

# Best Practices for Statewide Freight Planning

## draft report

*prepared for*

**Tennessee Department of Transportation**

*prepared by*

**Cambridge Systematics, Inc.**

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# Executive Summary

Tennessee has a unique freight profile given the state's location and regional geography. More than 60 percent of the freight volume in the state is passing through the state. Tennessee's mix of highway, railroad, aviation, and waterways access make the state attractive to both domestic and international markets.

The purpose of this report is to prepare a study of freight planning "Best Practices" used in other states. This report details the findings of a survey of freight planning efforts in states with similar freight situations and problems as Tennessee.

Best practices were found through review of data on agency websites, planning documents, and phone calls with staff responsible for freight planning activities in the states of Florida, Indiana, Kentucky, Maine, and Virginia. Freight planning best practices and recommendations for Tennessee DOT's future direction include:

- **Champion:** Identify a high-level person within the agency to be an advocate for freight projects. Other agencies have been successful in their efforts because of the commitment and active involvement of DOT management, including the Secretary or Deputy Secretary of Transportation.
- **Dedicated Staff:** If possible, dedicate at least one person to focus on freight planning and coordination activities. Having dedicated staff can help keep the focus on freight issues while developing and maintaining relationships with freight stakeholders. It is important that there is a constant presence once the process of engagement has begun to make sure that freight customers are heard and relationships with the freight community are nurtured.
- **Engage Stakeholders:** Develop a mechanism to engage freight stakeholders, including those within the DOT, those within other state agencies, local and regional governments, MPOs, and private sector parties. Engaging these groups throughout the process helps ensure that freight projects implemented meet the needs of the DOT as well as its key customers. Suggestions include hosting a freight conference or convening quarterly freight advisory committee meetings.
- **Data:** It is recommended that prior to initiation of any studies, that the DOT get a handle on their freight system through data analysis. Good basic data is essential to conducting meaningful freight analyses, and a variety of sources are available free of charge, including that data garnered through interviews, Freight Analysis Framework (FAF2) data, Commodity Flow Survey, Highway Performance Monitoring System (HPMS) data, Census

County Business Pattern data, Surface Transportation Board (STB) Rail Waybill Sample data, and many others. There also exists much good data that is available for a charge, including Global Insight's TRANSEARCH freight and commodity flow data and Woods & Poole's economic and demographic data.

- **Statewide Freight Plan:** Each case study state reviewed had conducted a statewide freight plan, and each conducted the plan with a varying level of cost and detail. While there is not set formula for what a freight plan must contain, at a minimum a plan should be developed to look at current and future supply (infrastructure), demand (freight flows), and "gaps" of the freight system. It is vital to establish a baseline with a freight plan, so that improvements to the freight system can be tracked. More and more, investments in freight are being considered economic drivers, and more and more freight plans are reviewing state economic structures, supply chains, and identifying how removing freight chokepoints can benefit specific industries. Policy and regulatory framework can also, often be a freight plan component.
- **Freight Funding:** The ability to move traditional highway projects from planning to design and construction are big drivers for a regions economy. And, typically those segments of traditional projects that contain high truck volumes rank higher in economic development potential than those with lower truck volumes. Likewise, non-traditional projects that enhance rail, water and air freight improve a regions economic development potential, however it is difficult to use traditional highway funds to support these projects. Therefore it is important to review to uses for non-traditional funding, and even look towards private sector to help fund freight projects.
- **Partner with Neighboring States:** Look outside the issues of your own state and begin to partner on projects with neighboring states who are likely facing similar challenges. Freight does not stop traveling at state lines; supply chains reach from coast to coast and overseas, therefore the planning to facilitate freight should look beyond borders. Work with neighboring states to team on solutions to common problems while sharing project costs.
- **See Freight Link in all DOT Projects:** Give freight planning staff the leeway to get involved in projects that have not traditionally been viewed as freight projects. Through this interaction all project stakeholders will begin to understand freights importance and how improving travel for passengers oftentimes also benefits freight.
- **No Step is Too Small if it is a Step Forward:** While many freight studies can be labor intensive and be costly, it is important to remember that simple actions can also yield big results. Be careful to not ignore the basic steps that can be taken to give a new freight program to a strong start,

including getting to know the system by visiting intermodal and trucking terminals, collecting field data or conducting truck Origin-Destination studies, and picking up the phone to reach out to freight operators.

# 1.0 Overview

The geographic characteristics of the Tennessee give it a unique network of highway, railroad, aviation, and waterway systems that provide access to both domestic and international markets. Tennessee borders eight other states and shares a significant amount of freight traffic with those neighbors.

## 1.1 SOCIO ECONOMIC CONDITIONS

### Demographics

With a population increase of more than 30 percent and an employment increase of more than 40 percent by 2030, the state will see a geographic expansion of its large urban areas and other urban centers. Population growth is projected to be greatest in the metropolitan Nashville area, with other higher growth pockets in eastern Tennessee along the I-75 and I-40 corridors, though the majority of counties are expected to see growth between 25 and 50 percent. Forecasts show disproportionate growth in the numbers of the elderly, which raises questions about long-term mobility. Transportation mobility for the rural population and minority population segments is also a long-term consideration. Employment growth echoes population growth for the most part, with most areas seeing increases of 15 percent or more<sup>1</sup>.

### Industry

Tennessee has enjoyed positive economic growth at or above the national trend over the last decade, and the outlook is for continued economic expansion. This outlook is based on the state's diverse regional economies drawing from sectors as diverse as manufacturing, distribution, agriculture, tourism, education, and retirement communities. The state's location, close to the bulk of the eastern U.S. markets and a reliable labor pool, has over the years attracted economic anchors such as Federal Express, General Motors' Saturn division, Nissan Corporation, and Dell Computer Corporation. With this economic growth will come increased demand for reliable goods transportation across all modes of freight<sup>2</sup>.

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<sup>1</sup> TDOT Long Range Transportation Plan, December 2005

<sup>2</sup> TDOT Long Range Transportation Plan, December 2005

## 1.2 FREIGHT TRANSPORTATION SYSTEM

Tennessee truly has a multi-modal, interconnected goods movement system, as is attested by the volume of freight that travels through the state. According to FHWA's Freight Analysis Framework (FAF2), in 2002 Tennessee's freight transportation system moved 616 million tons of freight valued at over \$574 Billion, as shown in Tables 1.1 and 1.2. Comparing these values to 2002 U.S. totals, Tennessee freight accounts for 3.2% of the total U.S. freight tonnage and 4.3% of the total U.S. freight value.

By 2035 Tennessee values are expected to be nearly 1,330 million tons and worth nearly \$2 Trillion, or 3.6% and 4.6%, respectively, of total U.S. freight. A detailed breakdown of each component of the freight system is found in the following sections.

**Table 1.1 TN Shipments by Weight: 2002 and 2035 (Millions of Tons)**

Mode	2002 Tons	% 2002 Total	2035 Tons	% 2035 Total
Air & Truck	0.48	0.08%	2.81	0.21%
Other Intermodal	8.46	1.37%	14.01	1.05%
Pipeline & Unknown	139.50	22.65%	287.04	21.58%
Rail	53.51	8.69%	113.42	8.53%
Truck	378.53	61.45%	853.45	64.18%
Truck & Rail	0.90	0.15%	1.58	0.12%
Water	34.65	5.62%	57.53	4.33%
<b>TOTAL</b>	<b>616.02</b>	<b>100.00%</b>	<b>1,329.84</b>	<b>100.00%</b>

Source: FAF2, Note: Other intermodal includes U.S. Postal Service and courier shipments and all intermodal combinations except air and truck. Pipeline and unknown shipments are combined because of data on region-to-region flows by pipeline are statistically uncertain.

**Table 1.2 TN Shipments by Value: 2002 and 2035 (\$ Millions)**

Mode	2002 Value	% 2002 Total	2035 Value	% 2035 Total
Air, air & truck	43,644.61	7.60%	373,643.87	19.61%
Other Intermodal	42,295.62	7.36%	171,303.02	8.99%
Pipeline & Unknown	50,544.44	8.80%	107,212.40	5.63%
Rail	12,226.14	2.13%	24,116.66	1.27%
Truck	417,702.47	72.71%	1,215,777.04	63.80%
Truck & Rail	3,785.99	0.66%	6,561.92	0.34%
Water	4,258.68	0.74%	6,878.23	0.36%
<b>TOTAL</b>	<b>574,457.96</b>	<b>100.00%</b>	<b>1,905,493.13</b>	<b>100.00%</b>

Source: FAF2, Note: Other intermodal includes U.S. Postal Service and courier shipments and all intermodal combinations except air and truck. Pipeline and unknown shipments are combined because of data on region-to-region flows by pipeline are statistically uncertain.

In 2002 Tennessee was its own top trading partner, with transport of goods internal to the state weighing 223 Million tons and valued at nearly \$98 Billion. Top intra-state commodities include things such as machinery, mixed freight,

pharmaceuticals, and motorized vehicles. Key trading partners in tonnage and value are also some of the states that surround Tennessee, like Kentucky, Alabama, Georgia, Arkansas, and Mississippi, as shown in table 1.3 and 1.4.

**Table 1.3 Top Trading Partners by Weight: 2002 and 2035 (Millions of Tons)**

TN Origin State	2002 Tons	2035 Tons	TN Destination State	2002 Tons	2035 Tons
KY	70	129	MS	49	85
AL	24	68	AL	26	69
GA	15	37	KY	17	52
AR	10	20	VA	13	12
MS	9	23	CN	10	24

Source: FAF2

**Table 1.4 Top Trading Partners by Value: 2002 and 2035 (\$ Millions)**

TN Origin State	2002 Value	2035 Value	TN Destination State	2002 Value	2035 Value
MS	25,560	43,481	KY	29,720	67,080
AL	14,271	33,170	GA	18,522	55,746
GA	14,217	36,228	CA	17,887	48,098
KY	13,319	61,672	TX	15,194	40,394
IL	9,084	22,693	MD	13,603	42,113

Source: FAF2

## Highways

The highway system is by far the most extensive modal system in the state, providing links to virtually every developed area in the state. The highway network has historically been the foundation of mobility and will continue to serve in this capacity into the future. The state highway system contains:

- 14,150 miles of state highways (16 percent of all road centerline miles)
- 1,073 miles of interstate
- 13,077 miles of state roads<sup>3</sup>

Major users of the highway system are trucks carrying freight. And, as shown in Tables 1.1 and 1.2 the vast majority of Tennessee freight in 2002 was carried via truck including over 61% of total freight tonnage and nearly 73% of total freight value. Table 1.5 shows the growth in truck freight that will occur between 2002 and 2035, doubling in tonnage, and nearly tripling in value. This increase will

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<sup>3</sup> TDOT Long Range Transportation Plan, December 2005

have a significant impact on maintenance on operational requirements of the highway system. Table 1.6 shows top truck commodities by weight and value.

