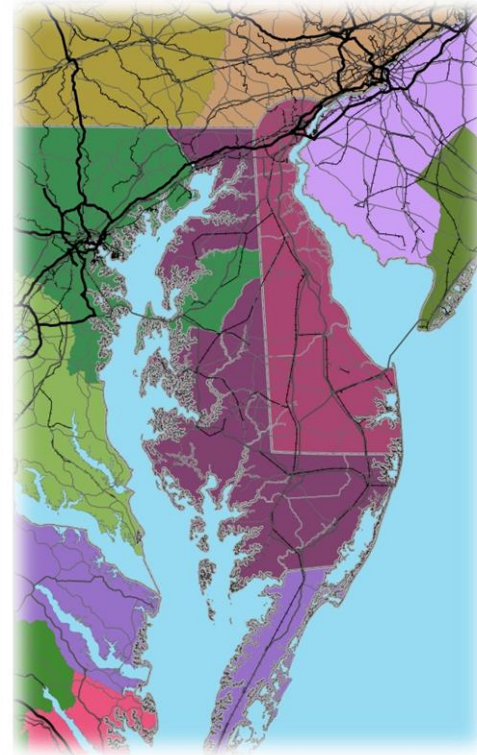
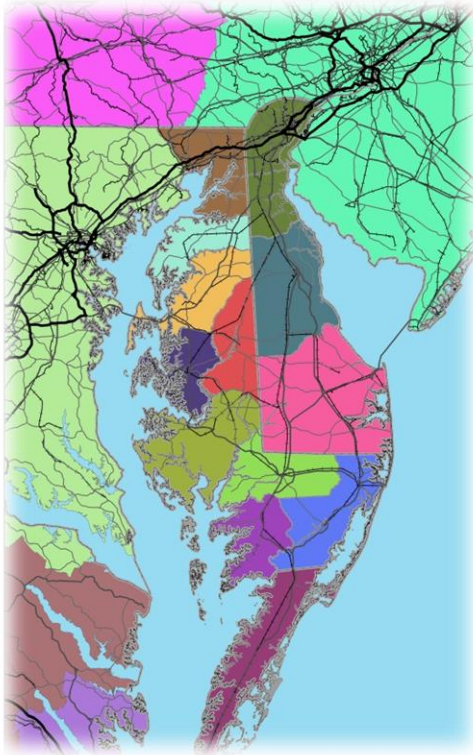


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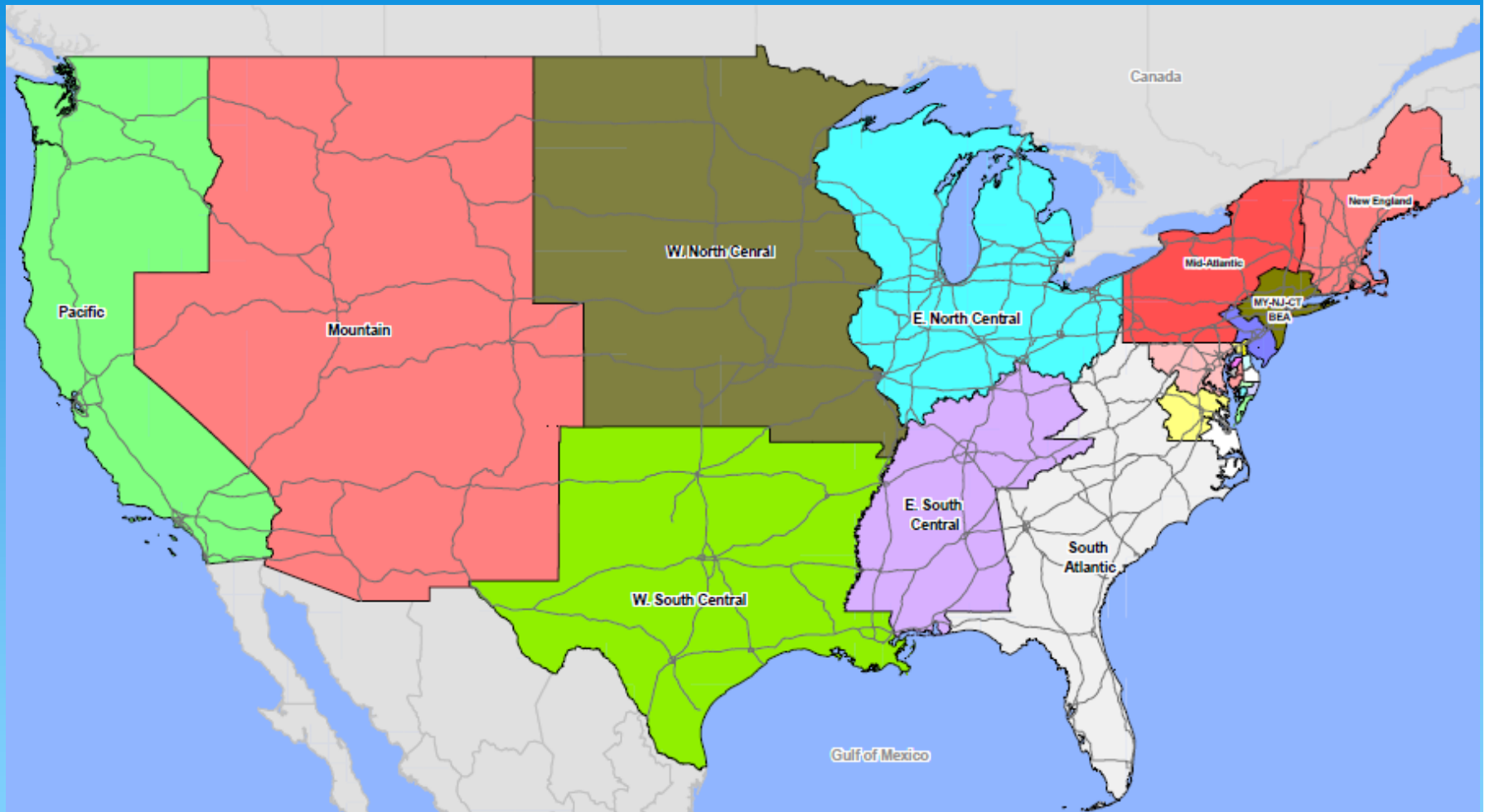
Data Collection

