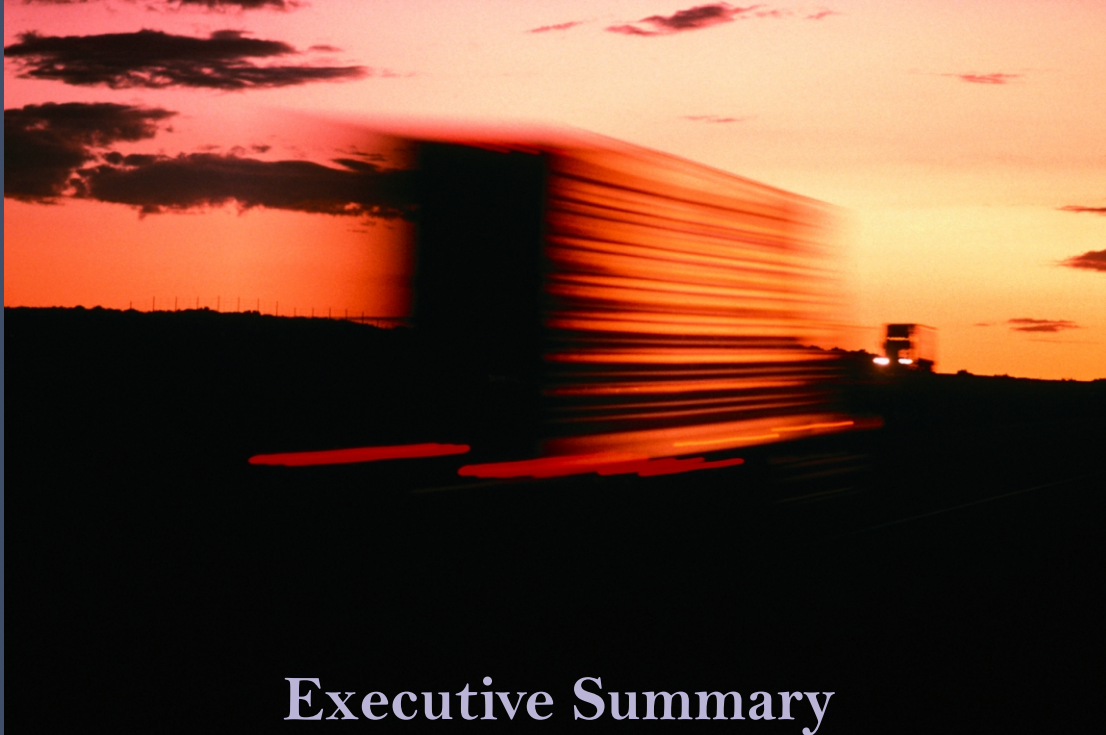


Roanoke Valley - Alleghany Regional Freight Study



Executive Summary

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RVAMPO/RVARC

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PREFACE

The Roanoke Valley-Alleghany (RVA) Region has a rich transportation history. Today, as a regional distribution and commercial hub, the region's future is predicated on an integrated, reliable and responsive freight transport system.

In October of 2001, the Roanoke Regional Chamber of Commerce held a "Transportation Summit", attracting more than 100 business and community leaders from western Virginia. The summit concluded with regional leaders urging a clear definition of the region's freight transportation goals and priorities. In response the Roanoke Valley – Alleghany Regional Commission (RVARC), in cooperation with the Roanoke Valley Area Metropolitan Planning Organization (RVAMPO) decided to conduct the *Roanoke Valley-Alleghany Regional Freight Study*.

The Freight Study is intended to translate information about business transportation needs in the RVA Region into recommendations for policies, strategies and projects that will keep the region's transportation system competitive in a global environment. Wilbur Smith Associates was contracted to perform four essential tasks:

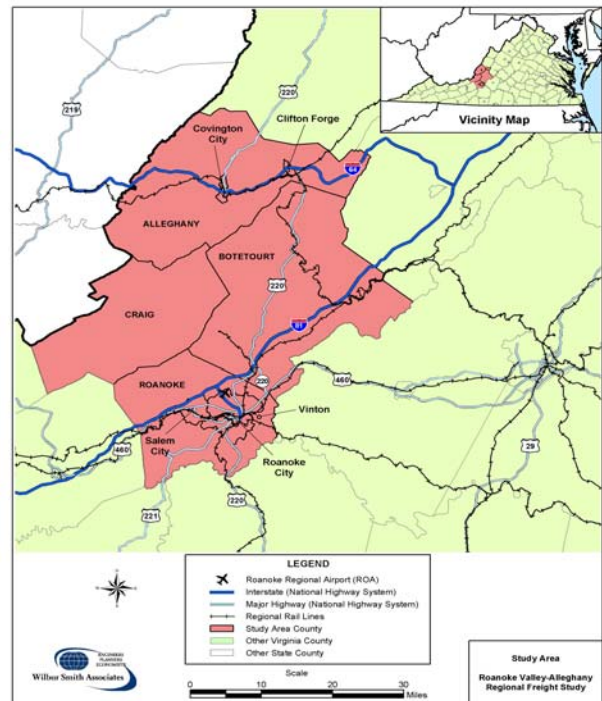
- Develop a "freight profile" of the region (Technical Memorandum #1).
- Identify current and emerging freight issues in the region (Tech Memo #2).
- Make recommendations to enhance freight mobility in the region (Tech Memo #3).
- Develop education/outreach materials about the importance of freight to the region.

