Virginia Statewide Multimodal Freight Study

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Alan Meyers, Principal
Cambridge Systematics, Inc.

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Why a Multimodal Freight Study?

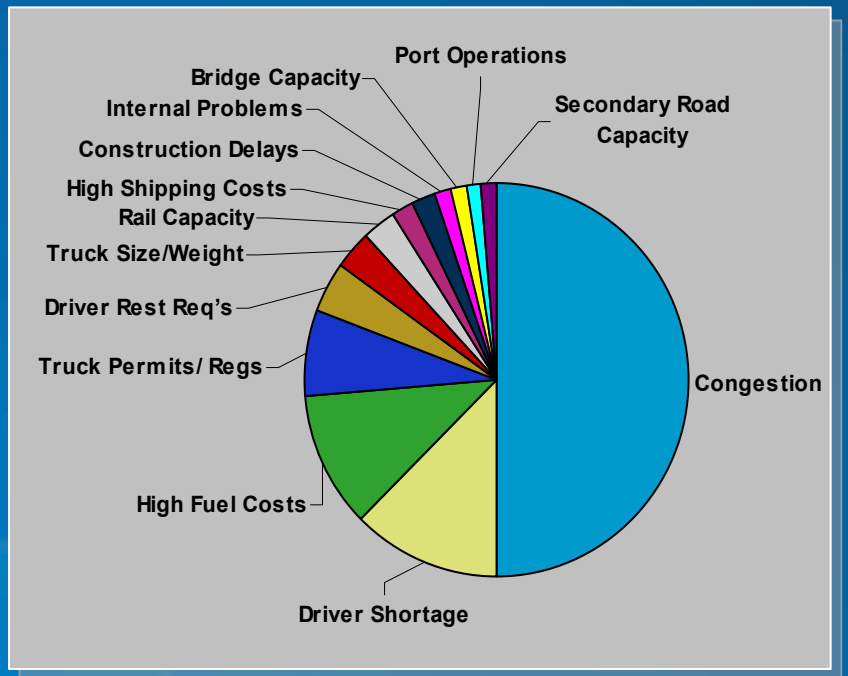
- Freight is a major contributor to Virginia's economy
  - Around 50% of economic output (sales, receipts, operating income), 28% of gross state product (value added), and 34% of jobs are from industries that depend heavily on freight movement: agriculture and food, energy and natural resources, construction, chemicals, transportation and logistics, wholesale and retail sales
- Freight is a major consumer of transportation resources
  - Nation's seventh largest container port; major international air cargo hub; two Class I railroads; two major through-truck corridors (I-95 and I-81)
- Cooperative multi-year effort of all modal agencies
  - First-ever freight study to examine needs and opportunities and develop statewide recommendations to support VTRANS and multimodal planning
  - Respond to legislative mandate for I-81 diversion study
  - Report completed and accepted by the Secretary of Transportation in 2011