Commodity Flow Data

Transearch	FAF
County-level data	Larger regions



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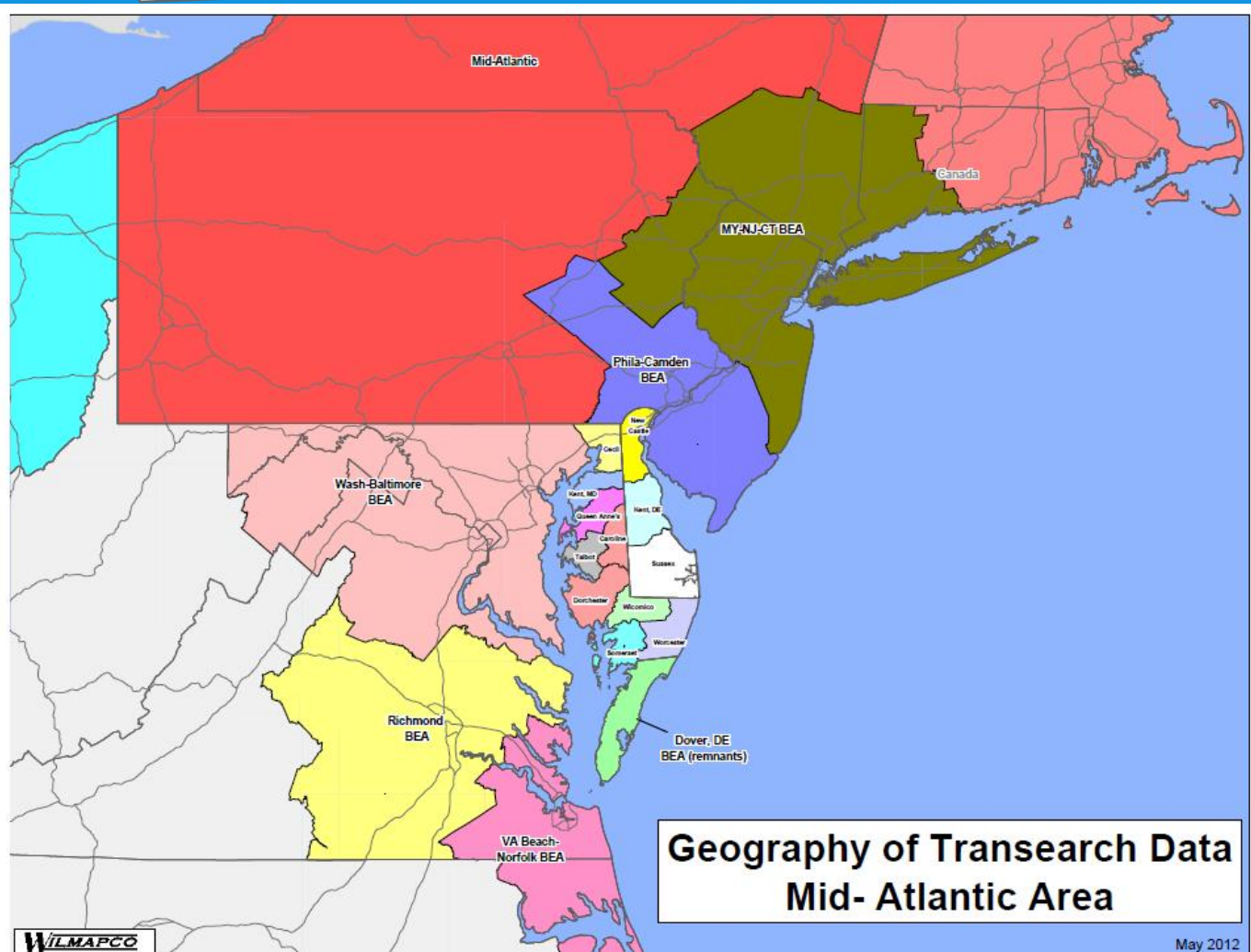


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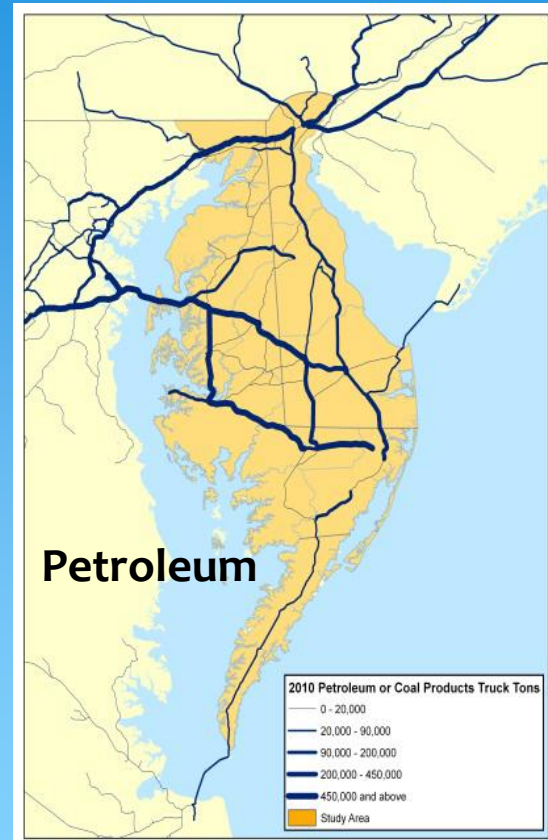
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Delmarva's Major Industries Have Different Freight Flow Characteristics



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CUBE Cargo Modeling



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CUBE Cargo Modeling

A permanent multi-modal model. Using detailed commodity flow data along with a three-level modeling approach (National, Regional and Local), we can capture the overall performance of the freight system and its future constraints.

❖ Travel Demand Model

Datasets

- DVRPC
- BMC
- WASHCOG
- South Jersey TPO
- Hampton Roads
- Richmond
- DelDOT Peninsula Model



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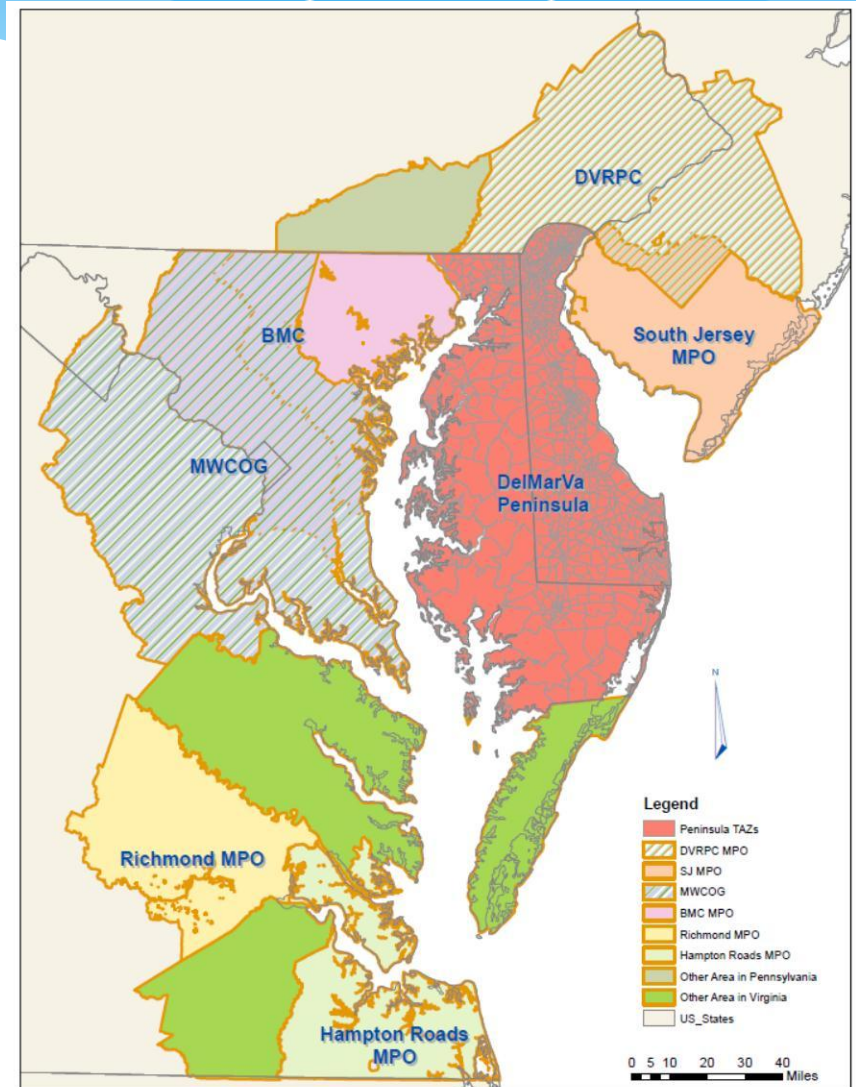
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Adjacent MPOs

