Purpose

The overall purpose of the *Delmarva Freight Plan* is to provide relevant information that will assist the state DOTs, area MPOs, and other stakeholders in making well-informed decisions on freight infrastructure investments and freight-related policies. To accomplish this task, the study aimed to:

- Better understand existing and anticipated freight flows, issues, and concerns within the project area and to/from the surrounding areas
- Comprehensively evaluate the multimodal/intermodal freight transportation system while encompassing commodity flows via truck, rail, water, air, and pipeline
- Explore and analyze future freight-planning scenarios through year 2040 with an emphasis on a performance-driven approach
- Identify relevant infrastructure, policies and regulation changes or other investments that seek to enhance the safety, performance, and efficiency of freight travel in the region, as well as related environmental impacts and economic opportunities
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 are **highly recommended** to have a freight plan which can improve their ability to meet National Freight Policy goals & objectives.

- Not a requirement, but in order for some projects to be eligible for fed $, they **must come from a freight plan**!
Key Functions of Study

- Collect Most Recent Commodity Flow Data:
  - Transearch, FAF3,
  - STBWaybill
- Conduct Outreach (Agencies, Industries & Shippers)
- Develop CUBE Cargo Model
- Generate Current/Future Freight Forecasts for Multiple Modes (Truck, Rail, Water, Pipeline)
- Analyze Future Freight Scenarios
The Plan will be:

- Multi-state / multi-MPO freight plan
- Multimodal freight transportation infrastructure
- Federally-compliant under MAP-21

Performance-oriented plan

- Freight connectivity, mobility, and accessibility
- Safety and security
- Sustainability and environmental stewardship
- Economic vitality
- System management, operations, and maintenance
Plan Highlights

Critical background information or unique components that have been woven throughout this plan include:

**Federal Freight Planning Compliance**: The Moving Ahead for Progress in the 21st Century act (MAP-21) was signed into law by the President on July 6, 2012. MAP-21 sections 1115 through 1118 outline new details for a National Freight Policy, the prioritization of projects to improve freight movements, the establishment of state freight advisory committees, and related requirements for state freight plans. The Delmarva Freight Plan fulfills these requirements while also incorporating related interim guidance from the U.S. Department of Transportation (USDOT), as well as established freight planning practices from the Federal Highway Administration (FHWA).

MAP-21 Section 1118 requires that a State Freight Plan developed pursuant to Section 1118 include, at a minimum, the following elements:

- An identification of significant freight system trends, needs, and issues with respect to the state;
- A description of the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the state;
- A description of how the plan will improve the ability of the state to meet the national freight goals established under section 167 of title 23, United States Code;
- Evidence of consideration of innovative technologies and operational strategies, including intelligent transportation systems, that improve the safety and efficiency of freight movement;
- A description of improvements that may be required to reduce or impede roadway deterioration in the case of routes on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment, and timber vehicles) is projected to substantially deteriorate the condition of roadways; and
- An inventory of facilities with freight mobility issues, such as truck bottlenecks, within the state, and a description of the strategies the state is employing to address those freight mobility issues.
Chapters:

Chapter 1: Introduction
Chapter 2: Existing Economic Context
Chapter 3: Existing Commodity Flows
Chapter 4: Existing Transportation System
Chapter 5: Existing Freight Programs and Coordination
Chapter 6: Freight Trends, Needs and Issues
Chapter 7: Future Freight Planning Scenarios
Chapter 8: Recommended Action Plan
Chapter 9: Summary & Conclusion
Chapter 10: Appendix
Overall Goal: To answer ongoing “What if” Scenarios

“WHAT IF” Examples:

... truck volumes and maintenance needs increased?
... NEC corridor restrictions continue?
... coal demand ceased?
... barge travel was restricted?
... higher freight volumes conflicted with other users?