**Table 1.5 Truck Shipments by Weight and Value (2002 & 2035)**

Mode	2002 Tons (Mill)	2035 Tons (Mill)	% Change 2002 - 2035	2002 Value (\$ Mill)	2035 Value (\$ Mill)	% Change 2002 - 2035
Truck	378.53	853.45	125%	417,702.47	1,215,777.04	191%

Source: FAF2

**Table 1.6 Top Truck Commodities by Weight and Value (2002)**

Commodity	Tons (Mill)	Commodity	Value (\$ Mill)
Gravel	68.1	Pharmaceuticals	59,374.9
Nonmetal min. prods.	42.0	Machinery	56,999.2
Cereal grains	30.6	Mixed freight	40,971.6
Waste/scrap	26.1	Motorized vehicles	35,087.1
Gasoline	20.8	Textiles/leather	23,149.4
Other foodstuffs	16.1	Electronics	20,497.9
Mixed freight	13.1	Misc. mfg. prods.	16,425.3
Unknown	12.6	Other foodstuffs	14,911.0
Base metals	12.2	Plastics/rubber	14,207.3
Wood prods.	12.0	Articles-base metal	12,123.7

Source: FAF2

## Railroads

The rail system in Tennessee consists of a network of 2,595 miles of rail lines across the state and is primarily used for freight movement, except for limited Amtrak service along the western border. The state serves as a gateway for east-west transfers between rail carriers, as Memphis is one of 5 rail crossings in the U.S. across the Mississippi River. The state rail system includes:

- Six Class I railroads operating on 2,083 miles of track in the state, accounting for 74 percent of the total rail mileage in Tennessee. CSX and Norfolk Southern are the dominant state carriers, with 91 percent of the Class I miles.
- 12 shortline railroads operating more than 665 miles of track, or 24 percent of the statewide system.
- 6 terminal and switching railroads operating on 67 miles of track<sup>4</sup>.
- Intercity passenger rail service within the state is limited, spanning service over just 132 miles to two stations in Memphis and Newbern-Dyersburg<sup>5</sup>.

<sup>4</sup> Association of American Railroads, November 2006

As previously shown in Tables 1.1 and 1.2 in 2002 over 8% of total freight tonnage and 2% of total freight value is carried by rail. Rail traffic in Tennessee has experienced a slight decline since 1999, however volumes are today holding steady and are expected to double in tonnage and value by 2035 as seen in Table 1.7. Not surprising is the dominant commodity by weight carried by rail is coal, shown in Table 1.8.

**Table 1.7 Rail Shipments by Weight and Value (2002 & 2035)**

Mode	2002 Tons (Mill)	2035 Tons (Mill)	% Change 2002 - 2035	2002 Value (\$ Mill)	2035 Value (\$ Mill)	% Change 2002 - 2035
Rail	53.51	113.42	112%	12,226.14	24,116.66	97%

Source: FAF2

**Table 1.8 Top Rail Commodities by Tons and Value (2002)**

Commodity	Tons (Mill)	Commodity	Value (\$ Mill)
Coal	18.6	Basic chemicals	2,045.4
Basic chemicals	4.8	Motorized vehicles	1,522.3
Gravel	3.5	Newsprint/paper	1,359.2
Cereal grains	3.3	Coal-n.e.c.	1,047.2
Coal-n.e.c.	3.1	Base metals	937.2
Fertilizers	2.9	Other foodstuffs	911.6
Other foodstuffs	2.7	Chemical prods.	529.4
Waste/scrap	2.5	Plastics/rubber	506.6
Newsprint/paper	2.2	Coal	436.8
Base metals	1.7	Fertilizers	414.3

Source: FAF2, Note: n.e.c., not elsewhere classified

Intermodal has been the fastest growing segment of the rail industry in recent years. While the current weight and value of intermodal movements is a small percent of the total rail volume, 1.5% and 8%, respectively as shown in Tables 1.1 and 1.2, this business will show tremendous growth by 2035. In fact, as shown in Tables 1.9 and 1.10 the value of intermodal goods will grow by over 300%, with the leading value commodities of electronics and pharmaceuticals.

<sup>5</sup> TDOT Long Range Transportation Plan, December 2005

**Table 1.9 Intermodal Shipments by Weight and Value (2002 & 2035)**

Mode	2002 Tons (Mill)	2035 Tons (Mill)	% Change 2002 - 2035	2002 Value (\$ Mill)	2035 Value (\$ Mill)	% Change 2002 - 2035
Truck & Rail	0.90	1.58	76%	3,785.99	6,561.92	73%
Other Intermodal	8.46	14.01	66%	42,295.62	171,303.02	305%

Source: FAF2, Note: Other intermodal includes U.S. Postal Service and courier shipments and all intermodal combinations except air and truck.

**Table 1.10 Top Intermodal Commodities by Tons and Value (2002)**

Commodity	Tons (Mill)	Commodity	Value (\$ Mill)
Coal	3.9	Electronics	11,245.4
Gravel	1.6	Pharmaceuticals	8,359.3
Base metals	0.7	Motorized vehicles	3,789.2
Coal-n.e.c.	0.5	Precision instruments	3,536.9
Basic chemicals	0.3	Misc. mfg. prods.	3,268.2
Motorized vehicles	0.3	Textiles/leather	3,120.0
Electronics	0.2	Machinery	2,300.3
Printed prods.	0.2	Mixed freight	2,137.0
Other foodstuffs	0.2	Printed prods.	2,017.0
Misc. mfg. prods.	0.2	Articles-base metal	1,356.8

Source: FAF2, Notes: Contains information for "Truck & Rail" and "Other Intermodal" modes, n.e.c., not elsewhere classified

## Aviation

The state's aviation system plays a key role in the commerce and economy of Tennessee, providing commercial airline passenger and freight services, as well as charter and general aviation activities at dozens of sites across the state. The aviation industry generates an economic impact of approximately \$3 billion and provides about 49,000 jobs. Six commercial service airports provide service in Memphis, Nashville, Knoxville, Chattanooga, Jackson, and the Tri-Cities<sup>6</sup>.

Enplaned and deplaned cargo is expected to grow by nearly 500%, from .48 Million tons (960 Million pounds) in 2002 to 2.81 Million tons (5.62 Billion pounds) in 2035. These figures are dominated by FedEx activity at the Memphis airport, which accounts for about 63 percent of statewide air freight tonnage and 86 percent of statewide air freight value. Air freight is best suited for light-weight, high-value, time-sensitive material, and as shown in Table 1.12, top commodities reflect this characteristic in machinery, electronics, precision instruments, chemicals, pharmaceuticals and others.

<sup>6</sup> TDOT Long Range Transportation Plan, December 2005

**Table 1.11 Air Shipments by Weight and Value (2002 & 2035)**

Mode	2002 Tons (Mill)	2035 Tons (Mill)	% Change 2002 - 2035	2002 Value (\$ Mill)	2035 Value (\$ Mill)	% Change 2002 - 2035
Air, Air & Truck	0.48	2.81	484%	43,644.61	373,643.87	756%

Source: FAF2

**Table 1.12 Top Air Commodities by Tons and Value (2002)**

Commodity	Tons (Mill)	Commodity	Value (\$ Mill)
Machinery	0.09	Machinery	9,292.7
Printed prods.	0.07	Electronic and other electrical equipment	9,289.6
Electronic and other electrical equipment	0.05	Precision instruments and apparatus	4,902.9
Basic chemicals	0.04	Precision instruments	4,359.0
Chemical products and preparations, n.e.c.	0.03	Mixed freight	2,964.0
Precision instruments and apparatus	0.02	Pharmaceuticals	2,830.8
Mixed freight	0.02	Transportation equipment, n.e.c.	1,650.6
Textiles, leather, and articles of textiles or leather	0.02	Miscellaneous manufactured products	1,309.0
Plastics and rubber	0.01	Electronics	1,153.8
Natural sands	0.01	Chemical products and preparations, n.e.c.	908.8

Source: FAF2, Note: n.e.c., not elsewhere classified

## Waterways

Tennessee has a well developed, well used inland waterway system with three river navigation systems providing access from all of Tennessee's major cities (Memphis, Nashville, Knoxville, and Chattanooga) to the Midwest and the Gulf Coast. Due to its location, Tennessee can use its waterways to easily transport commodities north into major metropolitan markets or south to deep water ports. The states' 887 main channel miles of navigable rivers include:

- Tennessee River: 401 miles
- Cumberland River: 310 miles
- Mississippi River: 176 miles

Tennessee has 172 ports along or inside the state's borders and six ports along the Mississippi River. The largest and busiest port is the International Port of

Memphis, second largest inland port on the Mississippi River and fourth largest inland port in the country<sup>7</sup>.

While water transportation is the slowest mode of goods movement, using barges to transport freight is the most cost efficient, environmentally friendly, and safest mode compared to air, rail, or truck modes. As shown in Table 1.13, water freight is expected to grow modestly in both weight and value between 2002 and 2035, with 66% and 62% increases, respectively.

Table 1.14 provides an overview of top commodities by weight and value carried by Tennessee rivers. These commodities include a variety of bulk goods including fuel oil, gravel, waste and scrap metal, chemicals, fertilizers, and farm products such as corn and wheat.

**Table 1.13 Water Shipments by Weight and Value (2002 & 2035)**

Mode	2002 Tons (Mill)	2035 Tons (Mill)	% Change 2002 - 2035	2002 Value (\$ Mill)	2035 Value (\$ Mill)	% Change 2002 - 2035
Water	34.65	57.53	66%	4,258.68	6,878.23	62%

Source: FAF2

**Table 1.14 Top Water Commodities by Tons and Value (2002)**

Commodity	Tons (Mill)	Commodity	Value (\$ Mill)
Fuel oils	13.8	Fuel oils	2,714.7
Gravel	5.9	Waste/scrap	612.5
Waste/scrap	5.7	Coal-n.e.c.	420.5
Coal-n.e.c.	2.9	Cereal grains	97.0
Coal	1.5	Base metals	95.3
Cereal grains	1.2	Milled grain prods.	77.3
Nonmetal min. prods.	1.0	Nonmetal min. prods.	67.2
Milled grain prods.	0.9	Fertilizers	66.7
Fertilizers	0.4	Other ag prods.	59.2
Other ag prods.	0.3	Basic chemicals	19.5

Source: FAF2, Note: n.e.c., not elsewhere classified

## 1.3 OTHER CONSIDERATIONS

While socio-economic and modal data is a good starting point to draw comparisons between Tennessee and other states, a brief review of some key considerations the state is weighing should also be considered to make Tennessee freight planning successful. These include:

<sup>7</sup> TDOT Long Range Transportation Plan, December 2005

*Economic Link* - Tennessee currently does not have a mechanism to connect the freight planning and other transportation programming to economic development. This is something that is desired and should be evaluated in future case studies.