The RVA Region for this study included: the counties of Alleghany, Botetourt, Craig and Roanoke; the cities of Covington, Roanoke and Salem; and the towns of Clifton Forge and Vinton.

TRANSPORTATION IN THE NEW ECONOMY

Today, the RVA Region is emerging as a crossroads of commerce and industry and the region's future, like its past, is linked to reliable transport systems. However, today's environment requires greater integration between freight transporting modes and more responsive transportation networks. In 1999 an economic analysis conducted for an area that encompassed the RVA Region raised concerns over the ability of traditional industries in the Region to create well paying jobs in the future.

Recent investments by the Commonwealth of Virginia in port facilities, combined with available land and labor in the RVA Region, may be a catalyst for future job growth in the transportation and distribution sector of the economy. "Exports from the Roanoke MSA increased by 70% from 1993 to 1997; a good sign for competitiveness in an increasingly global economy"¹



¹ Fifth Planning District Regional Cluster Analysis, Final Report, ICF Consulting Economic Strategy Group, July 1999

In today's business environment, cost effective, time sensitive transportation service is used as a strategy for competitive advantage in manufacturing and service based industries. The old model of business logistics was based on re-supplying stocks of inventory, whereas today's supply chain management model integrates transportation with product offerings. Supply chain management reduces inventory at all stages of the production/ distribution cycle. For example, a heavy equipment distributor interviewed for the RVA Freight Study was a regular user of air cargo service because their marketing strategy was based on delivering parts and service on-site within 24 hours.

To attract economic development in this new environment, local and regional planning agencies must support modern supply-chain requirements: Integrated modal systems, infrastructure and "infostructure" that support reliable transit times, and the ability to respond to a constantly changing environment.

*"Over the past three years, Virginia has landed a number of distribution centers, equating to almost 4 million square feet of space, many within spitting distance of Hampton Roads. They have come with promises of jobs, investment and tax revenue for the state and increased container volume for the port. They have been true to their word, creating over a thousand jobs, investing close to \$135 million and comprising 15 percent of the port's annual 35 million TEUs."*²

Several of these distribution centers have located in the RVA Region, including Advance Auto Parts, Hanover Direct, Orvis Company and Home Shopping Network. Large retailers are attracted to the region by the supply of labor, land and available ground transportation services.

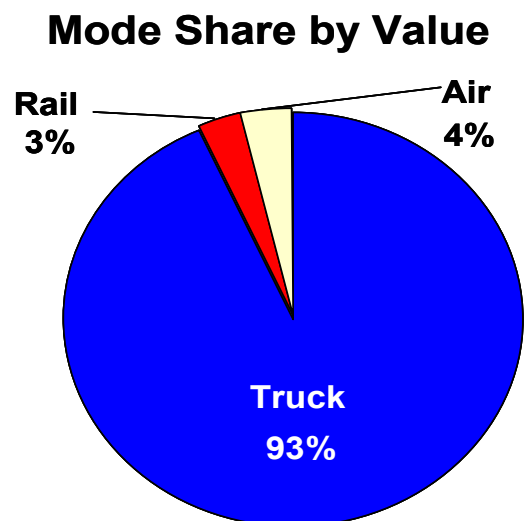
² The Journal of Commerce, Volume 3, Issue 45: *Not Just for Lovers Anymore; Virginia is looking to Distribution Centers to Improve its Competitive Position.* pp. 34-35.

REGIONAL FREIGHT PROFILE

Each year more than 16 million tons of freight, with values exceeding \$30 billion, originate in or are destined to the RVA Region. Nearly 80% of the region's tonnage moves by truck, with railroads claiming the remaining share (by weight air cargo is less than 1%).

By value, the share of freight moving by truck jumps even higher to 93%, with air (4%) and rail (3%) splitting the remainder. By weight, 57% of all commodity flows to or from this region have origins or destinations within the State of Virginia. North Carolina, West Virginia and the Ohio Valley region are the top interstate origins and/or destinations.