Freight Stakeholder Input

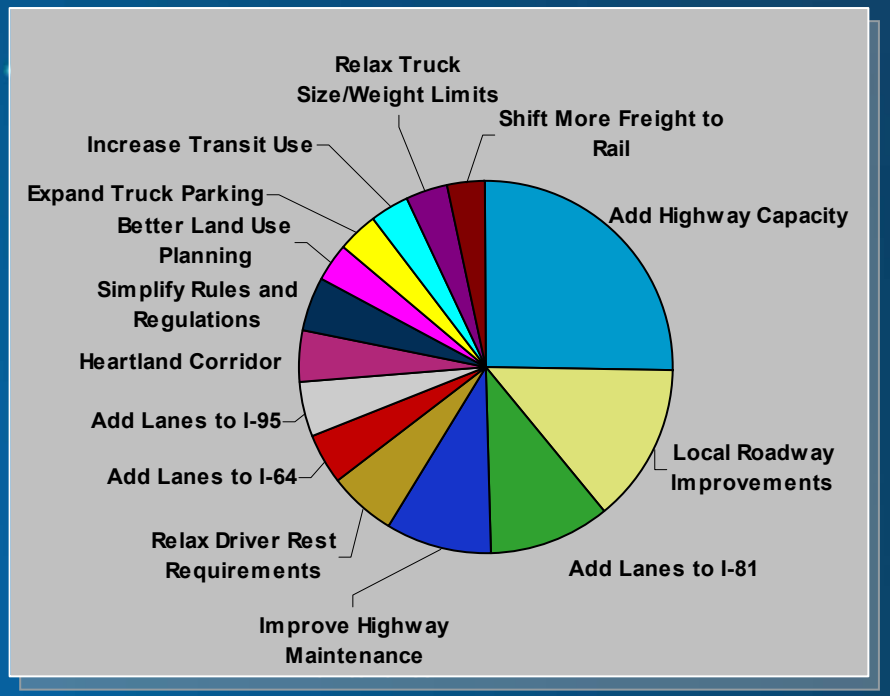
Results of 200 Interviews

- 63% of respondents said Virginia's system is adequate (86% in Harrisonburg, 25% in Northern Virginia)
- Highway congestion is the number one freight concern, especially in Northern Virginia, Hampton Roads, I-81 Corridor, I-95 Corridor; most recommend adding highway capacity, improving rail options