*Truck/Rail Diversion* - As part of the I-40/I-81 Corridor Feasibility Study from Bristol to Memphis, truck to rail diversion is being reviewed. As this corridor is the most populous and heavily traveled truck route in the state, future demand is expected to outweigh the current capacity. In order to preserve capacity, long-haul truck trips are being reviewed for diversion to rail. As this diversion concept is new to the state, case studies will be examined for applicable best practices.

*Political Visibility* - In order to make progress and move ideas forward, a freight planning division needs to have both political visibility and power within agency to make decisions. This is something that is desired and should be evaluated in future case studies.

## 2.0 Comparison States

Based on CS knowledge, data, and other considerations presented in Section 1, a list of comparison states was developed. While data and direct applicability of a comparison state to Tennessee is of benefit, there is also opportunity to highlight aspects of freight planning programs that are done well in other states, albeit not directly applicable to data. Based on CS experience, components of good freight planning programs in Departments of Transportation include:

- Give attention and visibility to freight – those that have been most successful have a secretarial-level freight office.
- Planning staff that understands the links between investment in freight transportation systems and economic development.
- Coordinate across planning, operations, and engineering for all freight activities, as they are inherently multimodal and interdisciplinary.
- Develop a primary point of contact and a well-defined process for communicating with stakeholders.
- Establish a Freight Advisory Committee led by the state DOT secretary or the freight office director. Committee should include shippers, carriers, and state economic development agency staff.
- Freight systems operate at local, regional, national, and global scales; effective state DOT freight programs must coordinate with adjoining

states in same economic regions; multi-state coalitions are the most effective forums to leverage individual state efforts.

Following is a list of ten states suggested for further consideration. The reasons for their selection is contained in illustrative bullets and supplemented by Appendix A. These are not listed in order of preference.

1. Florida
  - CS experience
  - Unified Division – Intermodal Systems Development
  - Integrates freight into transportation planning and funding system
  
2. Indiana
  - CS experience
  - Modal comparison
  - Unique - Air Cargo Hub
  
3. Kentucky
  - Adjacent state
  - Modal comparison
  - Freight integrated into all planning activities
  
4. Louisiana
  - Adjacent state
  - Modal comparison
  - Modal comparison - Mississippi River Rail Gateway
  
5. Maine
  - CS experience
  - Freight given visibility – secretarial-level involvement
  - Freight seen as a “system”

6. Maryland
  - CS experience
  - Freight planning Conducted within Modal/Operations Offices
  - Mechanism for freight coordination: Office of Freight Logistics in Secretary's Office (MD) – provides umbrella for freight activities
  
7. Missouri
  - Adjacent state
  - Modal comparison - Mississippi River Rail Gateway
  
8. Ohio
  - CS experience
  - Modal comparison
  - Unique - Air Cargo Hub
  - Freight integrated into all planning activities – planning done by planners
  
9. Virginia
  - Adjacent state
  - CS experience
  - Modal comparison
  
10. Washington
  - CS experience
  - Modal comparison
  - Freight Within Operations Division
  - Secretarial-Level Freight Office and Independent Investment Board

Figure 2.1 Comparison States for Freight Planning Case Study Consideration – State Data

State	Population (2007 est.)	Region	Department of Transportation Related Information						CS Experience			
			Agency	Agency Responsible for Rail	Agency Responsible for Air	Agency Responsible for Ports and Waterways	Freight Office (if applicable)	Freight Projects, Initiatives, and Plans	Web Site	Internal CS Knowledge	CS Freight Plan	Case Study
Florida	18,251,243	South	FDOT	FDOT Rail Office		FDOT Seaport Office		Florida Strategic Freight Network; 2020 Florida Statewide Intermodal System Plan; Transportation Cornerstone Florida, 1999; Florida Trade Corridor Assessment Study, 2001; National I-10 Freight Corridor Study, 2003 (multi-jurisdictional); Latin America Trade and Transportation Study (multi-jurisdictional)	<a href="http://www.dot.state.fl.us/">http://www.dot.state.fl.us/</a>	X	X	X
Indiana	6,345,289	Midwest	INDOT	Office of Rail	Office of Aviation		Office of Freight Mobility	Indiana Rail Plan (2002), Statewide Freight Plan (in process)	<a href="http://www.in.gov/indot/">http://www.in.gov/indot/</a>	X	X	
Kentucky	4,241,474	South	KYTC		KYTC Department of Aviation			Kentucky Statewide Intermodal Freight Plan; Latin America Trade and Transportation Study (multi-jurisdictional)	<a href="http://transportation.ky.gov/Multimodal/KYTC_Freight.asp">http://transportation.ky.gov/Multimodal/KYTC_Freight.asp</a>			
Louisiana	4,293,204	South	LADOTD	DOTD Division of Marine and Rail Transportation	DOTD Division of Aviation	DOTD Division of Marine and Rail Transportation		Access to Louisiana Freight Terminals; National I-10 Freight Corridor Study, 2003 (multi-jurisdictional); Latin America Trade and Transportation Study (multi-jurisdictional)	<a href="http://www.dotd.state.la.us/">http://www.dotd.state.la.us/</a>			
Maine	1,317,207	Northeast	MDOT	MDOT	MDOT	MDOT	Office of Freight Transportation	Maine Integrated Freight Plan; Heavy Haul Truck Network Study, 2001; I-95 Corridor Coalition Intermodal Strategic Plan, 2001 (multi-jurisdictional); Mid-Atlantic Rail Operations Study, 2001 (multi-jurisdictional); Eastern Boarder Transportation Coalition (multi-jurisdictional)	<a href="http://www.maine.gov/mdot/freight/freight-home.php">http://www.maine.gov/mdot/freight/freight-home.php</a>	X	X	X
Maryland	5,618,344	Midatlantic	MDOT	MDOT Maryland Transit Administration, Office of Rail Freight Services	MDOT Maryland Aviation Administration	MDOT Maryland Port Administration	Office of Freight Logistics	Maryland Freight Mobility Plan; I-95 Corridor Coalition Intermodal Strategic Plan, 2001 (multi-jurisdictional); Mid-Atlantic Rail Operations Study, 2001 (multi-jurisdictional)	<a href="http://www.mdot.state.md.us/">http://www.mdot.state.md.us/</a>	X	X	
Missouri	5,878,415	Midwest	MoDOT	MoDOT Railroad Section of Multimodal Division	MoDOT Aviation Section of Multimodal Division	MoDOT Waterways Section of Multimodal Division	Railroad Section of Multimodal Division	Missouri Statewide Freight Study (2005), Freight Optimization and Development in Missouri: Ports and Waterways Module (2008), Missouri Port Authority Assessment (2007)	<a href="http://www.modot.org">http://www.modot.org</a>			
Ohio	11,466,917	Midwest	ODOT	Ohio Rail Development Commission	ODOT Office of Aviation			Access Ohio 2004-2030; Impact of Trucks on Ohio's Roadways, 2001	<a href="http://www.dot.state.oh.us/">http://www.dot.state.oh.us/</a>	X	X	
Virginia	7,712,091	Midatlantic	VDOT	Department of Rail and Public Transportation	Department of Aviation	Port of Virginia		Virginia Statewide Multimodal Freight Study, Phase 1 (2007), Phase 2 (in progress)	<a href="http://www.vdot.virginia.gov">http://www.vdot.virginia.gov</a>	X	X	
Washington	6,468,424	West	WSDOT	WSDOT Public Transportation and Rail Division	WSDOT Aviation Division		Office of Freight Strategy and Policy	FAST Corridor; Freight Mobility Strategic Investment Board; International Mobility and Trade Corridor Project; Freight Implementation Plan; 2002 Activities and Recommendations Report	<a href="http://www.wsdot.wa.gov/freight/">http://www.wsdot.wa.gov/freight/</a>	X	X	X

Figure 2.2 Comparison States for Freight Planning Case Study Consideration – Goods Movement Data

State	Key Freight System Components				Transportation & Warehousing (2002)		State of Origin			Weight by Mode (State of Origin) thousands of tons				State of Destination			Weight by Mode (State of Destination) thousands of tons			
	State Owned Rural and Urban Miles	Class I's	Water	Air	Establishments	Revenue (\$1,000s)	Total Freight Value (\$ millions)	Total Weight (Thousands Tons)	Total Weight (Millions Ton-Miles)	Truck	Rail	Water	Air (including truck and air)	Total Freight Value (\$ millions)	Total Weight (Thousands Tons)	Total Weight (Millions Ton-Miles)	Truck	Rail	Water	Air (including truck and air)
Florida	12,053	2	Ports		11,193	25,805,912	296,989	455,084	68,310	361,197	S	S	238	404,644	541,905	130,303	382,706	102,757	36,942	S
Indiana	11,186	5	Ports	FedEx Hub	4,842	10,601,332	291,458	397,829	44,857	291,532	57,902	14,935	S	244,031	428,530	93,351	277,490	83,134	S	17
Kentucky	27,498	5	Ports	UPS Hub	3,040	8,249,830	189,390	336,341	131,293	159,849	106,722	32,887	23	159,694	266,383	63,269	166,233	28,776	30,215	66
Louisiana	16,692	6 / Mississippi Rail Gateway	Ports		3,642	7,847,325	139,843	495,703	10,590	130,369	29,927	220,917	5	159,495	561,053	253,014	131,068	33,355	266,795	15
Maine	8,408	0	Ports		1,293	1,118,787	32,355	32,121	15,140	26,660	3,735	S	21	29,237	25,955	6,791	22,561	1,898	S	2
Maryland	5,136	2	Ports		3,589	4,635,726	121,356	165,399	154,321	157,023	4,499	S	20	151,521	188,575	33,254	149,546	32,710	1,578	39
Missouri	32,446	5 / Mississippi Rail Gateway	Ports		5,063	9,216,811	185,392	254,827	41,341	189,434	31,118	S	65	177,887	237,221	74,033	169,686	46,526	S	45
Ohio	19,292	4	Ports	Rickenbacker (cargo airport)	7,459	15,546,563	494,278	546,095	54,491	387,982	72,295	24,486	124	413,206	584,902	144,749	367,477	90,881	50,244	96
Virginia	57,323	2	Ports		4,955	7,137,609	164,557	268,935	154,321	216,324	45,359	1,947	38	198,879	273,849	53,122	225,657	38,564	2,452	30
Washington	7,048	2	Ports		4,399	7,592,392	177,395	259,594	3,623	159,578	26,931	S	205	223,300	248,558	65,229	163,656	37,491	13,941	194

## **3.0 Case Studies**

After consult with the Tennessee Department of Transportation, five case study states were selected for a freight planning “best practice”. The states that were selected include Florida, Indiana, Kentucky, Maine, and Virginia.