- ❖ Delmarva Peninsula Model, plus...
- ❖ 6 adjacent MPO's and corresponding travel demand model areas
- ❖ Some MPO model overlap
- ❖ Additional counties added to span MPO model gaps in PA and VA



Freight TAZs

❖ Coarse and Fine detail levels

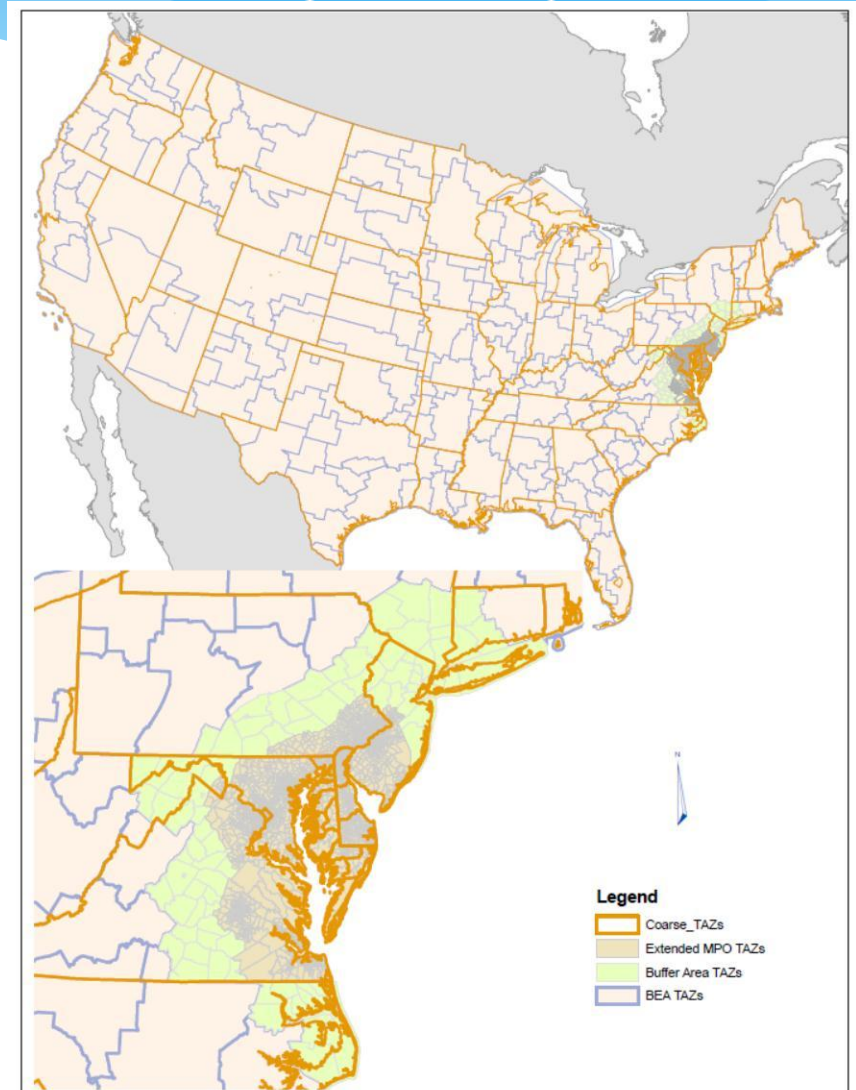
- *First modeled nationwide at the coarse level, then distributed to Fine TAZs*
- *Fine TAZs provide “cost” for coarse zone modeling*

❖ Fine TAZs :

- *Delmarva Peninsula: Peninsula TAZs*
- *Adjacent MPOs: census tract*
- *Buffer Area: county*
- *Out of Buffer Area: BEA Economic Area*

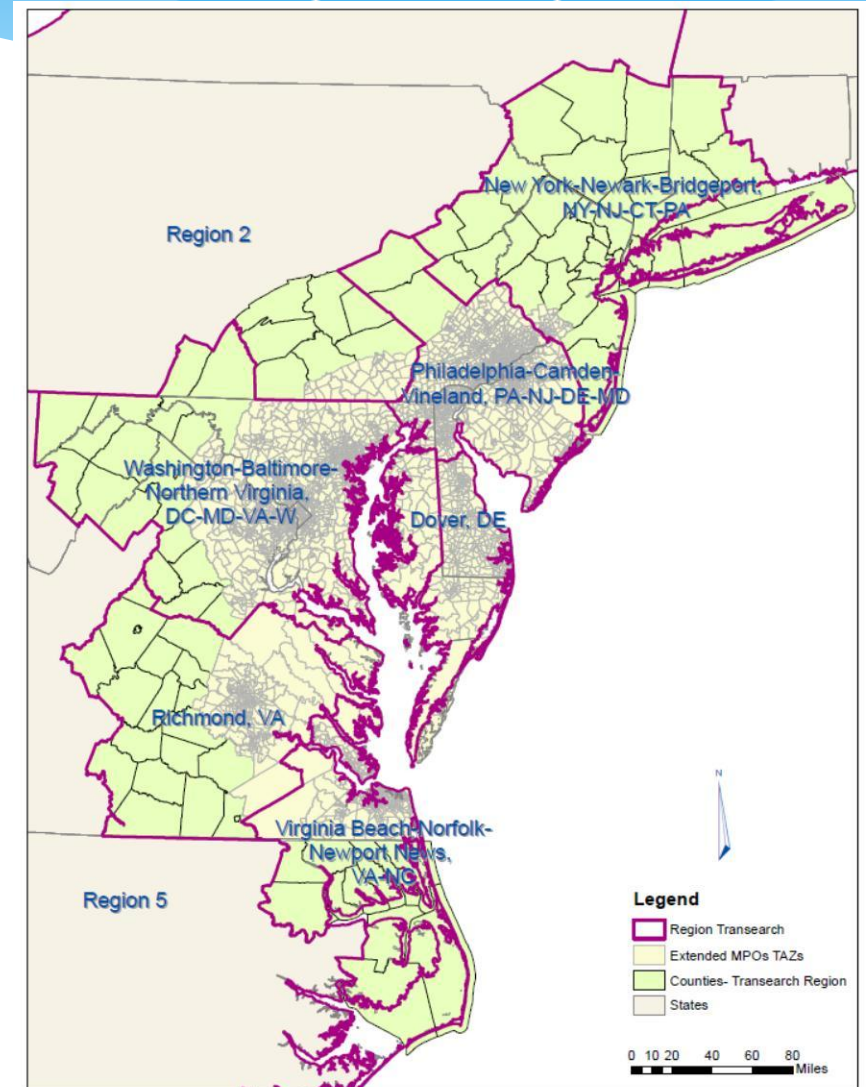
❖ Coarse TAZs:

- *Delmarva Peninsula: County*
- *Out of Peninsula: State*



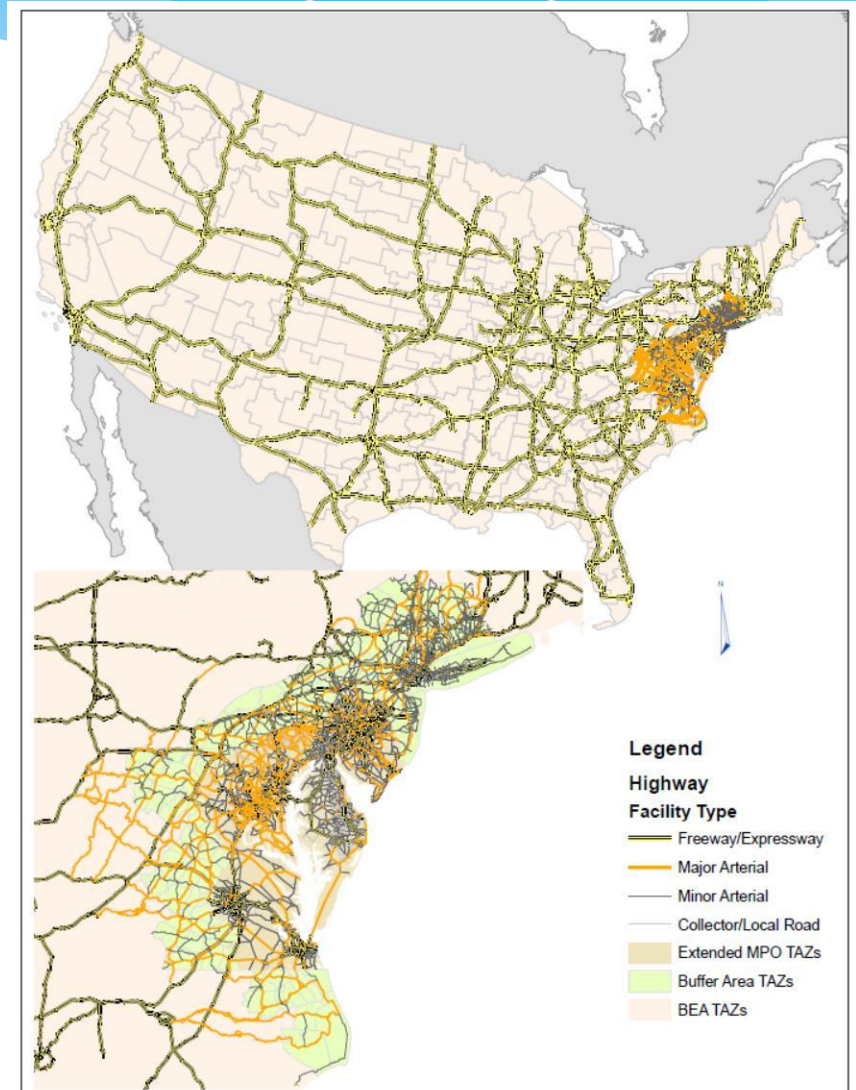
Buffer Area

- ❖ Based on IHS Transearch Regions
- ❖ 6 BEA's
- ❖ Additional counties added to span gaps between:
 - *Washington-Baltimore-Northern Virginia*
 - *Philadelphia-Camden-Vineland*



Highway Network

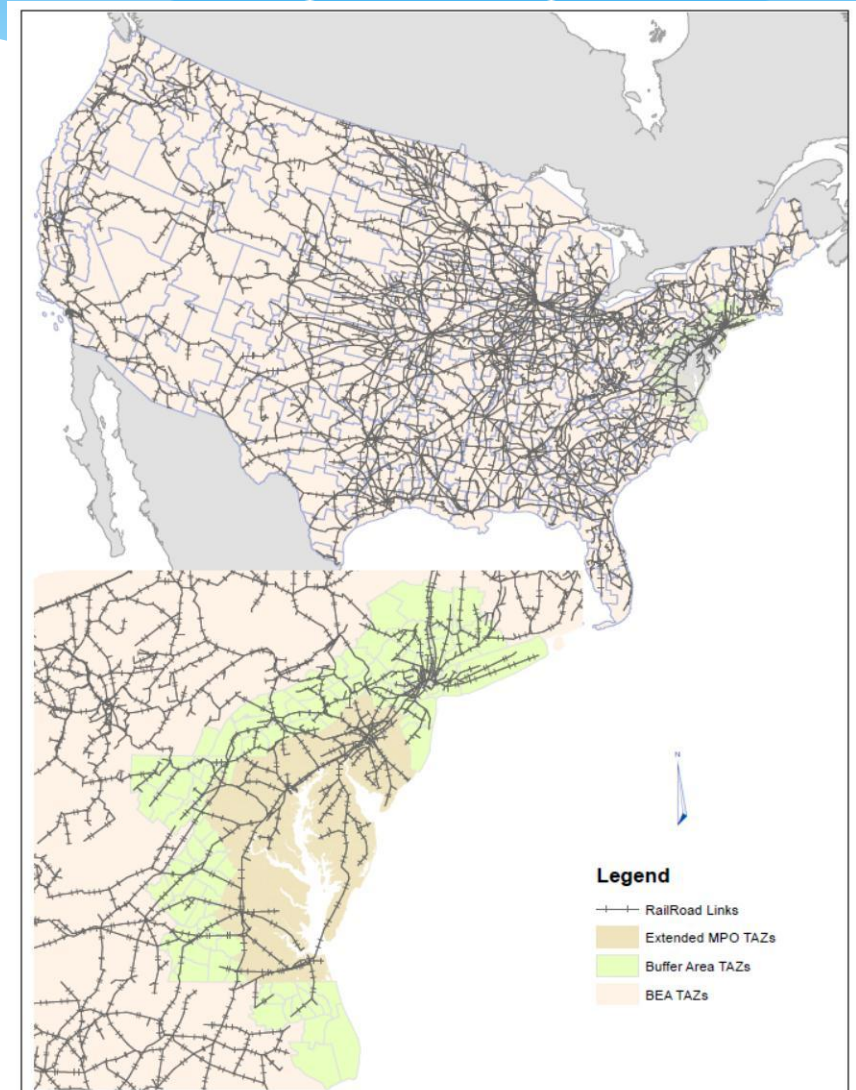
- ❖ 3 highway detail levels
- ❖ Delmarva Peninsula:
 - *passenger car model highway network*
- ❖ Adjacent MPO and Buffer Areas:
 - *Interstate, US, and state highways*
 - *Necessary roads for network connection*
- ❖ Remaining Model Area:
 - *Interstate Highways*
- ❖ Source:
 - *National Highway Planning Network (NHPN)*