Reported Problems



Recommendations



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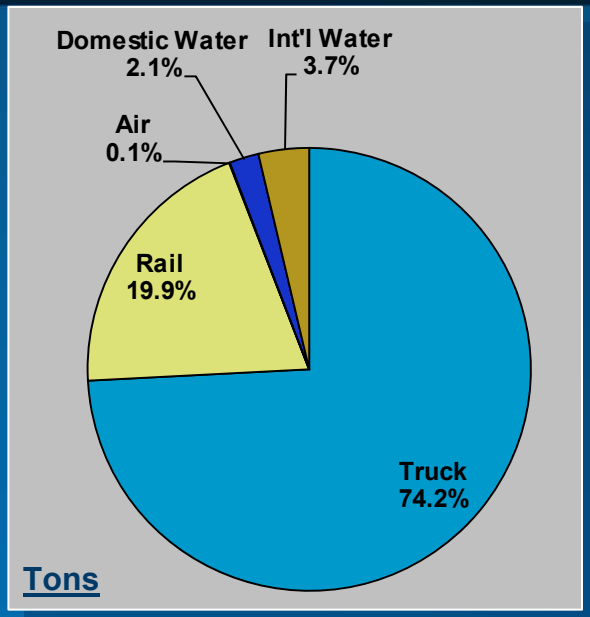
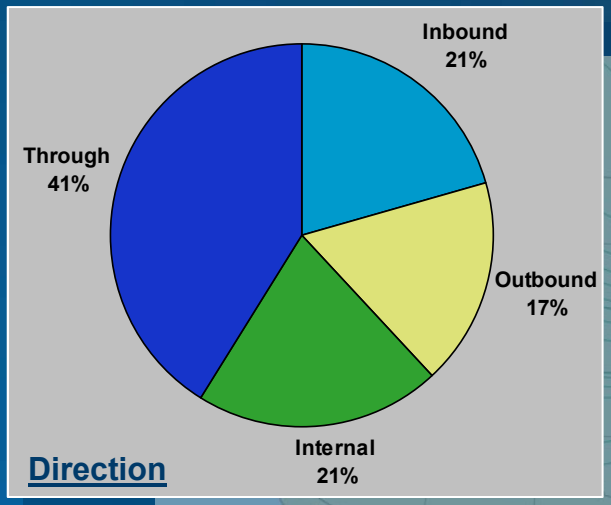
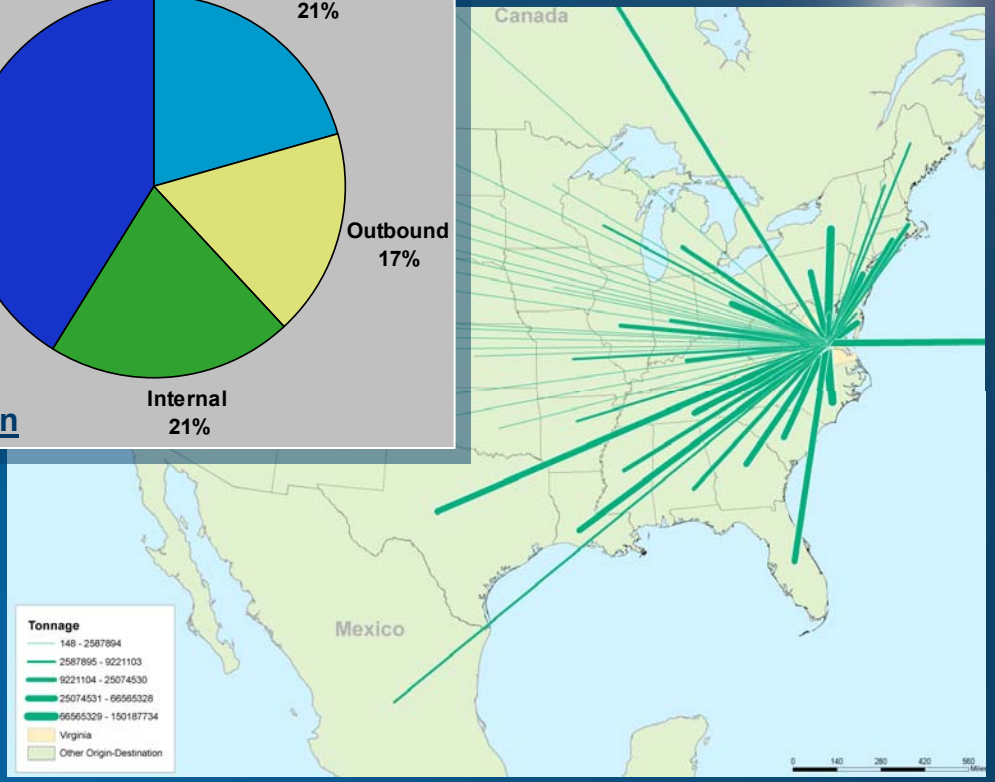
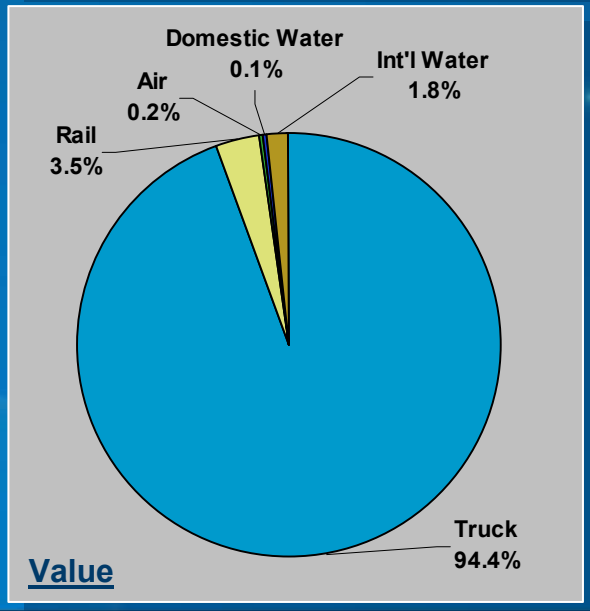
Virginia's Freight System

915 million tons, worth 2.1 trillion dollars









- Study data generally consistent with most recent available Federal estimates (Freight Analysis Framework-3)
- "Through" trips represent pass-thru traffic using a single mode; "linked" trips involving modal transfers in Virginia are reported as separate trips