These states each have one or more freight planning components similar to Tennessee, such as modal challenges or institutional framework. Also, because Tennessee borders eight other states, these neighbors shares a significant amount of freight traffic with each other and may be facing similar freight planning issues. Neighbor states were profiled to explore these common issues, as well as begin the dialog on freight planning across jurisdictional lines.

Information has been collected based on review of the agency’s website, interviews of select freight planning staff at each agency and previous consultant experience with the freight planning efforts of the state.

### **3.1 CASE STUDY: FLORIDA DEPARTMENT OF TRANSPORTATION**

#### **Organization**

The Florida Department of Transportation (FDOT) builds and maintains the State Highway System and has an increasing role in ensuring access to major ports and terminals. Freight planning activities are spread across the Seaport, Rail, Aviation, and Systems Planning Offices. The Systems Planning Office includes the Strategic Intermodal System (SIS) Office. The Seaport, Rail, and Aviation Offices develop their own respective modal plans. The SIS Office is responsible for development of the SIS Plan which designates regionally significant networks.

The Seaport, Rail, Aviation, and SIS Offices are responsible for bringing freight issues to the attention of senior DOT staff. Due to the importance of seaports to Florida’s freight activities, the Seaports Office has been a strong advocate for freight issues throughout the state. The office has also led the development of the statewide freight plan. Day-to-day freight planning is the responsibility of the staff of the Seaport, Rail, Aviation, and SIS offices.

#### **General Freight Issues**

Florida’s extensive network of airports, seaports, rail lines, and highways make intermodalism and interconnectivity two of its most important freight issues. Goods delivered to ports in Florida are distributed throughout the state via truck or rail. A port’s capacity is directly dependent upon the availability and efficiency of the highway and rail network that connect to the port. Truck

parking is also a major issue, especially in south Florida. A number of trucks require parking facilities while waiting to receive goods at a port. A shortage of parking facilities creates unsafe conditions for truckers and other motorists. From an operational perspective, truck enforcement is a major issue. The state is working to increase the use of technology such as weigh in motion to enforce truck weight limits with the least interruption to the flow of traffic.

## Freight Planning Activities

Recent freight planning activities conducted by the department include:

- *Trade Corridor Study – Phase 1 (2001)* – identified recommendations for eight Trade Corridors in Florida
- *Latin American Trade and Tourism Study (LATTS) (2000 & 2002)* – southeast region-wide study identified major truck volume highway corridors as well as major airports, seaports, and rail facilities.
- *Freight Network & Modal Linkages System Phase II (2003)* – the second phase of the Trade Corridors Study clearly identified what facilities are included in the recommended trade corridors. Freight movements along the identified corridors were also identified.
- *Florida Statewide Intermodal System Plan (2000 - present)* – developed and identified a Strategic Freight Network and expanded the focus to identify a Strategic Passenger network. The networks are called the Strategic Intermodal System (SIS). The SIS is a network of transportation facilities and services of statewide and inter-regional significance providing for smooth and efficient transfers for both passengers and freight. The Strategic Freight Network consisted of all Florida Intrastate Highway System facilities, other State Highway System roadways with 20 million tons of freight or more annually, railroads, seaports, seven major cargo airports, major freight terminal connectors, and major truck freight terminals.

The SIS Strategic Plan redefines the state's primary role in transportation, advances a multimodal approach to planning, links the state's transportation planning and investment decisions to statewide economic policies, and shifts from reactive to proactive planning of future transportation investments. The SIS Strategic Plan developed a process for determining which SIS investments will be funded by FDOT and its partners. The process is divided into three stages. The DOT and its partners develop a long-term SIS Needs Plan that identifies all future needs without regard to available funding. FDOT and its partners gather detailed information on each proposed investment and projects are prioritized to comprise the SIS Cost Feasible plan. This plan has both 10- and 20- year components. FDOT selects projects from the prioritized list for funding in its 5-year work program. This process provides state funding opportunities

for all modes and encourages the DOT to work closely with its public and private sector freight community to identify projects.

- *Florida Freight and Goods Mobility Plan (2004 - 2008)* - a collection of documents developed to identify key bottlenecks around freight hubs and provide recommendations for further freight program development and implementation.
- *Florida Rail Plan (2008)* - will provide important baseline data on system conditions and system needs, roles and responsibilities of the various partners, and will lay out important policy choices regarding the critical issues of funding and priority setting. It also will set the stage to provide policy input to the updates of the Florida Transportation Plan (FTP) and the Strategic Intermodal System (SIS) Plan.

## **Statewide Freight Plan**

The Florida Freight and Goods Mobility Plan serves as the state's freight plan. The plan was developed using consultant support on a task order system. The consultant costs totaled approximately \$400,000. The tasks have been completed and the final report is being reviewed and will be released by August 2008.

The plan contains the state's freight program goals and objectives, outlines an existing freight profile, and discusses the physical system and operational characteristics of each mode. The development of the plan was an evolutionary process greatly influenced by the SIS. It is likely that future statewide freight plan updates will be integrated with the SIS. Tasks and deliverables included:

- Florida Freight Data Clearinghouse - provides information to the private sector and Florida MPOs on goods movement in the state.
- Seaport Strategic Investment Framework
- South Florida Inland Port Feasibility Study
- Evaluate Florida's 14 Deepwater Seaports' Economic Performance and Return on Investment of State Funds
- Global Trade Trends: Challenges and Opportunities for Florida's Ports
- Florida's Seaports: Conditions, Competitiveness, and Statewide Policies

## **Outreach to External Transportation Planning Agencies**

Florida's MPOs are very active in the freight planning process. Many of the MPOs conduct their own freight planning studies. The Miami and Jacksonville MPOs have active Freight Advisory Committees. District DOT staff are highly involved in MPO freight planning efforts. The modal offices share information regarding statewide freight studies and work to integrate MPO freight work into statewide plans.

Florida is active in joint freight planning activities with neighboring states. The state has actively participated in the Latin America Trade and Transportation Study (LATTS), the National I-10 Freight Corridor Study, and the I-95 Coalition. The DOT is currently participating in an update and continuance of LATTS II. The study will develop a workable monitoring process for tracking the results of proposals implemented in LATTS I.

### **Outreach to Non-Transportation Planning Agencies**

Private sector freight stakeholders participate in freight planning activities through the SIS Advisory Committee. The committee includes representatives from truck, rail, air, waterways, parcel delivery, and freight dependent industries. Freight stakeholders play an important role in the project identification process. Several advisory committee structures have been utilized over the years. The Freight Stakeholders Committee, Fast Track, and Transportation Outreach Program are examples of stakeholder groups charged with selecting freight-related projects for funding in Florida.

The Florida Statewide Intermodal Transportation Advisory Council (SITAC) is currently inactive. Initial responsibilities of the SITAC were to coordinate with the Florida Transportation Commission on the development of a mandated assessment of regional transportation in Florida, and to provide input on the initial draft strategic plan for the SIS. The department continues to involve the organizations SITAC members would represent in implementation of the SIS.

The state's Chambers of Commerce are not actively involved in the department's advisory groups. The DOT has however incorporated findings from several chamber reports into its freight planning documents. The state's economic development agency is actively involved in freight planning activities. The agency is a member agency on the Seaport Council. The economic development agency is also involved in SIS planning activities.

### **Data/Analytical Tools**

Florida's truck count data is provided in annual average daily traffic (AADT). Actual AADT and other traffic adjustment data are collected from permanent, continuous counters. AADT and truck percentages are estimated for all other locations using portable counters. Counts are available for Florida's state highway system. Truck percentages for local roads are not readily available and are collected on a project-specific basis.

The DOT purchased TRANSEARCH base year data for the statewide Goods and Mobility Study. The FAF2 projections were used to develop forecast data. A limited number of roadside truck origin-destination surveys are collected by the Systems Planning Group. Most origin-destination data are collected on a case-by-case basis. Establishment surveys and stakeholder interviews have been collected in a number of district level planning studies. The modeling group is in the process of disaggregating FAF2 data for use in the state's travel demand model.

## **Recommendations**

FDOT credits a great deal of its success in freight planning to the development of partnerships and high-level commitment to its SIS concept. The SIS has raised the visibility of freight issues in recent years. The SIS concept represents a major shift in how the Florida DOT identifies, plans, funds, and implements transportation improvements throughout the state. Freight planning efforts need a champion to raise the issue and obtain the support needed to implement freight projects. The SIS has been successful in part because of the commitment of DOT management. FDOT engages its partners in the freight planning process. Develop partnerships with other public sector agencies, local and regional governments, interest groups, and key freight stakeholders. Engaging these groups throughout the process helps ensure that the freight projects implemented meet the needs of the DOT as well as its key customers.

## **3.2 CASE STUDY: INDIANA DEPARTMENT OF TRANSPORTATION**

### **Organization**

The Indiana Department of Transportation (INDOT) has recently reorganized its structure and has placed freight functions within the Long Range Planning Office. Previously the Office of Freight Mobility was linked to operations staff, offering little opportunity for interaction with the planning of projects that impact goods movement at early stages of project development. While the Office of Freight Mobility is now slightly removed from operations in the organizational chart, the staff that leads the office is pro-active and ensures that there is a dotted line from freight to other departments. The DOT Commissioner has an active interest in freight and the Office of Freight Mobility provides regular updates to upper management on progress. All information on freight reaches other divisions through regular interaction with roadway administrators, local funding offices, public affairs, and operations. The Office of Freight Mobility also interacts with the states air and rail modal divisions.

The INDOT Office of Freight Mobility has just one staff member. While this may appear small given the amount of work Indiana is pursuing, office efforts are augmented by up to four long-range planning staff, a modeling manager, and a statewide economist. All of these individuals value the importance of freight, and cooperate on freight projects. The lead staff for the Office of Freight Mobility has a trucking logistics background and provides a compliment to the traditional planners that also work on freight at INDOT.

### **General Freight Issues**

Indiana is at the crossroads of the Midwest, and focus of the freight program has been to keep up to date with traditional highway mobility improvements to

ensure the state is not a supply chain chokepoint. While the state has solid highway infrastructure, it views their weakest link as lack of good direct rail connections, especially intermodal connections. Proximity to the Chicago rail gateway has left Indiana a freight pass-through state for both truck and rail traffic. Work is underway to improve rail connections within Indiana, including development of three potential intermodal yards, tracking the CN/EJ&E railroad acquisition, and review of rail relocations to support project development.

While INDOT has not been actively involved in water freight, they are aware that the mode is under utilized and measures should be taken to improve the waterborne freight system, particularly for use in Ethanol and agricultural related supply chains. River locks are in need of repair and there is concern for Lake Michigan ports as water levels are down and traffic is limited due to seasonal restrictions on the St. Lawrence Seaway. Further issues are expected to be identified as part of the on-going statewide Multi-modal Freight and Mobility Plan.