Rail Network

❖ Source:

- *Center for Transportation Analysis*



Analysis and Stakeholder Research



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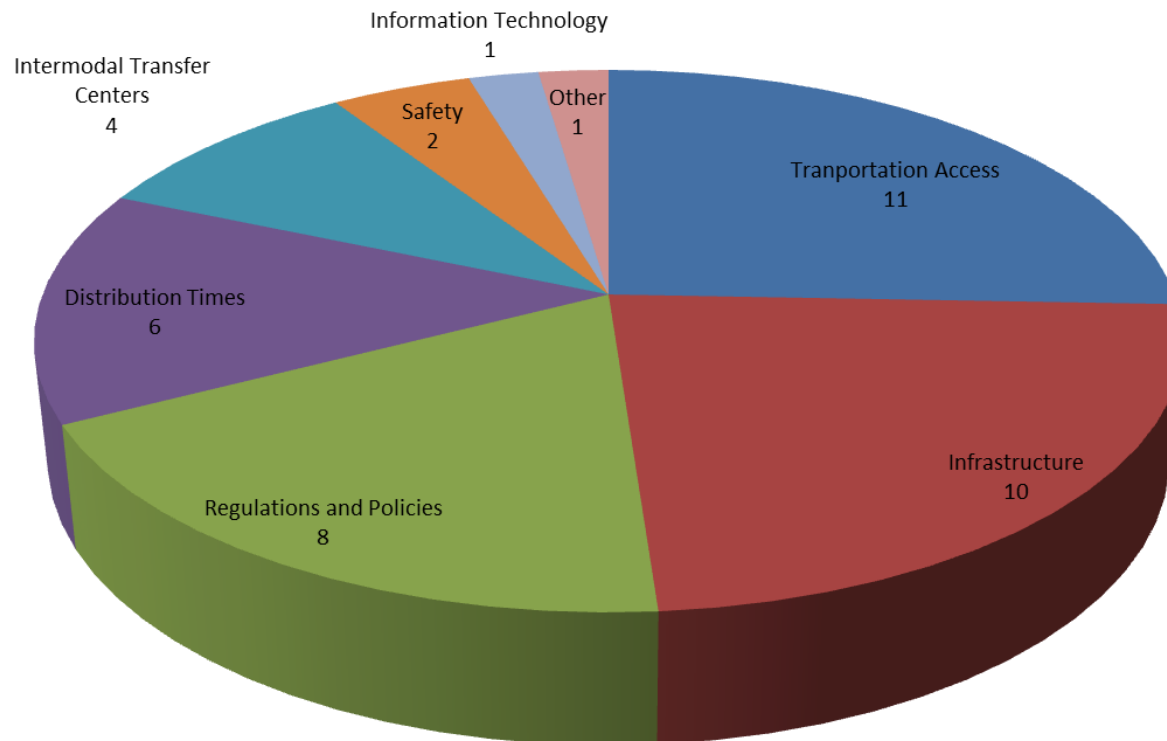
Status Updates

Stakeholder Outreach

- ❖ Online Survey: Specific Problems / Areas of Concern



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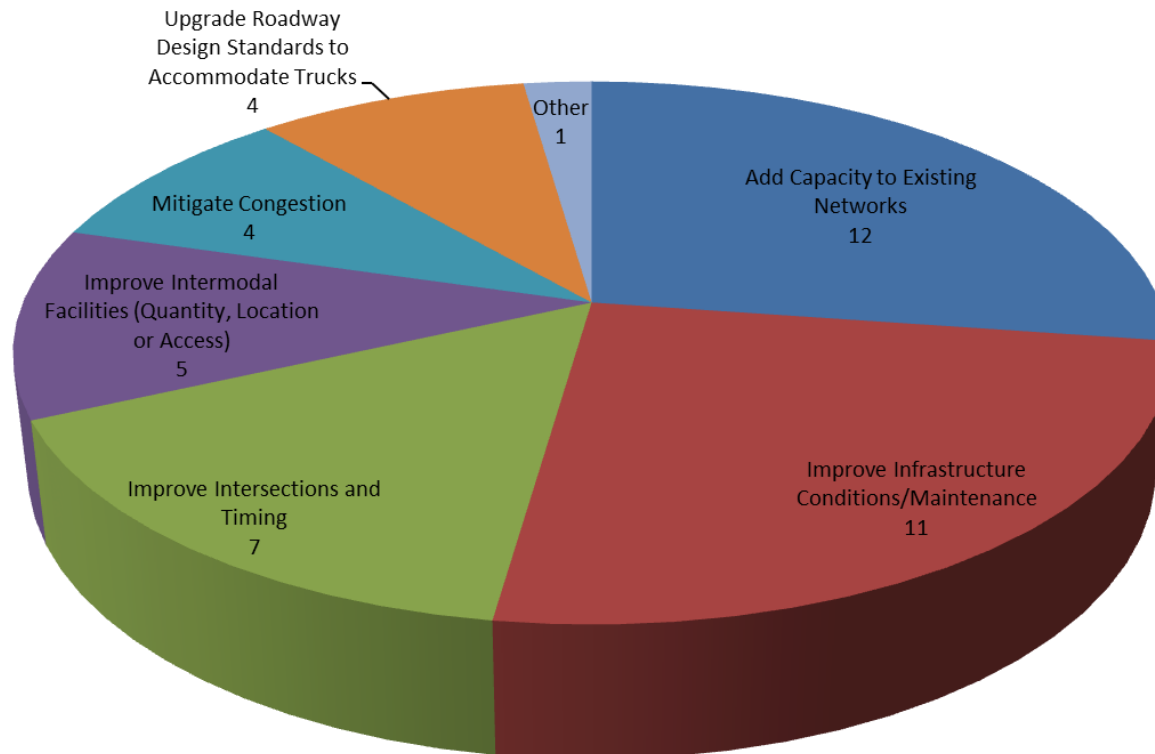
Status Updates

Stakeholder Outreach

❖ Online Survey: Key Infrastructure Related Improvements



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Status Updates

Stakeholder Outreach

- ❖ Online Survey: General Comments
 - 36% Miscellaneous Infrastructure Improvements
 - 25% Truck Restrictions (height, weight, width, hazmat)
 - 17% Northeast Corridor Constraints
 - 11% Rail Restrictions (height, weight, width)
 - 11% Short Line Railroad Support