The greatest single commodity flow in the Roanoke Area is referred to as "secondary traffic." Secondary traffic is mixed commodities moving to and from warehouse or distribution facilities in the region; this traffic makes-up half of all shipments by value and one-third of all shipments by weight in the RVA Region, indicating that the region fulfills an important role in the modern business logistics model. The majority of this traffic is moving between Roanoke and ports at Hampton Roads / Norfolk.



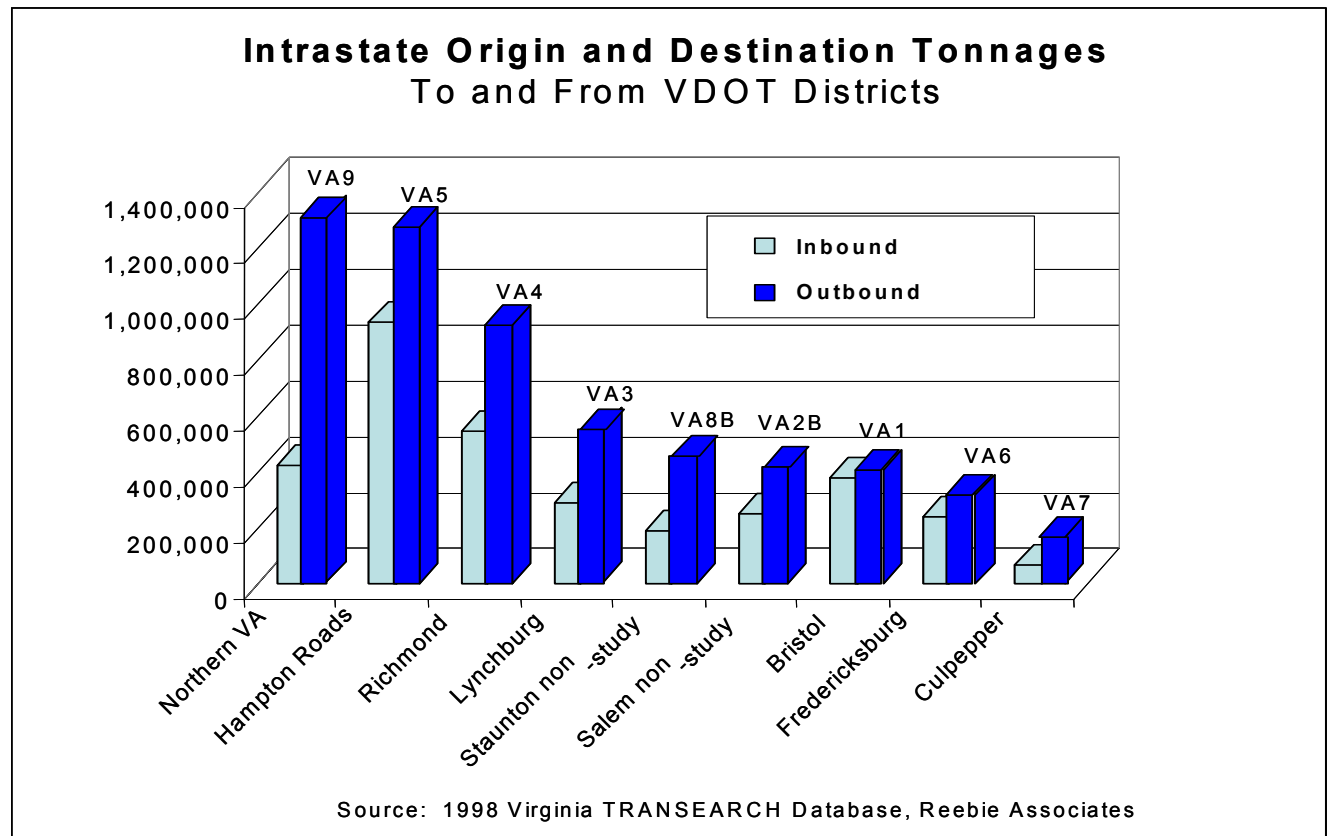
Source: 1998 Virginia TRANSEARCH Database, Reebie Associates

