Delmarva Freight Plan Implementation
Commodity Flow Studies

“Agriculture Supply Chain”

Summer, 2015

December 15, 2015
What is the Delmarva Freight Plan?

State Effort to Meet FHWA Objectives & MAP -21 Freight Planning Goals.

**Approach Goals:**

- Intermodal
- Continuing
- Economic Basis for Projects

**Modes**

- Roadway (Trucks)
- Water (Barge & Ship)
- Rail (Trains)
- Air (Cargo Planes)

**Commodities**

- Weight (Tons)
- Value ( $)

**Routes**

- Frequency
- Connections
- Transfers
Delmarva Freight Traffic is Highly Concentrated.
5 Commodities = 73% of Trucks.

### Key Economic Factors:

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

* Includes inbound, outbound, and local truck tons
Scenario Planning:

"WHAT IF" Examples:

... NEC corridor restrictions continue?

... coal demand ceased?

... barge travel was restricted?

... truck volumes and maintenance needs increased?

... the Chesapeake Connector was completed?

... a new intermodal facility was constructed?

... Post-Panamax trends directly impact the peninsula?

... higher freight volumes conflicted with other users?
Across All Scenarios:

Most of the Growth in Truck Travel will Occur at LOS D/E/F (Congested Conditions).
Industries Have Very Different Travel Patterns:
Agriculture Supply Chain Study

7 Key Delmarva Freight Corridors

Candidate Freight-Related Projects drawn from:
- State Freight Plans (DE, MD, VA)
- Technical Analysis (DE)

Supported by Project Screening & Prioritization

I-95 / I-495 / US 40 “Metro Corridor”
US 301 “Bay Freight Corridor”
US 50 “Ocean City Freight Corridor”
US 13 / US 113 / SR 1 “Coastal Freight Corridor”
US 202 / SR 41 “Piedmont”
US 9 “Lewes Freight Corridor”

Rail Project Candidates
## Agriculture Supply Chain Study

### Corridor Screening:

**Potential Freight Influence:**
- Nominal
- Low
- Moderate
- High

<table>
<thead>
<tr>
<th>Index #</th>
<th>Route / Area</th>
<th>Limits</th>
<th>Description</th>
<th>State</th>
<th>County</th>
<th>Commit Tier</th>
<th>Network Tier</th>
<th>Overall</th>
<th>Economic</th>
<th>Connectivity</th>
<th>Mobility</th>
<th>Safety</th>
<th>Security</th>
<th>Management</th>
<th>O&amp;M</th>
<th>Sustainability</th>
<th>Steward</th>
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<tr>
<td>CS 80</td>
<td>Area Study</td>
<td>Dover</td>
<td>Freight Management Study</td>
<td>DE</td>
<td>KTD</td>
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<tr>
<td>CS 81</td>
<td>Area Study</td>
<td>Dover</td>
<td>Expansion of Air Cargo Ramp at Dover AFB and adjacent development potential (e.g., Kent County AeroPark)</td>
<td>DE</td>
<td>KTD</td>
<td>3</td>
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<td>Harrington</td>
<td>Truck Route Upgrade (DE 14 to US 13)</td>
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<td>KTD</td>
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<td>4</td>
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<td>Seaford</td>
<td>Freight Management Study</td>
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<td>CS 84</td>
<td>Area Study</td>
<td>Southern Delmarva</td>
<td>Intermodal Center Feasibility Study</td>
<td>MD</td>
<td>WIC</td>
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**VIRGINIA**

<table>
<thead>
<tr>
<th>Tier 1S Routes (State Primary)</th>
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<th>Description</th>
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<th>County</th>
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<td>Area Study</td>
<td>Chincoteague-Wallops Island</td>
<td>Freight Access Study</td>
<td>VA</td>
<td>ACC</td>
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<td>CS 91</td>
<td>US 13</td>
<td>Accomack-Northampton Co.</td>
<td>Truck Parking Study</td>
<td>VA</td>
<td>ACC NOR</td>
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Agriculture Supply Chain Study

Statewide Freight Working Group

Delmarva Freight Plan

MPO/DeIDOT Prioritization

Commodity Flow Study #1 Chemicals 2014

Commodity Flow Study #2 Agriculture 2015

Commodity Flow Study #3 Intermodal Transfer 2016

Commodity Flow Study #4 Secondary 2016

Commodity Flow Study #5 2017

FHWA Recommendation
Agriculture Supply Chain Study

Delmarva Supply Chain

Processing Operations

Norfolk Southern

Broiler Operations

Philadelphia
New York
Boston
Baltimore
Washington, D.C.