## Freight Planning Activities

Recent freight planning activities conducted by the department include:

- *Transport Flows in the State of Indiana: Commodity Database Development and Traffic Assignment (1997)* - this study was undertaken with the objective of creating a database of commodity flows into and out of the counties of Indiana and to allocate this commodity traffic to the state's transportation network.
- *Intermodal Management System Study (1997)* - this study focused on developing transportation improvements to link intermodal facilities to Indiana's portion of the National Highway System. The study identified 41 intermodal facilities of national or statewide significance, evaluated and prioritized deficiencies and developed actions and strategies to improve the overall performance of Indiana's transportation system.
- *Indiana Rail Plan (2002)* - this study detailed the importance of the state's rail freight system to Indiana's economy and the need to capitalize on the benefits and address the challenges associated with the state's rail industry.
- *INDOT Market Research Project, Perspective on Freight Stakeholders (2004)* - this research identified concerns of major shippers and carriers for consideration in the statewide planning process, and provided initial recommendations to INDOT regarding the integration of freight and goods mobility issues in the statewide plan.
- *Freight Flows of Indiana (2006)* - this is an update to the 1997 *Transport Flows in the State of Indiana* study. This project used 1997 commodity flow survey data to create a model for estimating the production and attraction of freight flows in Indiana for 2015 and 2025.

- *Indiana Multi-modal Freight and Mobility Plan (in process)* – The Indiana Multimodal Freight and Mobility Plan is being developed to direct Indiana’s future freight policy, provide a framework to guide future decisions regarding freight transportation investments, and ensure the efficient use of resources to support system wide objectives. In addition to looking at the current and future freight flows and the needs of current users of the system, the plan will also identify economic development opportunities related to the enhancement of Indiana’s freight infrastructure. The plan is being developed to support INDOT’s long-range transportation planning processes.
- *I-70 Dedicated Truck Lanes (in process)* – Indiana, as the lead states, was selected as one of 6 “Corridors of the Future” projects. This multi-state study covers over 800 miles and involves participation by Ohio, Indiana, Illinois and Missouri. This projects feasibility study will soon be initiated.

As Indiana has recently made great strides with their funding program through lease of the Indiana Tollway, more and more projects that impact good movement have the active involvement of the Freight Office, including those that are not traditionally considered “freight projects.” While the Freight Office does not manage these projects, the office has a voice and is at the table as decisions are made.

- *I-69 Coalition*; IN is currently building new highway for freight movement, TN still in the feasibility study. IN would like to help with advice to TN because they are ahead of the game. Goal to get to Canada and Mexico.
- *Rebuilding US 24 to Toledo, OH – “major moves”* – cross state boundaries. More and more projects are outside state lines. – expect fed funds to fall in corridor buckets.
- *Illiana Expressway*; Indiana and Illinois partnership on study to develop an “outer-outer” loop road. There is much political opposition. The hope is to get Michigan into the dialog. Major impact on freight movement as it is one of the biggest congestion points in the US.

## Statewide Freight Plan

Indiana Multi-modal Freight and Mobility Plan will serve as the state’s freight plan. The plan is being developed using consultant support, selected through a competitive qualifications based selection process. The consultant costs are scoped to total \$420,000, and are being funded through with Strategic Planning Research (SPR) dollars. The INDOT oversight team includes staff from the Office of Freight Mobility, the Long-Range Planning Office, and the Office of Rail.

Expected to be complete in January 2009, the study is being developed to direct Indiana’s future freight policy, provide a framework to guide future freight

investment decisions, and ensure the efficient use of resources to support system wide objectives. The scope of work includes the following major tasks:

- Initialize coordination and outreach with public and private sector stakeholders;
- Assemble available information on multimodal freight supply and demand;
- Identify information gaps and obtain additional freight information;
- Develop freight forecasts through the year 2035;
- Develop statewide economic and industry profiles;
- Profile the freight system condition and performance;
- Profile the existing and proposed passenger rail systems for the rail plan;
- Identify existing policies and issues impacting freight mobility;
- Identify freight transportation gaps and needs;
- Establish methodology to evaluate and prioritize freight projects;
- Explore potential funding sources;
- Establish implementation and action plan; and
- Prepare final reports: *Multimodal Freight and Mobility Plan and Rail Plan*.

While several of the initial project tasks involve updating basic freight flow information, the latter tasks begin to explore new ground for Indiana, including the investigation of enabling legislation for public-private-partnerships, evaluation of fuel and sales taxes and their use toward freight projects, as well as investigation of other potential funding streams.

### **Outreach to External Transportation Planning Agencies**

Indiana Metropolitan Planning Organizations (MPOs) meet monthly to discuss planning issues that affect them all, including freight. INDOT has a seat at the table during these discussions and ensures that the MPOs have a voice in state freight planning efforts. As part of the statewide freight plan, extensive outreach was conducted with non-INDOT transportation stakeholders, including the MPOs. Eleven of Indiana's fourteen MPO's were interviewed as part of process.

Indiana sees the future of freight planning relying on coordination with transportation counterparts in neighboring states, and is leading or partnering several on-going projects. Examples of these include: I-70 Truck Only Lanes Corridor of the Future Project with Ohio, Illinois and Missouri; Illiana Expressway with Illinois; and US 24 "Fort to Port" with Ohio.

Indiana is also active in the Mississippi Valley Freight Coalition, research oriented group of 10 states in the northern Mississippi Valley, who cooperates in the planning, operation, preservation, and improvement of transportation

infrastructure in the region including interstate corridors, rail infrastructure, and inland and Great Lakes waterways. Similarly, with a greater transportation focus, but also including freight, Indiana is active in AASHTO's Mississippi Valley Conference.

### **Outreach to Non-Transportation Planning Agencies**

INDOT has worked to actively engage non-transportation agencies on the importance of goods movement issues. A good example of INDOT thinking outside of its boundaries is the formation of the Indiana Logistics Council. This group began with discussions between INDOT, the Secretary of Commerce, Department of Revenue, Department of Agriculture, Department of Energy, and other state agencies because of overlapping issues. These groups developed a joint partnership and began to include participation by private sector stakeholders. This group has spun off into the Central Indiana Corporate Partnership with membership of the largest 100 manufactures in Indiana. The Logistics Council still convenes, with a variety of public and private stakeholders at the table, to addresses infrastructure priorities, public policy and other issues supporting the common vision of moving freight in Indiana.

Another effort INDOT has led for several years is the annual logistics summit. INDOT partners on with Indiana University and Purdue to convene this 2-day event that draws between 400 and 500 leaders from industry, academia, public policy, and government to discuss securing Indiana's place in the freight supply chain.

### **Data/Analytical Tools**

Indiana continues to work on improving the data available for freight analyses, therefore in the interim the state relies on Highway Performance Monitoring System (HPMS) data and Freight Analysis Framework (FAF2) data for much of freight related studies. While the state has automatic traffic counters in place, the truck classification portion of the county is currently being refined to be more accurate.

Earlier in the year, the statewide model had been refined to include productions and attractions for commodity groups; however the model is so new that at this time the state does not have experiences to share with respect to the ease or usefulness of the model. Previous to development of this model Indiana used the Quick Response Freight Manual to estimate freight system demand.

### **Recommendations**

The INDOT freight program has gone through reorganization and with the restructuring has created a niche within planning that touches all arms of the department. Key to the success of the Office of Freight Mobility that has been hiring a lead staff with a logistics background, bringing strength and credibility to the program that enables productive engagement with the private sector.

Another key to the success of INDOT's program is the active involvement and attention the Commissioner gives to the program through regular dialog with the freight staff.

INDOT is setting the bar high for others states, and is leading multi-state coalitions with confidence. More and more studies being pursued by INDOT involve their neighbors, and INDOT recommends that all states open the conversation on teaming to solve freight problems with cost effective solution, together. INDOT also recommends seeking the input of private sector stakeholders through regular meetings or a state sponsored "freight summit."

Despite lack of "good" data (e.g. classification counts, TRANSEARCH information, etc.) Indiana is making progress with respect to freight studies, and moving significant projects forward to construction. However, the state admits that some of the success is due to having leased the toll road; \$3.8 B can make a lot of projects happen.

### **3.3 CASE STUDY: KENTUCKY TRANSPORTATION CABINET**

#### **Organization**

The interviewees providing information on freight planning activities in the Kentucky Transportation Cabinet were Lynn Soprowski and Jeremy Edgewater. Ms. Soprowski is the Branch Manager of Modal Programs. Mr. Edgewater reports to Ms. Soprowski and serves as the designated Freight Coordinator for the state. Other responsibilities of the Branch Manager of Modal Programs are traffic forecasting and modeling, regional air quality conformity and congestion management. The Branch Manager works with the nine Metropolitan Planning Organizations in the state, the 4 Traffic Management Centers and 15 local government agencies that administer transportation programs. The Branch Manager of Modal Programs reports to the Director of the Division of Planning who in turn reports to the Office of Program Development. The head of the Office of Program Development reports to the KTC Commissioner who in turn reports to the Secretary of Transportation for the state.

Freight planning activities are conducted through various departments. Air cargo planning activities occur at the Department of Aviation which is separate from the Modal Programs Branch. Rail planning and truck planning occur within the Modal Programs Branch.

#### **General Freight Issues**

Based on information collected during the interviews, the primary freight issues include truck parking and truck bottlenecks. However, it is felt that a full-fledged statewide freight planning effort would be needed to identify the full range of freight issues that exist in the state.

## Freight Planning Activities

The Kentucky Transportation Cabinet is currently required to perform the following activities associated with freight:

- Review public riverport applications;
- Provide oversight on development activities involving riverport authorities;
- Send out and review railroad annual reports;
- Utilize the FHWA Highway Performance Monitoring System;
- Develop a statewide transportation plan;
- Report coal haul tonnages; and
- Review highway routes for the National Truck Network

There are five freight-focused documents that KYTC has produced recently. These include:

- *Kentucky Statewide Aviation System Plan (1998)* - This plan provides a guide for developing, maintaining, and promoting airports in Kentucky, with an emphasis on General Aviation Airports. This plan, which recommends airport development projects over a 20-year planning period, is updated on a ten-year cycle.
- *Freight Commodity and Intermodal Access in Kentucky (1999)* - The primary objectives of this project were to further the understanding of freight flows throughout Kentucky and to make recommendations on the potential value of freight commodity flow data as an input for statewide transportation planning models.
- *Kentucky Statewide Rail Plan (2002)* - The KYTC Statewide Rail Plan was developed under the authorization of a legislative mandate. The rail plan covers freight and passenger rail movements and includes chapters on rail issues such as rail safety, the rails to trails program, and recommendations to preserve the rail system, support economic development, strengthen customer relationships, and enhance rail system safety and convenience.
- *Kentucky's Public Riverports and Waterways (1999)* - This report documents Kentucky's inventory of inland waterway facilities and describes the amount and commodities of goods moved via water, describes deficiencies, and identifies possible solutions to address deficiencies across the state. The plan also describes the support provided to riverports in other states as compared to the support provided by the State of Kentucky. Through these descriptions, the plan described the strengths, weaknesses, opportunities, and threats attributed to each riverport. KYTC plans on developing a website for each of the public riverports to assist with

marketing of the riverport services and to serve as an information clearinghouse for riverport activities at each location.