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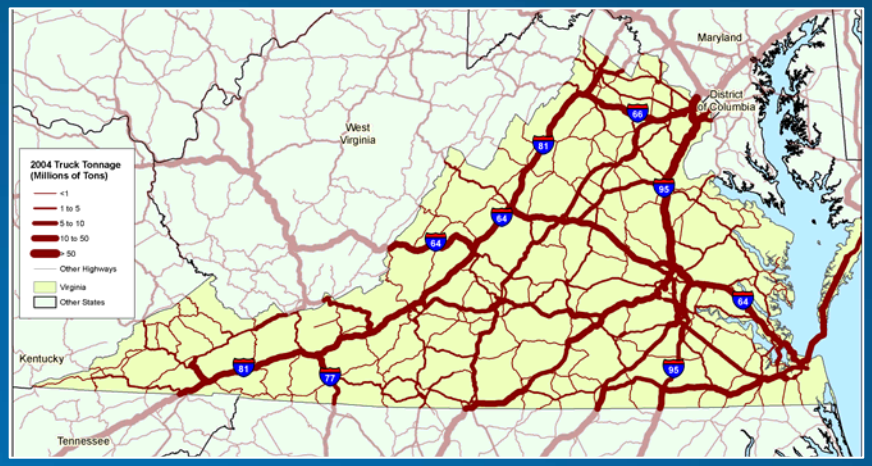
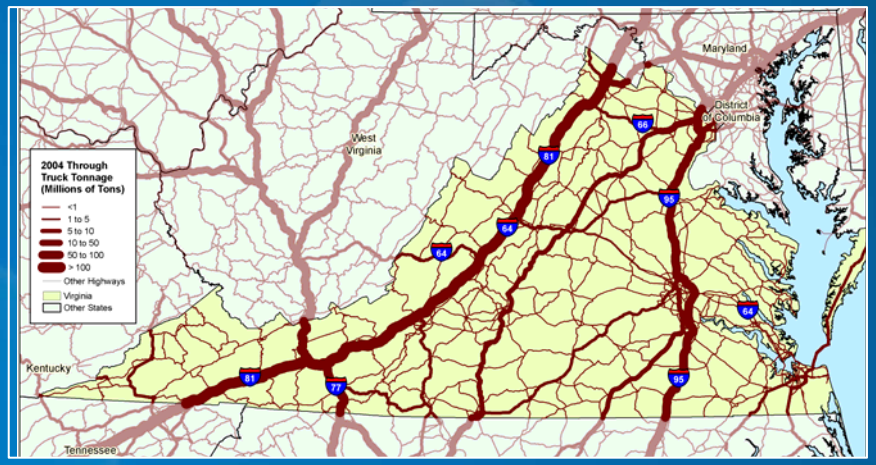
How Freight Uses Virginia's Roads

Virginia 2007 Tonnage (Inbound, Outbound, Internal, Linked)
I-81, I-95, I-64, I-66, I-77, I-85, I-295, US 29, US 360, US 460, US 58, US 13



Pass-Through 2007 Tonnage
I-81, I-95, I-77, I-85, US 29



- Critical issues today
  - Roadway and bridge condition
  - Capacity, congestion, speed, and reliability, especially for critical corridors and urban areas
  - Safety and emergency response
  - Environment (emissions, noise, neighborhoods, fuel consumption) Intermodal connectivity
  - Truck rest areas, driver shortages
  - Advanced two-way information systems
  - Mode-shift and time-shift opportunities
- Critical issues by 2035
  - How to deal with projected freight growth and growing urban congestion?