Nutrients
Vitamins

Kent/Sussex Farms

Seed
Fertilizer
Fuel
Operations
Maintenance

Feed Processing

Philadelphia
New York
Boston
Baltimore
Washington, D.C.

Nutrients
Vitamins
Agriculture Supply Chain Study

Corn Yields in Kent/Sussex Increasing:

Reasons:
1) Irrigation Improvements
2) Seed Density
3) Crop Management
Slight Decrease in Kent/Sussex Cropland:

Increase in Irrigated Kent/Sussex Cropland.
Delmarva Produces Less Corn than Consumed by Broilers
(Requiring Imports from U.S. Midwest)
Conclusions:

1) No Major Transportation Constraints Identified; Proximity to Metropolitan Centers “Competitive Advantage”.

2) Majority of Kent & Sussex Corn & Soybean Production Supports Feed Processing.

3) Over 12 Million Bushels of Corn Imported Annually, via Norfolk Southern.

4) Further Studies / Recommendations: Intermodal Transfer Study of: Grain Storage, Feed Processing & Transport.
Delmarva Freight Plan Implementation
Commodity Flow Studies

“Intermodal Transfer Facility Study”

December 15, 2015
Background:

1) Rail Service is Critical to Farming, Poultry, and Livestock Industries in Delaware.

2) Only One Facility (in Salisbury) Capable of Receiving Barge Grain Shipments; Has Minimal Storage (Especially for Soybeans).

3) Truck Shares of Grain are Much Higher than Other Regions.

4) Live and Processed Poultry Typically Moves by Trucks, But, Much of the Inbound Grain & Fertilizer Moves by Rail.

5) Trend: Inbound Grain “Less Needed” Due to Seasonal Rainfall Variations, “More Needed” Due to Increased Poultry Production.

Outreach Indicated Possible Need & Benefit of a “Transfer Facility”.
Study Goals:

1) Preliminary **Planning-Level Assessment** of:
   a) Market Conditions & Trends
   b) Potential Suitable Locations
   c) Location Site, Access, and Physical Characteristics
      (Lot Area, Access Points, Square Footage, etc.)
   d) General **Logistics & Intermodal** Requirements
   e) Potential **Economic Impacts** (Ranges of Jobs, etc.)
   f) Potential **Costs** (Site, Construction, Ongoing, etc.)

2) Assess If Additional Intermodal Transfer Capacity Would Enhance:
   a) **Efficiency, Reliability, Resiliency** of Kent/Sussex Freight Infrastructure
   b) Existing **Competitive Advantages** of Kent/Sussex Ag & Poultry Industries.
Key Elements / Scope of Work:

1) **Project Kickoff** Meeting
2) Delaware grains and poultry *production, consumption, and transportation demand*
3) Research on Kent/Sussex intermodal transfer facility **need and options**
4) **Planning analysis** of Kent/Sussex intermodal transfer facility
5) **Economic impact** analysis
6) Preparation of **complete deliverables**
Economic Impact Analysis:

1) Estimate the economic impacts of the rail transportation expansion on the Delaware economy and selected counties.

2) Manufacturing and service sectors will be impacted by a change of demand in the transportation sector.

3) Repercussions on all other producing industries and final demand, magnifying indirect impact.

4) Net effects yields two additional economics effects:
   a) Indirect impact (supply chain effect)
   b) Expenditure-induced impact (income effect)
Timeline /Schedule:

1) Project Kick-off Meeting – January 2016
2) Delaware Grains and Poultry Production, Consumption, and Transportation Demand – February 2016
3) Research on Kent/Sussex Intermodal Transfer Facility Needs and Options – March 2016
4) Planning Analysis of Kent/Sussex Intermodal Transfer Facility – March 2016
5) Economic Impact Analysis – April 2016
6) Preparation of Complete Deliverables – May 2016
Thank You!