- *Annual Rail Report (updated annually)* - The Kentucky annual rail report is mandated by state law. The report tries to determine the value of goods moving on the state's rail infrastructure. The report also describes shortline rail lines that are in operation and the companies that operate the shortline railroads. Additionally, the report develops GIS-based maps of abandonments and proposed abandonments.

## **Statewide Freight Plan**

In 2006, Kentucky developed a Statewide Intermodal Freight Plan. This plan was prepared by internal staff and was updated as recently as August 2007. The primary goal of Kentucky's Statewide Intermodal Freight Plan was to facilitate the safe and efficient movement of goods and freight through Kentucky in an environmentally and fiscally responsible manner. The report provides background information on statewide freight planning activities, describes the Freight Focus Road Network for the state, and maps truck percentages and level of service on this network.

The plan also includes a description of Kentucky's top commodities based on weight and value from information collected from the FHWA Freight Analysis Framework (FAF2) database. The freight flows section includes a description of the distribution of goods movement by mode for flows within Kentucky, external flows and internal flows also based on the FAF2 data. These flows are also provided by weight and value.

The statewide plan includes a chapter that identifies the freight facilities for each of six modes: riverports, waterways, airports, highways, rail, and intermodal connectors. This is followed by a chapter on available resources at the state and national level of freight data and policy. Chapter six of the study describes freight needs in the state. These needs include data, particularly on intra-state and intra-urban area flows, and funding for rail and waterways projects.

Chapter 7 of the intermodal freight plan defines the freight focus network designed to focus state resources on the most significant transportation facilities and to eliminate bottlenecks that impede safe, efficient, and reliable transportation. This chapter recommends that a next step of this plan is to perform route and modal comparisons, so that there is an understanding of the best facilities to invest resources to reap the greatest benefit. Chapter 8 discusses project prioritization conceptually. Chapter 9 discusses freight funding options for the state. The tenth chapter is a summary of the plan. Although several topics are discussed in the plan, none are covered in great detail. KYTC staff feel that more detailed information and analysis will be needed to fully address the state's freight issues.

## **Outreach to External Transportation Planning Agencies**

If a city, county, or region of Kentucky is interested in developing a freight plan for their area, then the information from that plan is incorporated into the Statewide Intermodal Freight Plan. Presently, two metropolitan areas, Louisville and Northern Kentucky, are developing a freight component to their long range transportation plans. They have started by identifying truck percentages and large shippers in their areas. The Area Development Districts in Kentucky seek to include freight interests as part of their regional transportation committees. KYTC has offered to assist other agencies wishing to develop a freight plan or freight components of long range plans.

The KYTC also held a Regional Freight Conference in 2007. This conference brought together public and private sector representatives to discuss the importance of freight to the State, current projects that are being conducted by KYTC, and provided the private sector with a forum to express their perspective on the freight industry. The conference was attended by both the KYTC Commissioner and the FHWA Division Administrator. The sessions included in the conference and presenters included:

- National Perspective: SAFETEA-LU, New Freight Bills and Corridors of the Future
- Freight Analysis Framework – The Second Generation
- Private Sector Perspective by Wal-Mart Distribution Center
- What’s Going on in Kentucky
- Freight is a Priority in Kentucky, How Does KYTC Prove It
- Movement By Air – An Important Part of the Equation
- How Riverports Benefit Kentucky
- Statewide Freight Model
- Railroad 101
- Poised to Lead Kentucky into the Rail Renaissance
- New Technologies for Ensuring the Safety and Security of Commercial Vehicles and Freight
- Safety and Security
- Safety Awareness Program
- What’s New

KYTC has participated in several multi-state planning efforts including Institute for Trade and Transportation Studies (ITTS), Latin America Trade and Transportation Study (LATTS), the Midwest Freight Initiative, American Association of State Highway and Transportation Officials (AASHTO),

AASHTO's Standing Committee on Rail Transportation (SCORT), and AASHTO's the Mississippi Valley Conference. Additionally, staff from the KYTC sit on two of the teams for the ongoing National Cooperative Freight Research Program (NCFRP).

KYTC used to engage an Intermodal Advisory Committee, but that committee has been inactive for about 4 years. They also work with the Kentucky Trucking Association, the state's road builders, and the state police. The KYTC's Maintenance Office operates the state's weigh stations and rest areas. KYTC also has a rail intersection program that has developed a GIS-based network of railroad crossings in the state and incorporates passenger vehicle, truck, and railroad information as available.

### **Outreach to Non-Transportation Planning Agencies**

The private sector was invited to the Regional Freight Conference mentioned in the previous section. Additionally, the Kentucky Economic Development Cabinet participated in the Riverport Study and have been strong advocates for freight planning and for improving the state's freight infrastructure to assist with improving the region's economy. KYTC has also conducted site visits of several freight facilities to observe operations.

Some of the input that they received from the general public has included the need for public rail systems, a ban on trucks on certain corridors during certain times of the day, and the allowance of triples and piggybacks in the state to save on fuel.

KYC staff plans to attend the Mid-America Truck Show which is held annually in Louisville, KY. There are also plans to have the next KYTC Transportation Conference at the same time as this annual show. KYTC has distributed 10,000 visor cards on truck safety from its previous efforts and it plans to distribute more cards at the annual truck show.

### **Data/Analytical Tools**

Kentucky has developed a statewide travel demand model that includes a freight component, and they have also purchased the Commodity Intermodal Management System (CIMS) freight flow data analysis tool to assist in analyzing TRANSEARCH commodity flow data. KYCIMS has the capability to evaluate demands on infrastructure, analyze multiple modes concurrently, identify modal deficiencies, and identify multimodal opportunity. It also provides an interface between the travel demand model and the freight flow data and allows of developing , mapping and analyzing alternative freight scenarios.

Additionally, the Intermodal Freight Plan provides a list of available data for the state including:

- Vehicle classification data
- Traffic count data that include truck percentages

- Crash data by vehicle type, accident type, severity and location
- Coal haul tonnages as submitted in an annual report to FHWA

The other data mentioned in the statewide intermodal plan were national data and private data such as FAF2, STB Rail Waybill Sample data, TRANSEARCH data, the 2002 Commodity Flow Survey, and the 2002 Vehicle Inventory Survey. It should be noted that there is a state law in Kentucky that prohibits stopping trucks and conducting roadside truck surveys. KYTC staff feel that more data on truck activity is needed, particularly on growth rates and truck bottleneck locations.

### **Recommendations**

Through the planning the freight planning that the Kentucky Transportation cabinet has conducted, they have been able to elevate the importance of freight and to state and have incorporated ways for goods movement projects to move forward. The state has revised its project prioritization process, so that projects that fall within identified freight corridors are given extra points during the prioritization process. Similarly, projects that have a general “freight focus” are given additional points.

While moving projects up in the ranking during prioritization is helpful, it does not count for much if dedicated freight project funding is unavailable. The Cabinet recommends developing a dedicated funding source to support freight planning.

## **3.4 CASE STUDY: MAINE DEPARTMENT OF TRANSPORTATION**

### **Organization**

Prior to 1996, Maine DOT’s Bureau of Transportation Services maintained individual divisions for the highway, rail, transit, water, and air modes. To address freight transportation issues more holistically, Maine DOT dissolved the Bureau of Transportation Services and divided its responsibilities between the Offices of Freight and Passenger Transportation Services.

The Office of Freight and Business Services is charged with developing a free-flowing intermodal freight network and creating policies, programs, and projects to improve transportation operations in Maine. The Office of Freight and Business Services is divided into a planning section; a program management section; and a development/marketing section, which advocates new freight ideas and technologies and implements economic development strategies. The Director of the Office of Freight and Business Services is responsible for bringing freight issues to the attention of senior DOT staff and reports to the Deputy Commissioner of Policy, Planning, and Communications. The director also acts

as the official state freight coordinator by organizing freight planning activities across DOT divisions and departments. The Office of Freight and Business Services has seven staff members responsible for day-to-day freight planning.

The Office of Freight and Business Services, the Office of Passenger Transportation, and Bureau of Planning are departments of the Division of Policy, Planning, and Communications. The Office of Freight has a close relationship with the Bureau of Planning. They share data and collaborate on multimodal transportation studies. The Bureau of Planning conducts rail inventories and long range capital planning. They do very little port planning. The Planning Bureau typically manages freight projects with the exception of the statewide Integrated Freight Plan. It is managed by the Office of Freight and Business. The Bureau of Maintenance and Operations maintains state programs like CVision and 300 miles of rail tracks. The Office of Engineering consists of a Multimodal Unit that designs and builds projects planned by the Office of Freight. This design section is separate from the highway engineering design section. Funding programs that support the Office of Freight and Business include capital planning funds, FMCSA funds, revenues from rail leases, STP funds (if highway project qualifies for 130 rail crossing program funds, and rail operations budget for public rail operations. The port authority operates from some public-private-partnership revenues (leases).

## General Freight Issues

Truck weight regulations, rest area infrastructure, energy prices, back-haul loads, and funding are major concerns of the freight community. Under existing federal regulations, trucks over 80,000 pounds are barred from traveling on the interstate highways. Maine regulations, however, allow trucks operating off the interstates to weigh up to 100,000 pounds. The diversion of trucks over 80,000 pounds to state and local roads contributes to pavement consumption and raises safety concerns in the impacted communities. Maine-based shippers are concerned with the lack of rest areas suitable for trucks. Back-haul loads are another major freight issue. Maine produces more goods than it consumes. This creates a significant number of “deadhead” miles being traveled within the state.

## Freight Planning Activities

Recent freight planning activities conducted by the department include:

- *Heavy Haul Truck Network Study (2001)* - developed planning criteria for selecting projects to improve the safe and efficient flow of truck traffic on this identified network. These criteria will help MDOT planners to identify and prioritize potential projects when developing future transportation programs.
- *Mid-Atlantic Rail Operations Study (2001)* - a joint initiative of the I-95 Corridor Coalition and three railroads to document existing demographics, economic conditions, transportation facilities, passenger and freight flows,

etc. in the study area. The study also defines a three-phased program of improvements to eliminate key rail choke points across the five-state study region.