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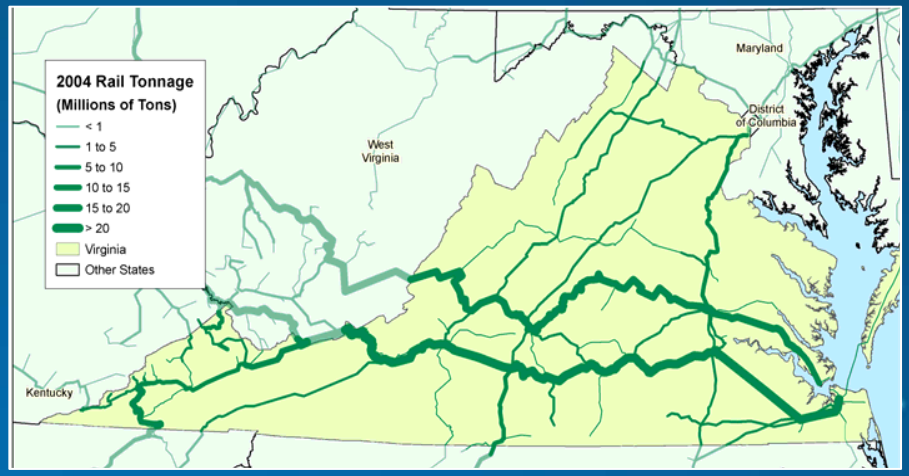
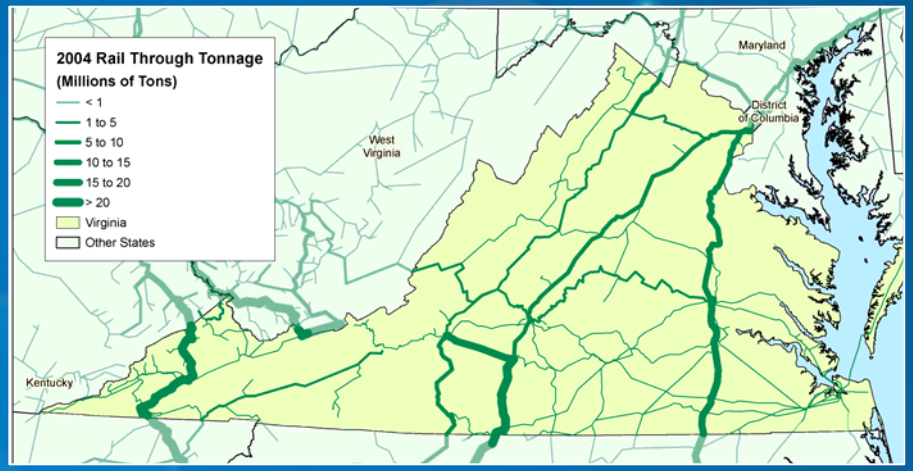
How Freight Uses Virginia's Railroads

Virginia 2007 Tonnage (Inbound, Outbound, Internal, Linked)
NS and CSX east-west lines



Pass-Through 2007 Tonnage
NS and CSX north-south lines



- Critical issues today
  - System preservation and maintenance (lines, bridges, tunnels)
  - Modernizing historic, aging infrastructure to handle heavier, larger railcars in faster and/or scheduled services
  - Port access and quality of service
  - Inland ports, intermodal yards, "integrated logistics centers"
  - Shared access with passengers
  - Diversion of long haul trucks to rail
  - Multistate coordination
- Critical issues by 2035
  - How to handle natural growth in rail traffic while also using rail to reduce pressures on Virginia's highways?