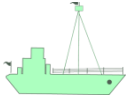
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Areas of Concern



Rail

- NEC / Chesapeake Connector
- Delmarva Secondary / Indian River Coal
- 75 Rail Car Capacity
- Cape Charles Rail Car Float



Ports

- Post-Panamax
- New Markets



Inland Waterways

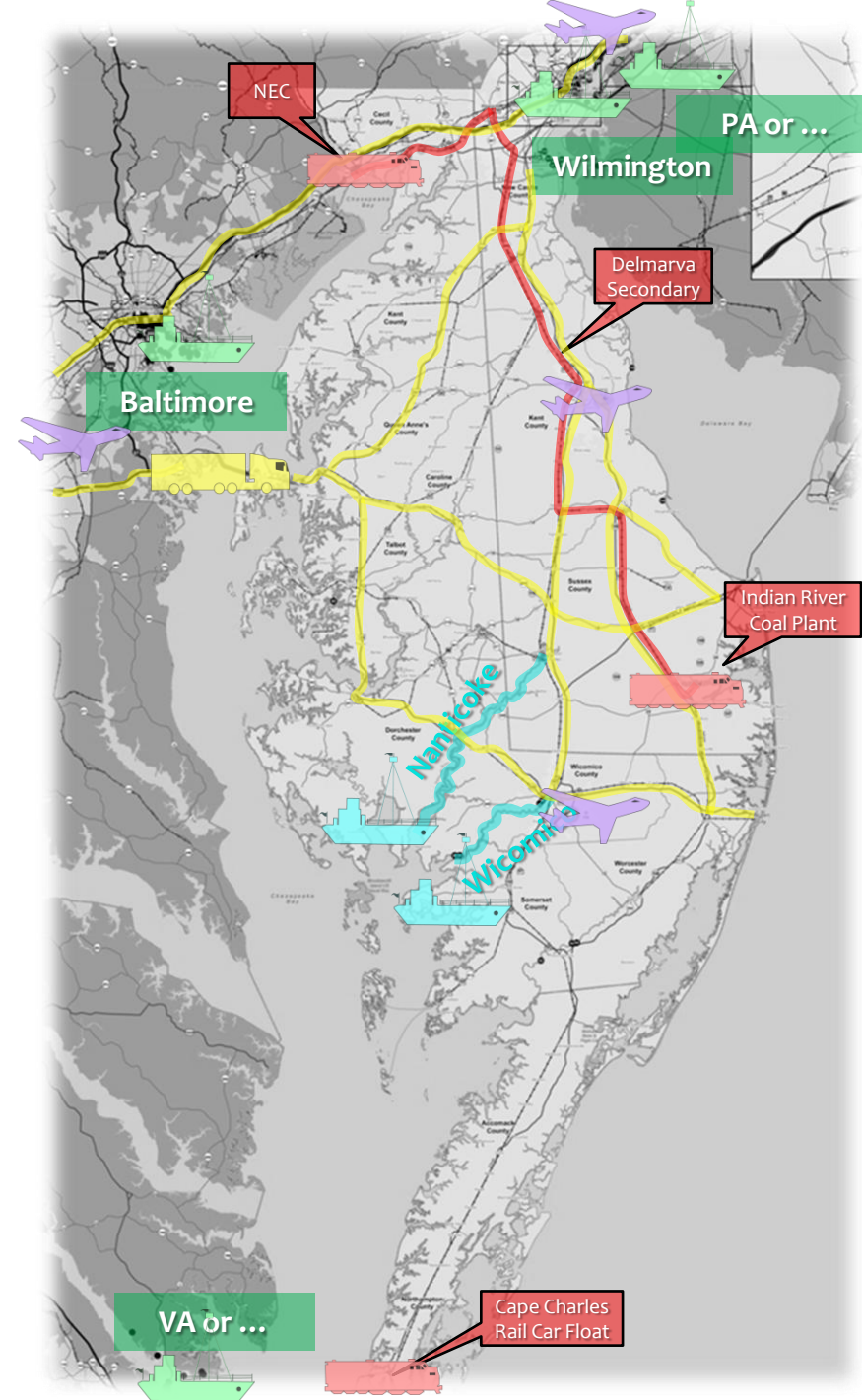
- Nanticoke & Wicomico Rivers
- Spoil Sites for Dredged Materials

Motor Freight

- Seasonal / Tourist-Based Congestion
- Secondary Roads / Bridges
- Fuel Taxes / Toll Rates / Weight Limits
- Parking & Rest Areas



Air Freight



Areas of Opportunity



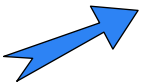
Growth & Industry

- Cecil County
- New Castle County
- Sussex County
- Wicomico County



Site-Specific Issues

- PBF Energy Rail Expansion
- Dogfish Head Brewery Expansion
- Seaford Multimodal Connectivity
- Salisbury Multimodal Connectivity
- NASA Wallops Flight Facility