- *I-95 Corridor Coalition Intermodal Strategic Plan (2001)* – developed strategic plan for the Northeast Corridor including all transportation modes and focusing on the intermodal movement of goods and people throughout the region
- *Maine Integrated Freight Plan (1998 & 2002)* – provided updated statewide freight profiles, built relationships with public and private freight stakeholders, and recommended specific freight improvement projects and changes to the Maine freight planning program.
- *Commercial Vehicle Service Plan Project (2003)* – identified existing truck parking facilities and developed guidelines and recommendations to combat truck parking shortages.
- *Study of Impacts Caused by Exempting the Maine Turnpike and the New Hampshire Turnpike from Federal Truck Weight Limits (2004)* – examined the economic, safety, and infrastructure impacts of exemptions by modeling how changes in weight policy would affect travel patterns of 5-axle and 6-axle tractor-semi-trailer trucks moving heavy commodities.
- *Study of Impacts Caused by Exempting Currently Non-Exempt Maine Interstate Highways from Federal Truck Weight Limits (2004)* – used numerous data sources to model how changes in weight policy would affect travel patterns of 5-axle and 6-axle tractor-semi-trailer trucks moving heavy commodities.
- *A Feasibility Study for an Integrated Freight Monitoring System – Phase 1 (2006)* – utilizes technology and operational solutions through the design of a prototype geospatial display and decision support tool designed to assist Maine DOT in efficient use of intermodal resources, enforcement of commercial vehicles, and compliance with border cargo security requirements.
- *Mountain Division Rail Study: A Report on Potential Users and Implementation Costs (2007)* – investigated the presented condition, potential use of and probable implementation costs for freight and/or passenger services on the 50 mile Mountain Division Rail Corridor within Maine and a 10 mile segment within New Hampshire.
- *Calais-St. Stephen Border Crossing (in process)* – Maine DOT and NBDOT have been collaborating, along with the U.S. General Services Administration, the Canada Border Services Agency, and the U.S. Department of Homeland Security’s Customs and Border Protection to plan and design new border crossing facilities in Calais, Maine and St. Stephen, New Brunswick. Maine DOT and NBDOT are responsible for the highways leading into the facilities as well as the bridge across the St. Croix

that connects the two countries. CBSA will design and construct the Canadian facility and GSA will design and construct the United States facility based on input from the CBP.

- *I-95 Corridor Coalition Phase II of Rail Operations Plan (in process)* – The I-95 Corridor Coalition is identifying regional investments to improve rail corridors in the region. The plan will identify infrastructural needs and assess the cost of such improvements.
- *Maine Integrated Freight Plan ((in process))* – The updated Integrated Freight Plan will identify infrastructure recommendations for the next 5 years. The plan will also include an updated freight profile and trends identified by the freight stakeholder surveys.
- *Statewide Rail Plan (in process)* – Maine DOT is developing a Statewide Rail Plan to address passenger and freight rail needs. The Office of Freight and Business Services is teaming with the Planning Bureau to develop the plan.

## **Statewide Freight Plans**

Maine's Statewide Freight Plan was conducted in 2002. A plan update is currently underway and is expected to be complete in late 2008. A number of internal DOT offices and stakeholders including Planning, Project Development/Engineering, Policy, Energy and Security, the Governor's Office of Highway Safety, Marine Resources and Construction provided input into the plan. The Maine MPOs, rail companies, rail advocacy groups and the Maine Motor Transport also participated in the development of the plan. The plan was developed in a single phase that involved stakeholder interviews and surveys and data analysis.

Consultant support was used to develop the 2002 freight plan and the 2008 plan in progress. The consultant support was solicited as a task-specific request for proposals (RFP). The 2002 plan was developed at a cost of \$100,000. The department performed a great deal of the legwork itself. The plan was developed in a 9 month period, though the 2008 plan has been in development for 2 years due to delays.

## **Outreach to External Transportation Planning Agencies**

Freight planning activities conducted by the four MPOs in Maine varies. The Bangor and Portland MPOs do active freight planning. The Portland MPO has a freight plan though its contents are limited to their staff capabilities. The Bangor MPO conducted a Truck Route Study for the region in 2007. The Androscoggin and Kittery MPOs conduct limited freight-related planning activities. The extent of their freight planning involves at-grade rail crossing safety and small freight-related rail and highway investments.

Maine has also participated in joint freight planning activities with its neighboring states. Maine is a member of the Eastern States Border

Transportation Coalition. The coalition addresses issues such as homeland security, small border crossings, and Canadian policies that affect their economy and goods movement. The Calais-St. Stephen Border Crossing project was a joint effort between the Maine DOT and the New Brunswick DOT (NBDOT). The Maine DOT and NBDOT have a long history of coordinating on major border projects and alternating lead responsibilities on border construction projects. For this project, the Maine DOT is leading the bridge design and construction for this project with funding provided by both agencies.

Maine DOT is also an active member of the I-95 Corridor Coalition. The I-95 Corridor Coalition is an alliance of transportation agencies, toll authorities, and related organizations, including law enforcement, from the State of Maine to the State of Florida, with affiliate members in Canada. The Coalition provides a forum for key decision and policy makers to address transportation management and operations issues of common interest.

### **Outreach to Non-Transportation Planning Agencies**

The Office of Freight and Business Services incorporates the private sector into freight planning activities by holding face-to-face meetings with industry groups. The Office of Freight and Business Services regularly gives presentations and hosts meetings to discuss freight issues with warehouses, parcel delivery, truck, rail, air cargo, and waterways. Governor Summits are freight stakeholder meetings held in the governor's mansion. Major shippers, railroads, motor carrier groups are invited to meet with the governor to discuss freight needs. Stakeholder surveys were also used to understand the private sector's view of freight challenges in Maine.

The Freight Transportation Advisory Committee (FTAC) was established to maintain strong relationships with private sector freight stakeholders. Due to conflicting groups, the council was disbanded. The DOT works independently with groups to develop freight planning activities.

The Maine Better Transportation Association (MBTA) (similar to a Chamber of Commerce) works closely with the DOT. The MBTA is very active in the legislative process, advocating for funding for roads and bridges, ports and rail facilities, airports and bicycle and pedestrian facilities. The department has a close relationship with MBTA and the current MBTA director is the former DOT Commissioner.

The Freight and Business Services Office works with the Maine Department of Economic and Community Development on technology transfer and shipper programs. The two agencies work together on develop programs and projects that address freight issues that have broad economic implications.

Other public agencies in that have freight responsibilities include the Maine Emergency Management Agency, the state Energy Office, and two small port authorities.

## **Data/Analytical Tools**

The Office of Freight and Business Services draws upon several data sources for freight-related data. The state's truck count data are a combination of hourly manual counts, weigh in motion (WIM) real-time counts, and estimates. The available counts are not sufficient for freight planning. To compensate for the shortage of truck count data, the department conducted a Heavy Haul Truck Permit Study.

TRANSEARCH base year and forecast data were used in the development of the statewide freight plan. Roadside truck origin-destination data have been collected in limited areas and for project-specific purposes. Adequate staff is not available to conduct detailed origin-destination surveys. Stakeholder surveys collect data on freight needs and challenges. The surveys also identify common origins and destinations. Freight customers provide information on commonly traveled routes and number of daily trips.

The department uses a cost allocation model to provide information for legislative presentations. A truck-rail diversion model has been purchased for use by the department. The department is interested in developing its own truck-rail diversion model and a model to forecast mode split for freight movements.

## **Recommendations**

Maine has successfully developed an organizational structure that supports freight planning activities. Creating an office specifically responsible for freight planning activities prevents freight goals and objectives from being diluted in the planning process. This arrangement also ensures that freight needs are heard in the highest levels and resources are committed to the proper modes.

Having a dedicated freight planning staff helps the department focus on freight issues and develop and maintain relationships with freight stakeholders. It is important to make sure that freight customers are heard and relationships with the freight community are nurtured.

Multi-jurisdictional or multi-state collaboration is important to freight planning efforts. Freight outcomes can be difficult to influence. Joining forces with surrounding states and jurisdictions brings attention to freight issues and provides a larger forum to mitigate problems.

# **3.5 CASE STUDY: VIRGINIA DEPARTMENT OF TRANSPORTATION**

## **Organization**

The freight functions at the Virginia Department of Transportation (VDOT) fall within the responsibility of the Multi-Modal Transportation Planning Office. However, in addition to freight planning conducted at VDOT, each freight mode

has its own stand alone office within the state and includes the Port of Virginia, Department of Aviation, and the Department of Rail and Public Transportation. Each of these modal offices conducts its own planning, and a Memorandum of Understanding has been put in place outlining the cooperation that is required between VDOT and these other offices. While the organizational structure may on the surface appear formal, when the MOU was developed it was done so with the intention of ensuring all modal groups were working to the same end goal. It is the responsibility of the Multi-Modal Transportation Planning Office to coordinate information from all modal groups. Information is also naturally shared through reporting structure, as each modal office lead reports to the Deputy Secretary.

VDOT does not have a formal freight office, nor any staff that have 100% of their time dedicated to freight. The department has several staff that spend part of their working on freight projects, in addition to other multi-modal planning topics.

### **General Freight Issues**

Virginia serves as an entry-way for goods transported overseas via the deep water ports on the Atlantic, as well as mid-point for traffic heading north or south along the coast; as such access and mobility are key issues. From the statewide freight plan numerous issues has also been identified, including:

- Safety and security, particularly for at-grade road-rail crossings.
- System preservation – ensuring railroads keep their market share so trucks stay off the highway.
- System modernization and capacity improvements.
- Public-private partnership opportunities – particularly for rail projects.
- Ensuring shortline railroads remain vital.
- Port accessibility and service.
- Passenger operations – to avoid negative impacts of freight and passenger system operating on the same rail lines.
- Multi-state coordination.

### **Freight Planning Activities**

Recent freight planning activities the department has conducted and participated in include:

- *I-95/I-395/Capitol Beltway Improvement Studies* – Numerous studies have been conducted in the last decade regarding this heavily traveled truck corridor. While most of the studies focused on passenger benefits, it is inherent that through improving conditions for passengers, similar benefits will be felt by the trucking community. Examples of the studies conducted

include: I-95 Corridor Study, I-95 Collector-Distributor Access Feasibility Study, I-95 Extension of HOV Lanes Study, Capital Beltway Study, and I-95/I-395 HOV Restriction Study.