“WHAT IF” Examples:

... Post-Panamax trends directly impact the peninsula?
... the Chesapeake Connector was completed?
... a new intermodal facility was constructed?
... higher freight volumes conflicted with other users?
2.0 Economic Context

Latest Draft 10/9/2013

- Summarizes economic insights from previous meetings
- Presents population and employment forecasts through 2040
- Locates over 430 major freight generating industry/business sites (Exhibit 2.8)
- Ties global economic perspectives with potential relevance for the peninsula
Despite Economy, Freight Generating Industries Growing

<table>
<thead>
<tr>
<th>Industry</th>
<th>Employment</th>
<th>Output</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>of Jobs</td>
<td>Change</td>
<td>Constant 2000</td>
<td>Change</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dollars</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2004</td>
<td>2014</td>
<td>#</td>
<td>%</td>
<td>2004</td>
<td>2014</td>
</tr>
<tr>
<td>Transportation and Warehousing</td>
<td>4,250</td>
<td>4,756</td>
<td>506</td>
<td>11.9%</td>
<td>619</td>
<td>889</td>
</tr>
<tr>
<td>Warehousing and Storage</td>
<td>556</td>
<td>694</td>
<td>138</td>
<td>24.8%</td>
<td>359</td>
<td>565</td>
</tr>
<tr>
<td>Transit and Ground Passenger Transportation</td>
<td>385</td>
<td>476</td>
<td>91</td>
<td>23.6%</td>
<td>309</td>
<td>406</td>
</tr>
<tr>
<td>Scenic and Sightseeing Transportation and Support</td>
<td>112</td>
<td>123</td>
<td>11</td>
<td>9.8%</td>
<td>107</td>
<td>152</td>
</tr>
<tr>
<td>Trucking Transportation, Couriers, Messengers</td>
<td>135</td>
<td>148</td>
<td>13</td>
<td>9.6%</td>
<td>224</td>
<td>317</td>
</tr>
<tr>
<td>Air Transportation</td>
<td>515</td>
<td>560</td>
<td>45</td>
<td>8.7%</td>
<td>130</td>
<td>213</td>
</tr>
<tr>
<td>Water Transportation</td>
<td>57</td>
<td>58</td>
<td>1</td>
<td>1.8%</td>
<td>224</td>
<td>269</td>
</tr>
<tr>
<td>Rail Transportation</td>
<td>224</td>
<td>215</td>
<td>-9</td>
<td>-4.0%</td>
<td>432</td>
<td>599</td>
</tr>
</tbody>
</table>

Source: Transportation Industry, Department of Labor, 2007
Trucking will lead the way, increasing faster than automobile growth.

Exhibit 2.13 – Truck Revenue Forecasts (2011-2023)

<table>
<thead>
<tr>
<th>Category</th>
<th>Billions of Dollars</th>
<th>Average Annual Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truckload</td>
<td>280.2</td>
<td>382.9</td>
</tr>
<tr>
<td>LTL</td>
<td>46.9</td>
<td>68.2</td>
</tr>
<tr>
<td>Private</td>
<td>276.8</td>
<td>355.6</td>
</tr>
<tr>
<td>Total</td>
<td>603.9</td>
<td>806.7</td>
</tr>
</tbody>
</table>

Source: U.S. Freight Transportation Forecast to 2023, ATA, 2012
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
Areas of Concern (from Outreach):

**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 (from Outreach):

Growth & Industry
- Cecil County
- New Castle County
- Sussex County
- Wicomico County
- DAFB Civil Air Terminal

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
Data Collection

Transearch (IHS Global Insight)
FAF 2, FAF 3
STB Waybill (Rail)
**Data Collection**

**Commodity Flow Data**

<table>
<thead>
<tr>
<th>Transearch</th>
<th>FAF</th>
</tr>
</thead>
<tbody>
<tr>
<td>County-level data</td>
<td>Larger regions</td>
</tr>
</tbody>
</table>
Model Boundaries

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

- Based on IHS Transearch Regions

- 6 BEA’s

- Additional counties added to span gaps between:
  - Washington-Baltimore-Northern Virginia
  - Philadelphia-Camden-Vineland
Model Boundaries

- Based on IHS Transearch Regions
- 6 BEA’s
- Additional counties added to span gaps between:
  - Washington-Baltimore-Northern Virginia
  - Philadelphia-Camden-Vineland
Delmarva’s Major Industries Have Different Freight Flow Characteristics:

- **Food**
- **Petroleum**
3.0 Existing Commodity Flows

*Pending Draft*

- Will summarize overall commodity data, pending resolution of outstanding issues
  - Resolved: Transearch tropical fruit coding
  - Resolved: Transearch routing & FIPS code gaps
  - Resolved: Transearch vs. FAF differences
  - Resolved: DE waybill data incorporation
  - Resolved: Transearch missing regions data
  - Resolved: Transearch average distances
- Pending: MD waybill data
- Pending: Missing intra-county flows
- Pending: Transearch model updates
4.0 Freight Transportation System

**Latest Draft 10/9/2013**

- Inventories modal assets for motor freight, rail, water, air, and pipeline transport
- Summarizes current travel demand model (TDM) based volume and LOS data
- Maps key freight transfer sites (rail yards, ports, airports, intermodal sites, etc.)
- Identifies key freight corridors, local freight zones, and gateways
Freight Programs & Coordination

*Pending Draft*

- Addresses freight programs, policies, and institutions; capital plans and programs; funding; and planned projects and developments
- Incorporates previously-established future “no-build” project assumptions
- Baseline includes currently funded TIP/RTP projects
Pending Draft

- Addresses stakeholder insights; focus areas; future trends & opportunities; future issues & strategies; summary of freight needs.
- Incorporates previously-established areas of concern/opportunity maps
Factors to React to . . .
- Rail Service Loss
- Port Expansion or Market Shifts
- Post-Panamax Impacts
- Inland Waterway Loss
- Truck Transportation Costs
- Energy Market Trends (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
**Freight Planning Scenarios**

**Pending Draft**

- Incorporates previously-developed scenarios w/ refinements ongoing
- Incorporates performance measure concepts w/ refinements ongoing
- Incorporates Cube Cargo modeling
- Identifies scenario planning insights
- Will help to inform remaining Chapters 8-9...the Recommended Action Plan and Freight Plan Summary/Conclusion
Freight Planning Scenarios

Possible future constraints, such as:

- Decreased rail access to Peninsula
- Less capacity due to less dredging
- Car float operations reduced
- Increased reliance on truck mode
Freight Planning Scenarios

Possible multi-modal improvements, such as:

- Expansion/Improve Rail facilities
  - Chesapeake Connector
- Weight/speed improvements
- Increased carfloat capacity
- Increased intermodal facilities in key locations along Peninsula
## Performance Measures

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Measurement Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional Intermodal Connectivity</td>
<td>Travel Time to select cities (Philadelphia, Harrisburg, Baltimore, Washington D.C., Hampton Roads)</td>
</tr>
<tr>
<td>Local Intermodal Connectivity</td>
<td>Population near select distribution centers (within 15-30-45 minutes of Amazon, WalMart, FedEx, UPS, Sysco)</td>
</tr>
<tr>
<td></td>
<td>Employment near select freight transfer hubs (within 15-30-45 minutes of Port of Wilmington, NS Newark Yard, NS Jello Yard, NS Harrington Yard, NS Seafood Yard, Perdue Farms)</td>
</tr>
<tr>
<td>Roadway Congestion</td>
<td>Truck VMT @ LOS A-C, D, E, F</td>
</tr>
<tr>
<td></td>
<td>Truck VHT @ LOS A-C, D, E, F</td>
</tr>
<tr>
<td>Modal Split</td>
<td>Freight Tonnage by Mode</td>
</tr>
</tbody>
</table>
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
Specific Details to be given on Identified key freight connections
**US 50 “Ocean City” Freight Corridor**

**Primary Roadways:**
- US 50
- MD 90

**Regional Freight Hubs:**
- Central/South Central Delmarva Peninsula
- Baltimore/Washington metro

**Project Area Freight Hubs:**
- Chestertown-Easton-Cambridge-Salisbury-Berlin-Ocean City, MD
**I-95 “Metro” Freight Corridor**