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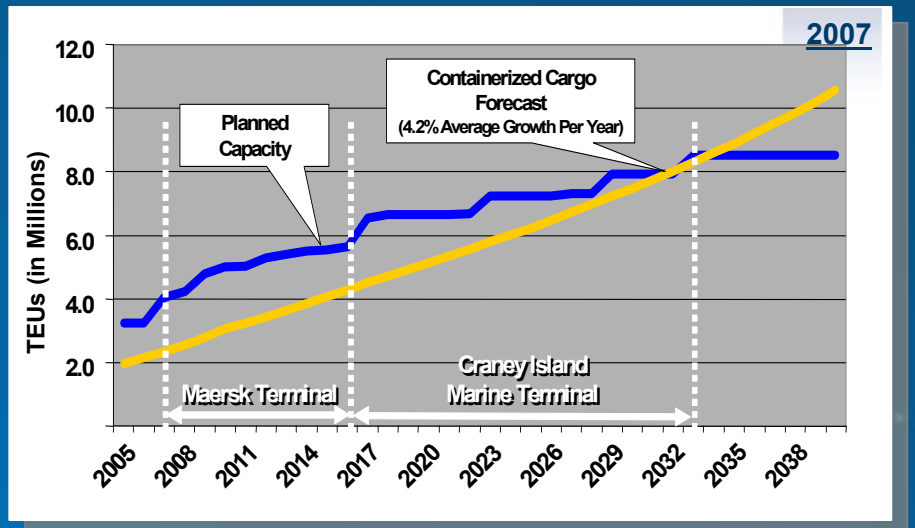
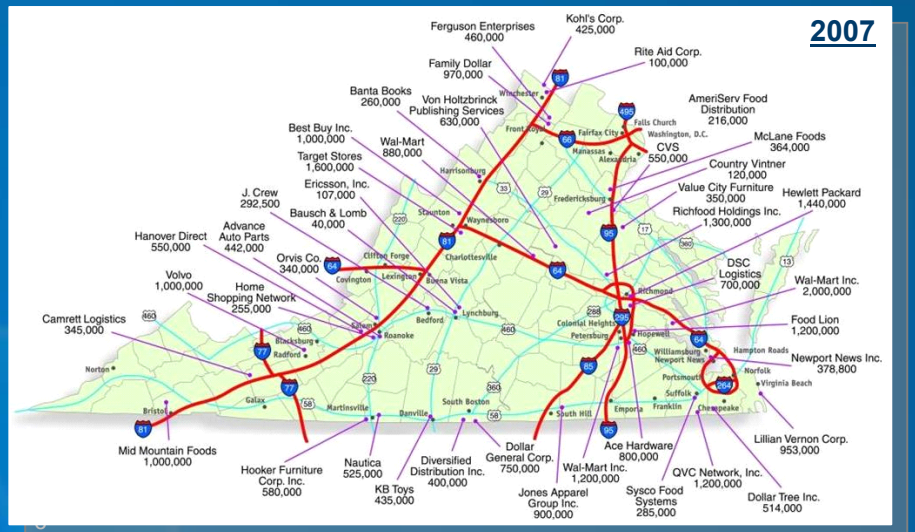
How Freight Uses Virginia's Ports and Warehouse/Distribution Facilities

Pre-Recession Forecast
Still Valid, But Delayed 5 to 8 Years





- Critical issues today
  - Panama Canal expansion, next-generation mega-containerships, and global ocean carrier routings
  - Port capacity and terminal expansion
  - Truck access and rail service
  - Warehouse sites (large parcels, truck/rail access, limited impact)
  - "Marine Highway" initiatives
  - Advanced operations and information
- Critical issues through 2035
  - How to handle significant growth in container traffic and tonnage, while managing transportation and environmental impacts?

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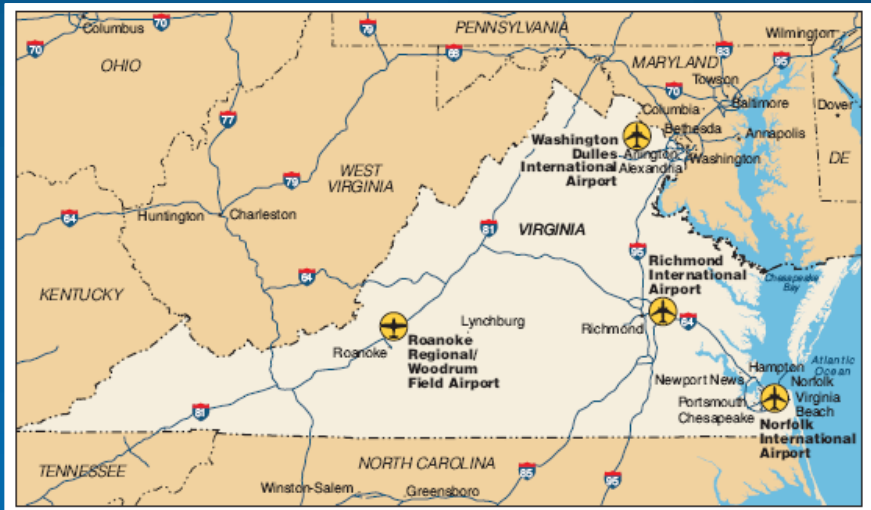
How Freight Uses Virginia's Airports