- *Mid-Atlantic Rail Operations Study (2001)* – a joint initiative of the I-95 Corridor Coalition and three railroads to document existing demographics, economic conditions, transportation facilities, passenger and freight flows, etc. in the study area. The study also defines a three-phased program of improvements to eliminate key rail choke points across the five-state study region.
- *Virginia Statewide Rail Plan (2004)* – the report defines and conveys the magnitude of rail needs in the Commonwealth, and sets forth a policy framework for strategic actions to realize the full potential of Virginia’s passenger and freight rail systems.
- *I-81 Near-Term Safety Improvements and Corridor Improvement Study (2007)* - The Tier 1 Environmental Impact Statement (EIS) identified a wide range of potential approaches and strategies to address freight and passenger needs in the corridor, including the truck-only lane concept.
- *Virginia Statewide Multimodal Freight Study, Phase I (2007) and Phase II (in process)* - This is a two part study, with Phase I complete and Phase II in be completed by the end of 2008. Phase I used freight transportation and economic data to highlight existing conditions and future trends of both the transportation system and state freight industries. Phase II builds on this data and will develop strategies for future freight investments.
- *Route 460 Location Study (in process)* - Route 460 is an important freight route, particularly for access to the marine terminals at Hampton Roads. VDOT, is conducting a three-year study to consider future improvements to the route. A Final Environmental Impact Statement (FEIS) is being prepared to document impacts and benefits of the preferred alignment, and to respond to comments on the FEIS and discuss measures to mitigate impacts.
- *Hampton Roads Third Crossing Concept (in process)* - This project concept is to construct a third harbor tunnel in Hampton Roads. The proposed alignment would not only provide needed general-purpose travel capacity, but also substantially benefit freight movement to and from the marine terminals in the region. This is a major investment, with costs on the order of several billion dollars, and consensus has not been reached on whether or how it should advance.
- *I-95 Corridor Coalition Phase II of Rail Operations Plan (in process)* – The I-95 Corridor Coalition is identifying regional investments to improve rail corridors in the region. The plan will identify infrastructural needs and assess the cost of such improvements.

- *Heartland Corridor Double Stack Clearance Project (in process)* – VDOT has shown support for this project that involves upgrading an existing coal line with restricted dimensions to handle double-stack container traffic moving from the Virginia Port Authority west through Virginia and on to Chicago and its interchanges with the western Class I railroads.
- *I-664/Route 164 Median Rail (in process)* – Virginia has set aside right-of-way and is planning a seven-mile rail link to provide rail service to the future port developments. By providing port development with rail freight access, the project offers an alternative to truck-only service, benefiting port users (in the form of greater transportation choices and lower costs) and the surrounding transportation system (by reducing reliance on truck).

## Statewide Freight Plan

VDOT is in process of conducting their statewide freight plan; the Virginia Statewide Multimodal Freight Study. This is a two part study, with Phase I complete and Phase II in be completed by the end of 2008. Phase I used freight transportation and economic data to highlight existing conditions and future trends of both the transportation system and state freight industries; provide a freight system condition, performance, and need assessment; inventory programmed, planned and potential freight improvements; and conduct an I-81 truck-rail diversion analysis. Phase I also involved a considerable stakeholder coordination and outreach effort.

Phase II of this project builds on the findings of Phase I and will contain answers to the following fundamental questions:

- Given Virginia's projected freight needs, and given the improvements that are already in the planning stages, is it enough? Or will there still be critical deficiencies?
- What are the economic and transportation costs to Virginia of deficiencies? Conversely, what are the economic benefits of addressing them?
- What additional improvements – whether infrastructure, policy, or institutional – will be needed to meet Virginia's emerging and future needs? How will critical corridors and regions be affected?
- How will these improvements be funded? What are the fair and appropriate contributions of governments, and of the private sector?
- How should the Commonwealth approach freight planning on a consistent institutional basis, with its public and private sector partners?

Phase I of the plan was developed using consultant support, selected through a competitive selection process. The budget for Phase I totaled \$620,000 and the duration was 18 months. The Phase II study was a follow-on, and the consultant from Phase I was utilized for project continuity. The budget for Phase II totaled \$880,000 and the duration is expected to be one year.

This project relied heavily on input from all modal groups including the Port of Virginia, Department of Aviation, Department of Rail and Public Transportation and the Multi-modal Transportation Planning Office. Additionally, over 150 stakeholder interviews were conducted as part of the process and included a diverse cross section of public and private freight stakeholders.

### **Outreach to External Transportation Planning Agencies**

Virginia has stand alone divisions for each freight mode and this structure naturally requires the DOT to seek out the input of external transportation planning agencies through business-as-usual including the Port of Virginia, Department of Aviation, and Department of Rail and Public Transportation.

As previously stated, development of the statewide plan involved a significant number of interviews, including interviews with the private sector. As part of this process, VDOT sought out and strongly encouraged the participation and support of the states MPO's during these interviews in order to educate them on the private sector perspective. Additionally, VDOT tries to encourage freight planning at the MPO level and provides resources to enable them to do so. As an example, VDOT has purchased the TRANSEARCH database and has provided it, at no charge, to all Virginia MPO's.

Similar to Indiana, Virginia sees the future of freight planning relying on coordination with transportation counterparts in neighboring states. Virginia is leading or partnering several on-going multi-state projects including the I-95 Corridor Coalition and the I-81 Corridor Study.

### **Outreach to Non-Transportation Planning Agencies**

VDOT has actively incorporated the private sector into freight planning activities through the Virginia Freight Advisory Council (VFAC). The VFAC was developed to kick-off the statewide freight plan and has the active involvement of a small, select number of trucking, railroad, ports, and environmental interest groups. The group meets quarterly, and has been charged with providing oversight to freight plan. VDOT is considering whether or not to continue convening the group beyond the duration of the freight plan. The VFAC is co-chaired by the Director of the Multi-modal Transportation Planning Office and the Deputy Secretary of Transportation, underscoring the importance of this committee to the department. The group has been subdivided into subcommittees to tackle critical issues like the environment and technology applications. Each of these subcommittees is developing formal reports containing recommended actions for the state.

Again, similar to Indiana, Virginia sponsors open freight events, including an annual Virginia Transportation Conference. This conference was used to kick off Statewide Freight Plan and convened more than 100 freight stakeholders. Topics of the conference were diverse and included driver shortages, use of technology, the environment, and short sea shipping. While the state has been very active

with traditional public and private stakeholders, they are working to garner more involvement from economic development entities.

### **Data/Analytical Tools**

VDOT is in the fortunate position to have a significant amount available freight data, compared to other states. Truck classification counts are available both hourly and within 15 minute increments. While they have some Origin-Destination data, they are in the process of improving the data quality through two-minute O-D surveys conducted at weight stations. Right now they are in the pilot phase and are interviewing along I-81. Additionally they are investigating the possibility of conducting gate surveys at ports.

VDOT has obtained TRANSEACRH data for 2004 and 2035. This data was analyzed during Phase I of the to the statewide freight plan, and is currently being used to update the truck component of the statewide model. Additionally, an economic benefits tool is being added to the statewide model to help determine the impact of freight projects in the future, weigh projects against each other, and assess whether they are good investments.

### **Recommendations**

Virginia knew that stakeholder involvement in development of the statewide freight plan was crucial; therefore they created a vehicle by which the private sector could become engaged. The state used a “freight conference” to kick-off the statewide freight planning process to get all parties at the table, and identified a select group of these stakeholders to sit on the Freight Committee (VFAC). The VFAC has been energized through development of the Statewide Freight Plan, as well as through the leadership of the committee co-chairs that include the director of the Multi-modal Transportation Planning Office, as well as VDOT's Deputy Secretary.

Virginia notes that simple actions can yield big results. They have experienced success through simple actions like speaking with neighboring states and partnering on projects with them, sharing information and data with MPOs free of charge, and conducting relatively low cost studies (e.g. O-D surveys) that provide key data pieces. While Virginia has invested heavily in ensuring a complete, big-picture understanding of their transportation system, they have also not ignored the details and data required.

## **4.0 Conclusions and Next Steps**

As the Tennessee Department of Transportation begin to organize internally to initiate a broader range of freight planning studies, best practices from state case studies should be taken into consideration.

- **Champion:** Identify a high-level person within the agency to be an advocate for freight projects. Other agencies have been successful in their efforts because of the commitment and active involvement of DOT management, including the Secretary or Deputy Secretary of Transportation.
- **Dedicated Staff:** If possible, dedicate at least one person to focus on freight planning and coordination activities. Having dedicated staff can help keep the focus on freight issues while developing and maintaining relationships with freight stakeholders. It is important that there is a constant presence once the process of engagement has begun to make sure that freight customers are heard and relationships with the freight community are nurtured.
- **Engage Stakeholders:** Develop a mechanism to engage freight stakeholders, including those within the DOT, those within other state agencies, local and regional governments, MPOs, and private sector parties. Engaging these groups throughout the process helps ensure that freight projects implemented meet the needs of the DOT as well as its key customers. Suggestions include hosting a freight conference or convening quarterly freight advisory committee meetings.
- **Data:** It is recommended that prior to initiation of any studies, that the DOT get a handle on their freight system through data analysis. Good basic data is essential to conducting meaningful freight analyses, and a variety of sources are available free of charge, including that data garnered through interviews, Freight Analysis Framework (FAF2) data, Commodity Flow Survey, Highway Performance Monitoring System (HPMS) data, Census County Business Pattern data, Surface Transportation Board (STB) Rail Waybill Sample data, and many others. There also exists much good data that is available for a charge, including Global Insight's TRANSEARCH freight and commodity flow data and Woods & Poole's economic and demographic data.
- **Statewide Freight Plan:** Each case study state reviewed had conducted a statewide freight plan, and each conducted the plan with a varying level of cost and detail. While there is not set formula for what a freight plan must contain, at a minimum a plan should be developed to look at current and future supply (infrastructure), demand (freight flows), and "gaps" of the freight system. It is vital to establish a baseline with a freight plan, so that improvements to the freight system can be tracked. More and more, investments in freight are being considered economic drivers, and more and more freight plans are reviewing state economic structures, supply chains, and identifying how removing freight chokepoints can benefit specific industries. Policy and regulatory framework can also, often be a freight plan component.

- **Freight Funding:** The ability to move traditional highway projects from planning to design and construction are big drivers for a regions economy. And, typically those segments of traditional projects that contain high truck volumes rank higher in economic development potential than those with lower truck volumes. Likewise, non-traditional projects that enhance rail, water and air freight improve a regions economic development potential, however it is difficult to use traditional highway funds to support these projects. Therefore it is important to review to uses for non-traditional funding, and even look towards private sector to help fund freight projects.
- **Partner with Neighboring States:** Look outside the issues of your own state and begin to partner on projects with neighboring states who are likely facing similar challenges. Freight does not stop traveling at state lines; supply chains reach from coast to coast and overseas, therefore the planning to facilitate freight should look beyond borders. Work with neighboring states to team on solutions to common problems while sharing project costs.
- **See Freight Link in all DOT Projects:** Give freight planning staff the leeway to get involved in projects that have not traditionally been viewed as freight projects. Through this interaction all project stakeholders will begin to understand freights importance and how improving travel for passengers oftentimes also benefits freight.
- **No Step is Too Small if it is a Step Forward:** While many freight studies can be labor intensive and be costly, it is important to remember that simple actions can also yield big results. Be careful to not ignore the basic steps that can be taken to give a new freight program to a strong start, including getting to know the system by visiting intermodal and trucking terminals, collecting field data or conducting truck Origin-Destination studies, and picking up the phone to reach out to freight operators.