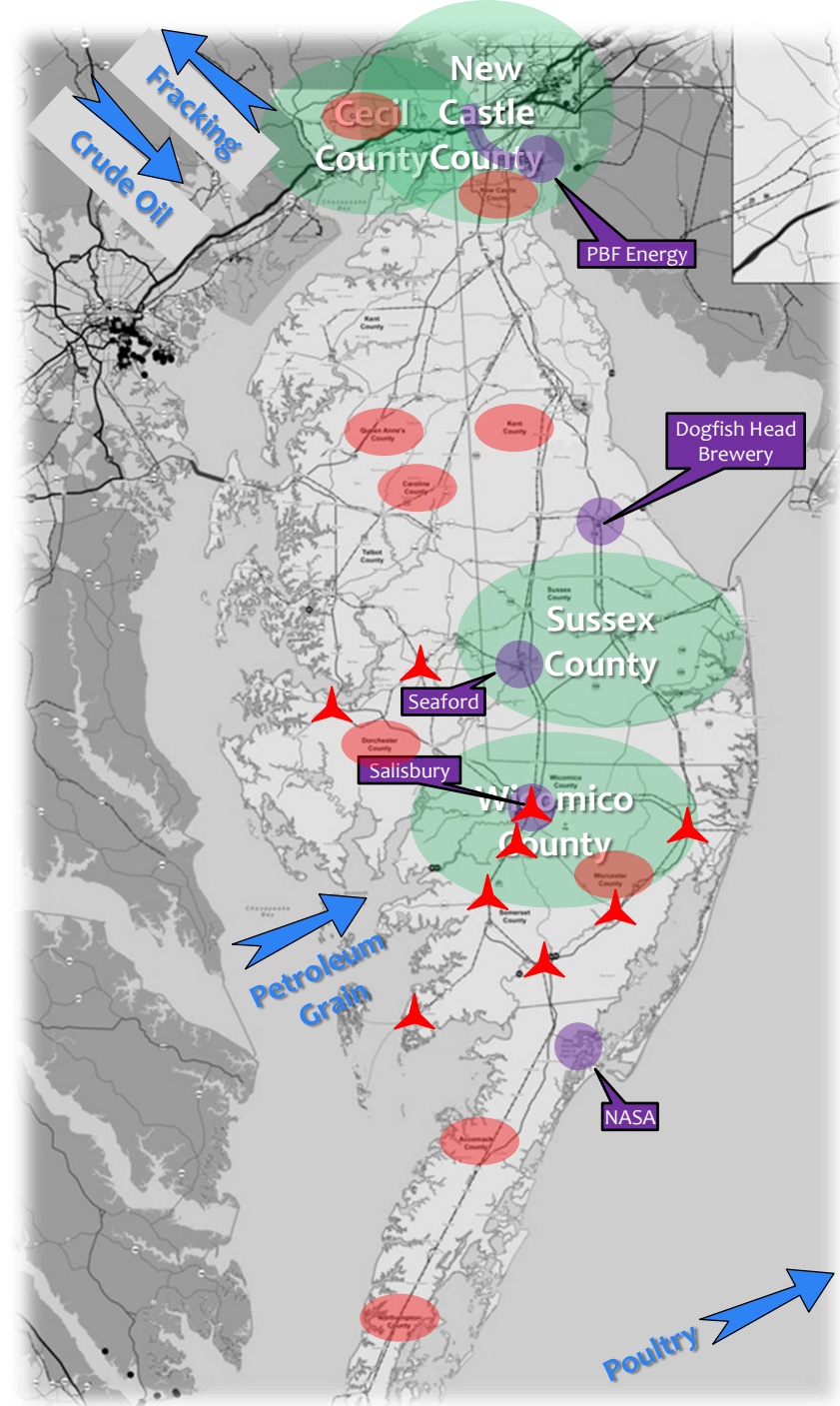


Import-Export

- Fracking Materials to Marcellus Shale
- Crude Oil from Canada or Midwest
- Grain from Midwest
- Frozen Poultry to Russia



Enterprise Zones / Other Incentives



Scenario Development



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Scenario Planning

Performance Based Approach

- ❖ Include performance measures to guide freight-related transportation decisions
- ❖ Retain consistency w/ the National Freight Strategic Plan
- ❖ Tie each measure to each goal to indicate how well the system is achieving that goal
- ❖ Reflect measures of conditions of infrastructure and of service performance
- ❖ Reflect outcomes that are directly important to system users and the general public
- ❖ Avoid measures that are not of direct importance to users or the general public

Scenario Planning

Economic Evaluation

- ❖ Qualitative screening relative to scenario-specific issues
 - Review of low-medium-high levels of impact
 - Review of global factors or unknowns vs. potential for “missed” opportunities
- ❖ Address industry-specific impacts of changes in:
 - Freight costs, availability, reliability, and time
 - Related impacts on jobs and payrolls
 - Secondary / multiplier effects on jobs and payrolls
 - Secondary / multiplier effects on fiscal and tax impacts
- ❖ Add'l research: cost of goods movement as a % of overall costs
- ❖ Add'l research: industry-specific elasticities (e.g., tourist impact vs. congestion)

Scenario Planning

Cube Cargo Evaluation

- ❖ Potential Measures of Effectiveness include:
 - Travel Time to Market by Mode
 - Level of Service
 - Delay
 - Transportation Cost by commodity and mode
 - Emissions
 - Truck Volumes on Roadways
 - Freight Demand by Mode
- ❖ Add'l research: Cost assumptions for freight movement by mode

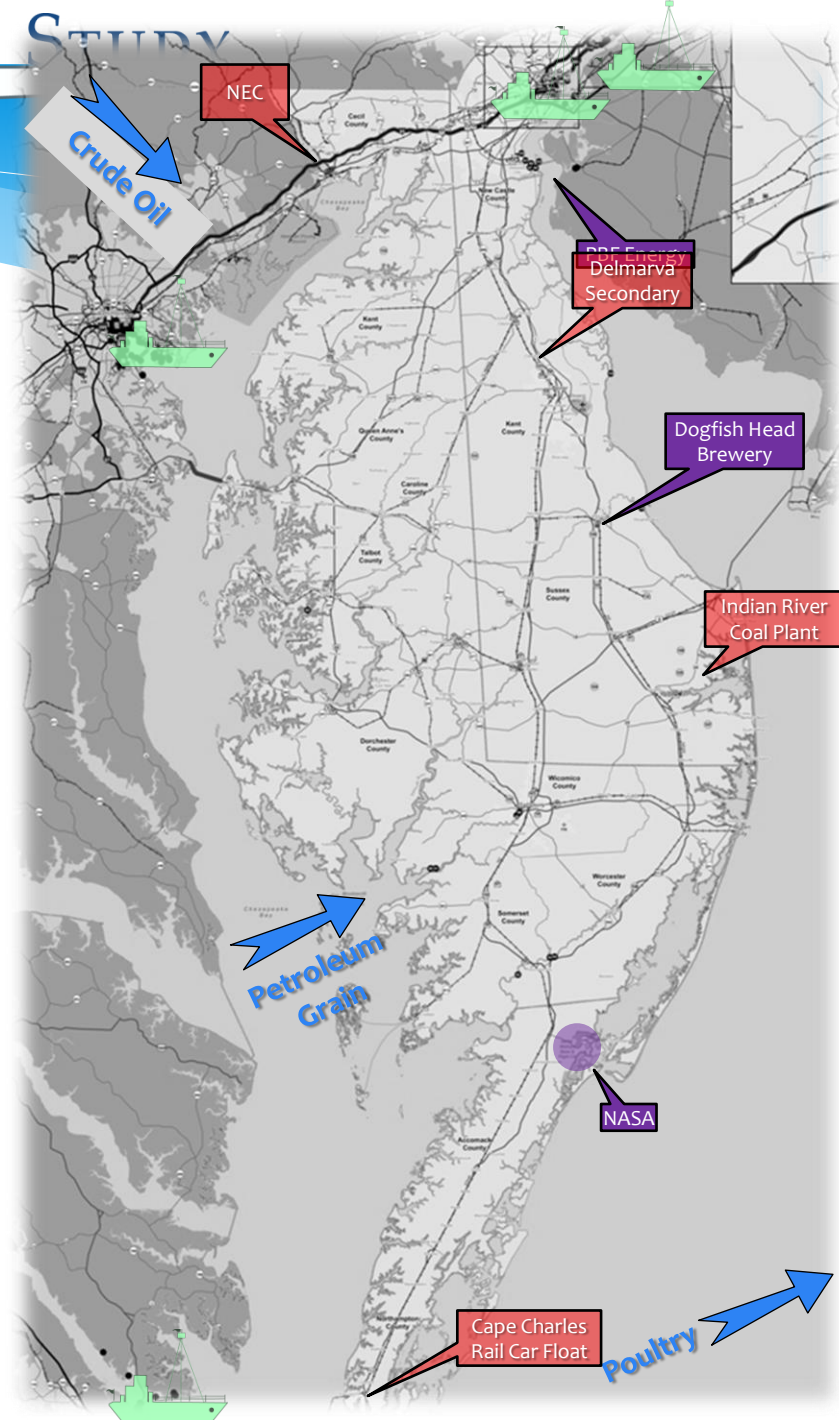
Potential Scenarios: Two Types

Factors to React to...