**Primary Roadways:**
- I-95
- I-295
- I-495
- US 40

**Regional Freight Hubs:**
- Northern Delmarva Peninsula
- Baltimore/Washington metro
- Philadelphia metro
- U.S. Eastern Seaboard (Maine to Florida)

**Project Area Freight Hubs:**
- Elkton, Cecil County, MD;
- Newark-Wilmington-Edgemoor-Claymont-New Castle-Delaware City, DE
- Deepwater, NJ (DuPont)
### US 301 “Bay” Freight Corridor

**Primary Roadways:**
- US 301
- US 50

**Regional Freight Hubs:**
- Northern/Northwestern Delmarva Peninsula
- Baltimore/Washington metro
- Richmond metro
- U.S. south Atlantic states

**Project Area Freight Hubs:**
- Wilmington-New Castle-Newark-Middletown, DE
- Massey-Millington-Sudlersville-Centreville Chestertown, MD

![Map of the US 301 “Bay” Freight Corridor](image-url)
**DE 1/US 13/US 113 “Coastal” Freight Corridor**

**Primary Roadways:**
- DE 1
- US 13
- US 113
- MD 528

**Regional Freight Hubs**
- Eastern/Coastal/Southern Delmarva Peninsula
- Philadelphia metro;
- Hampton Roads metro;
- Extended areas via linkage w/ the I-95 Corridor

**Project Area Freight Hubs**
- Wilmington-New Castle-Delaware City-Townsend-Smyrna-Clayton-Dover, DE
- **Continued via US 13:** Harrington-Seaford-Delmar, DE; Salisbury-Princess Anne-Pocomoke City, MD; Accomack-Northampton Counties, VA
- **Continued via US 113:** Milford-Ellendale-Georgetown-Millsboro-Dagsboro-Frankford-Selbyville, DE; Berlin-Snow Hill-Pocomoke City, MD
- **Continued via DE 1/MD 528:** Milford-Lewes Beach-Rehoboth Beach-Dewey Beach-Bethany Beach-Fenwick Island, DE; Ocean City, MD
**MD/DE 404 “Lewes” Freight Corridor**

**Primary Roadways:**
- MD 404
- DE 404
- US 9

**Regional Freight Hubs**
- Central Delmarva Peninsula
- Baltimore/Washington metro (via connection to US 50/301)
- Atlantic City/Jersey Shore area (via connection to ferry service)

**Project Area Freight Hubs**
- Wye Mills-Queen Anne-Denton, MD
- Bridgeville-Laurel-Georgetown-Lewes, DE
**US 202/DE 41 “Piedmont” Freight Corridor**

- **Primary Roadways:**
  - US 202
  - DE/PA 41
  - DE/PA 52
  - Pennsylvania linkages to I-76, US 30, and US 322

- **Regional Freight Hubs:**
  - Northern Delmarva Peninsula
  - Pittsburgh metro (via I-76, US 30)
  - U.S. Midwest markets (via linkage to I-70, I-80)

- **Project Area Freight Hubs:**
  - Hockessin-Elsmere-Newport-Stanton-Talleyville, DE
  - Newark-Wilmington, DE and extended areas via connection to other freight corridors

---

**Inset Map:**
- Icons and markers indicating key locations and connections.
Next Steps

- Finalize commodity flow data
- Complete and calibrate Cube Cargo
- Run and fine-tune scenarios
- Summarize scenario results and insights
- Develop recommended action plan
- Finalize overall freight plan
 Remaining Schedule

**DECEMBER-JANUARY**: Ongoing model prep; submittal of Final Chapter 5 (programs, institutions and funding) and 6 (trends, needs and issues)

**JANUARY-FEBRUARY**: Ongoing model prep and prelim calibration; submittal of Draft Chapter 7 (performance measures, scenario prep).

**PAC MEETING #8** in late January/early February to discuss model status, draft to-date, and final scenario prep

**FEBRUARY-MARCH**: Scenario modeling and results; development of preliminary recommendations

**PAC MEETING #9** in late March to review scenario results and recommendations

**APRIL-???:** We will finalize the overall plan upon receipt of comments on preferred scenarios/recommendations following PAC Meeting #9.