OPERATIONAL CHARACTERISTICS OF VIRGINIA CARGO AIRPORTS

Airport	2005 Total air cargo (tonnes)	Airline Service/ Capacity (a)	Number of commercial length runways	Length of longest runway (feet)	Distance to connecting transport (b)	Cargo warehouse (sq. feet)	On-site customs & agriculture inspections	FTZ access	Average customs clearance time required
IAD	303,012	40, 5	3	11,500	14, 35, 60, 50	1,229,128	Yes	Yes	1 hour
RIC	49,614	8, 3	2	9,000	5, 5, 30, 25	142,000	Yes	Yes	2 hours
ORF	31,791	7, 3	2	9,000	5, 5, 5, 5	88,000	No	Yes	2 hours
ROA	14,333	5, 3	2	6,800	5, 10, 150, 20	n.a.	No	No	Unknown

* - Indicates that facilities are on airport property.
(a) First number is total carriers and second is all-cargo (including integrated) carriers.
(b) Numbers, in order, are distance, in miles, to major highway, truck terminal, major water port (inland), intermodal center.

Source: 2005 Airport Directory, Air Cargo World, 2006.

- Critical issues today
  - Air freight through Virginia does not suffer from significant bottlenecks – good facilities, good ground access
  - Competition from out of state airports for international service – shippers will truck to JFK, O'Hare because of more frequent wide-body services
- Critical issues through 2035
  - Facilities and ground access generally good
  - How can Virginia be more competitive for international services?

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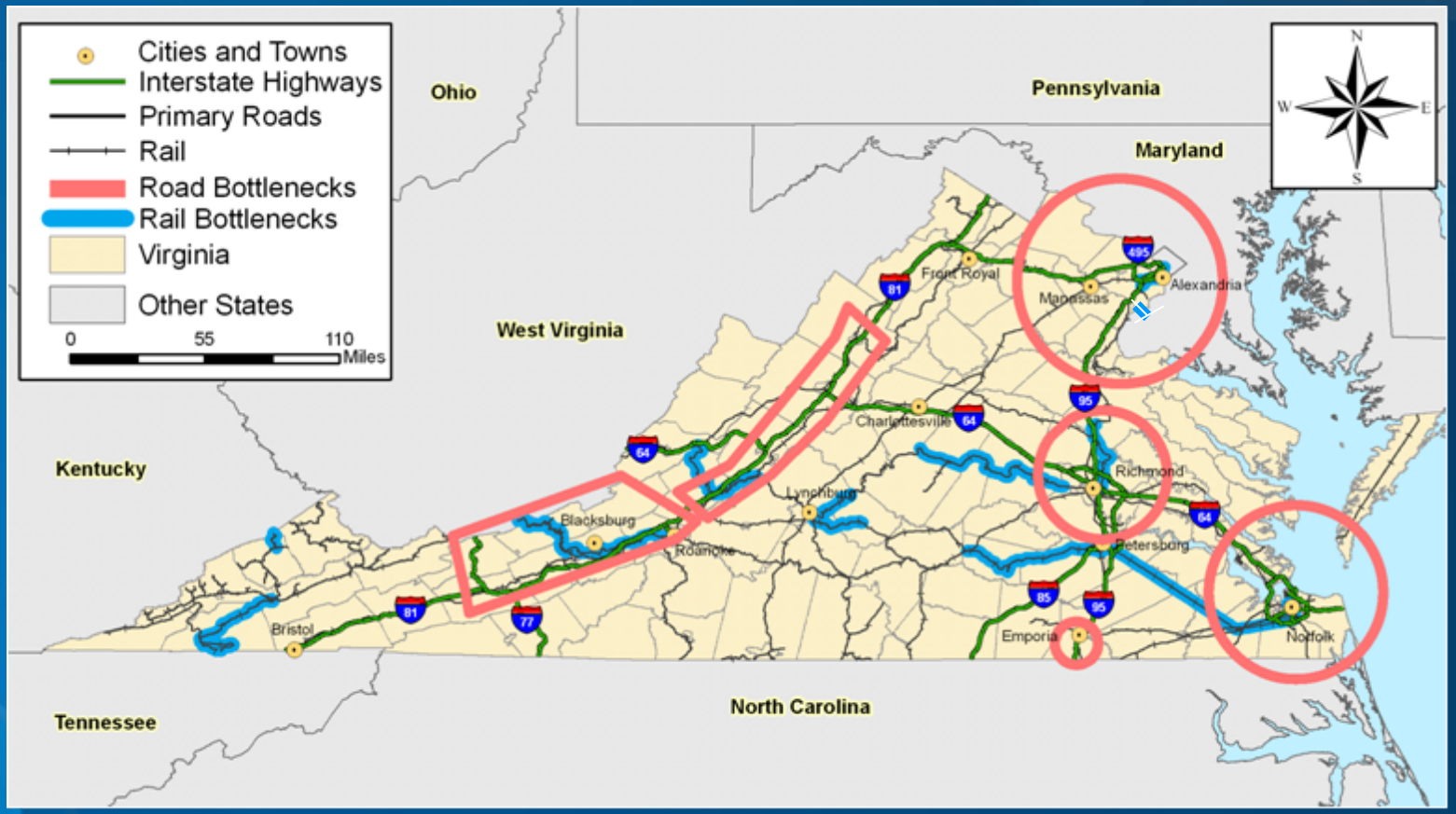
Where are the Most Pressing Freight Needs?