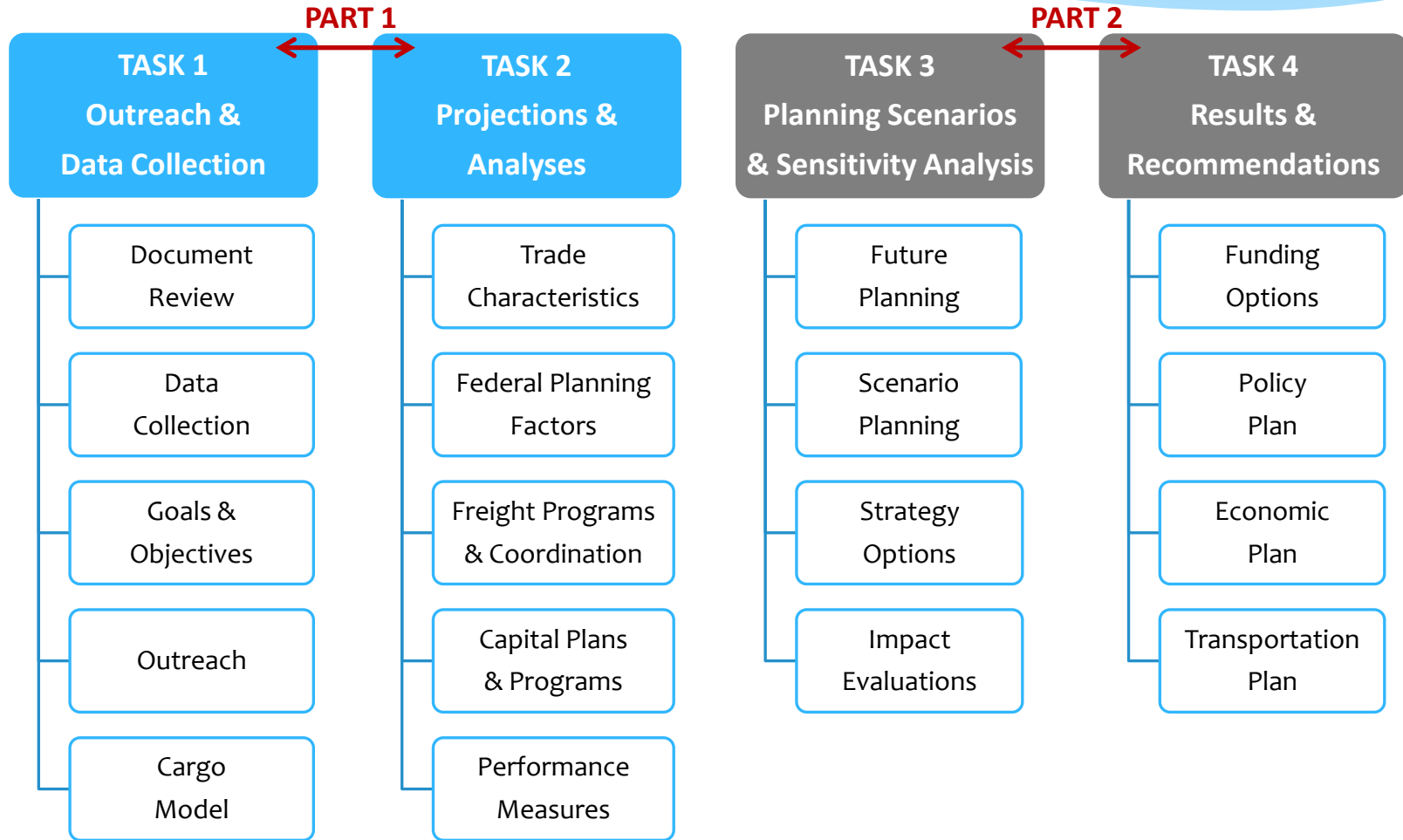
Rail Service Loss
Port Expansion or Market Shifts
Post-Panamax Impacts
Inland Waterway Loss
Truck Transportation Costs
Energy Market Trends (e.g., Coal, Oil)
Fulfillment Services Trends

Factors to Influence...

Rail Service Efficiencies
Intermodal Infrastructure
Port Access Enhancements
Infrastructure Preservation
Truck Transportation Policies
Freight Network Connectivity
Land Use Preservation



Next Steps



Other Steps

- **Establish Regional Advisory Group**

MAP 21 (Section 1117): Establish a state freight advisory committee consisting of a representative cross-section of public and private sector freight stakeholders, including representatives of ports, shippers, carriers, freight-related associations, the freight industry workforce, the transportation department of the state, and local governments.

- ❖ Advise the State on freight-related priorities, issues, projects, and funding needs;
- ❖ Serve as a forum for discussion of State decisions affecting freight transportation;
- ❖ Communicate and coordinate regional priorities with other organizations;
- ❖ Promote the sharing of information between the private and public sectors on freight issues
- ❖ Participate in the development of the State's Freight Plan.



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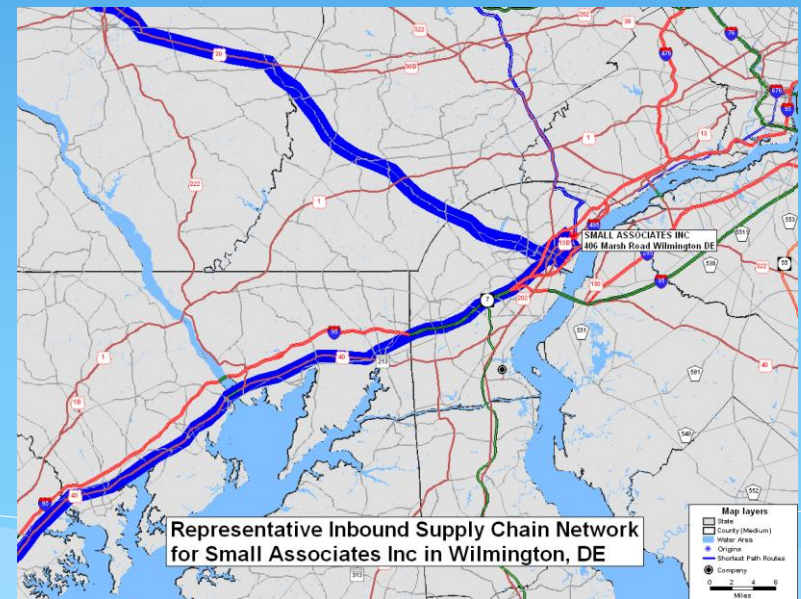
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Other Steps

- Delaware Chemical Supply Chain Analysis

Produce detailed supply flows into Delaware's chemical supply chains and emerging chemical industry market trends or logistics practices to identify potential opportunities for economic development or changes in the State's freight system that could strengthen supply chain performance.

Status: Pending approval from WILMAPCO Council in May



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Questions???

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