Introduction

- Multimodal / multi-jurisdictional freight plan for the Delmarva Peninsula
- MAP-21 / performance-oriented

14-county area
Agenda

- Freight Background & Context
- Freight Scenario Planning
- Freight Planning Implications
- Next Steps / Questions
Freight Background & Context
**Freight & Economic Drivers**

**Population**
- 2010: 1.4M
- 2020: (1.4M + 29%)
- 2030: 1.8M
- 2040: (1.8M + 29%)

**Households**
- 32% MD
- 65% DE
- 3% VA

**Freight Generators**
- 65% DE
- 32% MD
- 3% VA
Commodity Data

Transearch
(county-level source; truck/water flows; commodity details)

FAF3
(air/pipeline flows; import/export; growth comparisons)

STB Waybill Data
(Delaware rail flows; pass-thru and Maryland assumptions)

Other
(intercounty adjustments; Cargo Model commodity groups)
Commodity Data

FAF and Transearch geographies on the peninsula...

FAF... 4 Regions

MD remainder

Baltimore

VA remainder

Transearch... 12-Counties
By Weight
70 M tons...
157 M tons w/ pass-thru

By Value
$75 billion...
$327 billion w/ pass-thru

> 60% of total freight in 5 core groups... 80-90% in top 10
Domestic Partners

Inbound Freight

Outbound Freight

≈25% intercounty freight... 95% east of the Mississippi
International Partners

Canada, Europe, and Rest of the Americas...
...plus imports from Southwest and Central Asia...
...plus exports to Mexico and Eastern Asia

**Imports**
- 12 M tons
- $8.2 billion

**Exports**
- 2 M tons
- $4.9 billion
Freight Modes

Mode Split

≈ 80-88% truck (with variations in weight vs. value vs. pass-thru)
Roadway Network

Truck Volumes

Roadway LOS
Multimodal Network

Rail Systems

Freight Transfer Hubs
Delmarva Freight Plan

Broader Perspectives

Summary Corridors

Regional Influences
Freight Scenario Planning

- Scenario Assumptions
- Cube Cargo Model
- Performance Measures
- Preliminary Results
**Freight Scenarios**

Scenarios are methodically-constructed stories... not alternatives

1. Baseline  
   (2011 “existing” vs. 2040 “future”)

2. Multimodal Constraint  
   (trendline vs. accelerated growth)

3. Multimodal Enhancement  
   (trendline vs. accelerated growth)
### Scenario Assumptions

#### Economic Influence
- Population and household growth
- Targeted industries
- Market shifts
- Productivity
- Energy markets
- Port markets

#### Rail Influence
- NEC accessibility
- Rail service modifications
- Rail network enhancements

#### Intermodal Influence
- Future intermodal facility sites
- River/barge accessibility
Cube Cargo Model

Model & Buffer Area

Model Zones
Cube Cargo Model
Performance Measures

Systemwide Perspectives

Performance Monitoring

Corridor Perspectives

Screening & Prioritization

Systemwide & Corridor Examples:

- Truck volume and VMT
- Truck delay and VHT by LOS
- Travel times

- Tonnage by mode
- Tonnage by commodity
- Fiscal impacts

- Capture for distribution centers
- Capture for transfer hubs

- Weigh station exposure
- Rail blockage potential
- Emissions data
Preliminary Results

Travel Time to Bay Bridge
2010 Base

1.5-2.0 Hr

Travel Time to Bay Bridge
2040 No-Build

2.0-3.0 Hr
## Change in Travel Time: Base to Future No-Build

<table>
<thead>
<tr>
<th>County</th>
<th>I-95 W</th>
<th>I-95 E</th>
<th>US 50/301</th>
<th>US 113</th>
<th>Cape May</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bay Br (MD)</td>
<td>Bay Br (VA)</td>
<td>Lewes Ferry</td>
</tr>
<tr>
<td>New Castle</td>
<td>43%</td>
<td>8%</td>
<td>25%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Kent DE</td>
<td>28%</td>
<td>9%</td>
<td>34%</td>
<td>3%</td>
<td>6%</td>
</tr>
<tr>
<td>Sussex</td>
<td>24%</td>
<td>13%</td>
<td>38%</td>
<td>1%</td>
<td>13%</td>
</tr>
<tr>
<td>Caroline</td>
<td>14%</td>
<td>10%</td>
<td>60%</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td>Cecil</td>
<td>45%</td>
<td>29%</td>
<td>34%</td>
<td>8%</td>
<td>16%</td>
</tr>
<tr>
<td>Dorchester</td>
<td>12%</td>
<td>2%</td>
<td>49%</td>
<td>2%</td>
<td>8%</td>
</tr>
<tr>
<td>Kent MD</td>
<td>25%</td>
<td>-5%</td>
<td>47%</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Queen Ann</td>
<td>10%</td>
<td>-7%</td>
<td>68%</td>
<td>4%</td>
<td>1%</td>
</tr>
<tr>
<td>Somerset</td>
<td>15%</td>
<td>7%</td>
<td>31%</td>
<td>1%</td>
<td>9%</td>
</tr>
<tr>
<td>Talbot</td>
<td>13%</td>
<td>1%</td>
<td>81%</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>Wicomico</td>
<td>17%</td>
<td>9%</td>
<td>35%</td>
<td>1%</td>
<td>11%</td>
</tr>
<tr>
<td>Worchester</td>
<td>18%</td>
<td>10%</td>
<td>28%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Preliminary Results

12% increase in Total truck delay
Preliminary Results

Tons by Mode by Scenario

- Rail
- Water

Base | No-Build | Constraint | Constraint Acc | Enhancements

- 5,000,000
- 10,000,000
- 15,000,000
Preliminary Results

Along I-95, traffic increases imply:

- 2.3-2.6% per year
- 65-78% growth by 2040
- 39k trucks by 2040
Freight Planning Implications

- Economic Vitality
- Connectivity, Mobility, Accessibility
- Safety Security
- System Mgmt, Operations, Maintenance
- Sustainability and Environmental Stewardship
Economic Vitality

Supply Chain Positioning

example...
targeted study of key supply chains

Import / Export Opportunities

Land Use Issues

Site-specific Issues

Hidden Impacts

example...
Impacts of reduced modal options
Connectivity / Mobility / Accessibility

- Truck Network Connectivity
  - example...
  - freight corridor designation

- Multimodal Network Connectivity
  - example...
  - rail or port access improvements

- Traffic Congestion

- Passenger Linkages and Conflicts
Safety Planning

example...
safety improvement priorities

Emergency Planning

example...
Virtual Weigh Station sites

Hazardous Materials

Homeland Security
Mgmt / Operations / Maintenance

- Jurisdictional Relationships
- Truck Policies
  - example...
    - freight management areas
- Pavement Management
- Technologies and ITS
  - example...
    - future TRS or VWS site needs
- Waterway Dredging
Sustainability / Environmental

- Air Quality Issues
  - example...
  - truck idling policy implications

- Water Resource Issues

- Community Issues
  - example...
  - first/last mile connectivity

- Other Environmental Planning
Next Steps / Questions

--------------------------------
Chad D. Reese, WR&A
(724) 779-7940
creese@wrallp.com