- Urban congestion – Northern Virginia, Hampton Roads, Richmond, Roanoke
- Critical multimodal corridors – I-95, I-81, I-64/US 460
- Port capacity and port access



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Status of Freight Plan Initiatives

Mode	Key Project	Status
Rail	Heartland Corridor Phase I/Phase II	Complete/Underway
	Crescent Corridor Phase I	Underway
	National Gateway Phase I	Underway
	Rail Access to NIT	Underway
Port	Channel Deepening	Complete
	Terminal Projects (NIT, PMT, NNMT)	Complete
	Craney Island Dike Construction and Engineering/Environmental Studies	Complete
	Terminal Equipment	Underway
Highway	I-81 Selected Widenings and Climbing Lanes	Underway
	I-64 Selected Widenings	Underway
	US-460 Corridor PPTA Procurement	Underway
	I-564 Extension to NIT	Underway
	VA-164 Design/Build for APM Terminal Access	Underway
	I-95 Selected Widenings	Complete
	I-95 HOT Lanes PPTA Procurement	Underway
	I-495 HOT Lanes PPTA	Underway

Potential Benefits from Freight Plan Initiatives

- Virginia Statewide Model
  - Freight Plan initiatives emphasize mode shifting, peak shifting, bottleneck elimination
  - 30% less truck VMT under congested conditions and 20% less truck VMT each day
- Cumulative "net direct" benefits through 2035 based, on recent USDOT-recommended methods and factors
  - Avoidance of potential future transportation and environmental impacts: pavement damage, safety, emissions ($4.7 billion)
  - Travel time savings due to reduced highway congestion ($6.6 billion)
  - Direct shipper cost savings from reduced highway congestion and increased use of lower-cost transportation modes ($6.4 billion in direct savings, $5.4 billion in indirect and induced savings, accruing inside and outside VA)
- Significant "economic stimulus" benefits (business retention/attraction, job creation, etc.), best estimated case-by-case

Key Take-Aways

- Freight Study recommendations would improve Virginia freight mobility and generate significant benefits.
- Projects are recently completed or underway
- Freight Study findings should inform other ongoing local, regional, and statewide planning and programming efforts.