COMMODITY MOVEMENTS

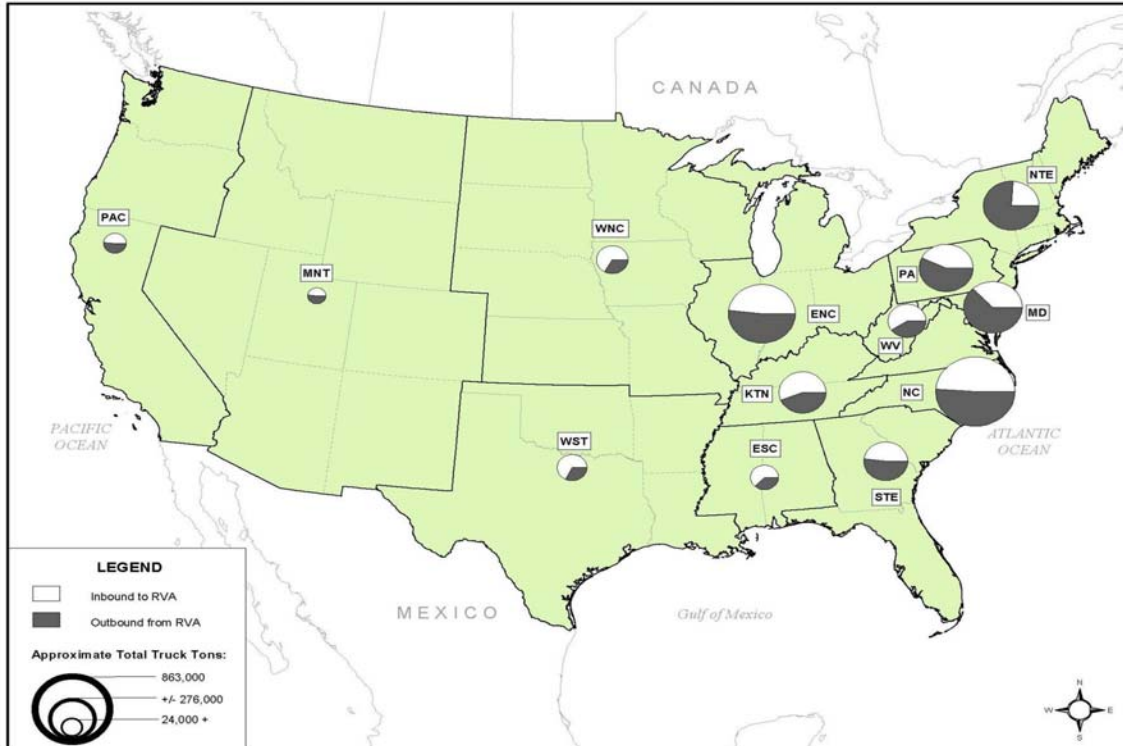
Commodity flows between the study area and other regions within Virginia (intrastate flows) account for 57% of commodity flows by tonnage and 55% by value.

Within Virginia the RVA Region produces more than it consumes, i.e. the volume of goods leaving the region to other areas of the Commonwealth exceed the volume of goods moving into the region from those areas. The imbalance is most pronounced in the flows to and from Northern Virginia. Implications of significant flow imbalances are that shippers may find it difficult to locate or position equipment for outgoing shipment and carriers may find it difficult to locate backhauls. The Hampton Roads District and the Northern Virginia District, which includes suburbs adjacent to Washington, D.C., together account for nearly half of the outbound truck flows from the RVA Region to other locations in Virginia. Hampton Roads ranks highest by value, while Northern Virginia ranks highest by tonnage.

Interstate domestic commodity origins and destinations to and from the RVA Region were also examined. Unlike intrastate movements, where outbound flows exceeded inbound flows in every instance, interstate balances vary by region. The RVA Region remains a producer region in its trade relationship with North Carolina, the North East Region, and to a lesser extent Maryland, Pennsylvania and the Pacific Region. For interstate truck flows the East North Central Region (Illinois, Indiana, Michigan and Ohio) and North Carolina rank 1st and 2nd by value of shipments. These two regions remain on top but trade places if ranked by weight. Maryland and the North East Region rank 3rd and 4th by value, and also trade places by weight. By rail, *Stone* is the primary outbound movement to North Carolina, and *Food Products* is the largest inbound commodity movement from North Carolina. *Coal* is the primary movement from West Virginia. The largest air freight movements are *Mail and Contract Traffic*, going to North Carolina.



Interstate Truck Flows to/from the RVA Region - Tons



RVA LOGISTICS PATTERNS

Previous studies have found that a few commodities usually comprise the majority of goods moving in most states or regions: “By addressing each of these industries individually, planners can address economic development and the impact of infrastructure improvements... it is not necessary to analyze the entire range of goods movement at the same time... specific industry sectors are likely to have similar transportation requirements.”³

The RVA Freight Study examines the logistics patterns for five major commodity groups in the RVA Region, using the Commodity Information Management System (CIMS), a software program developed by Wilbur Smith Associates and provided to the RVARC.

³ Virginia Transportation Research Council, “A Methodology for Statewide Intermodal Freight Transportation Planning”, December 1998

Secondary Traffic, the top commodity movement in the RVA Region, has three components:

- 1) Freight moving between warehouses or distribution centers;
- 2) Rail intermodal truck drayage; and,
- 3) The truck drayage portion of air cargo traffic.

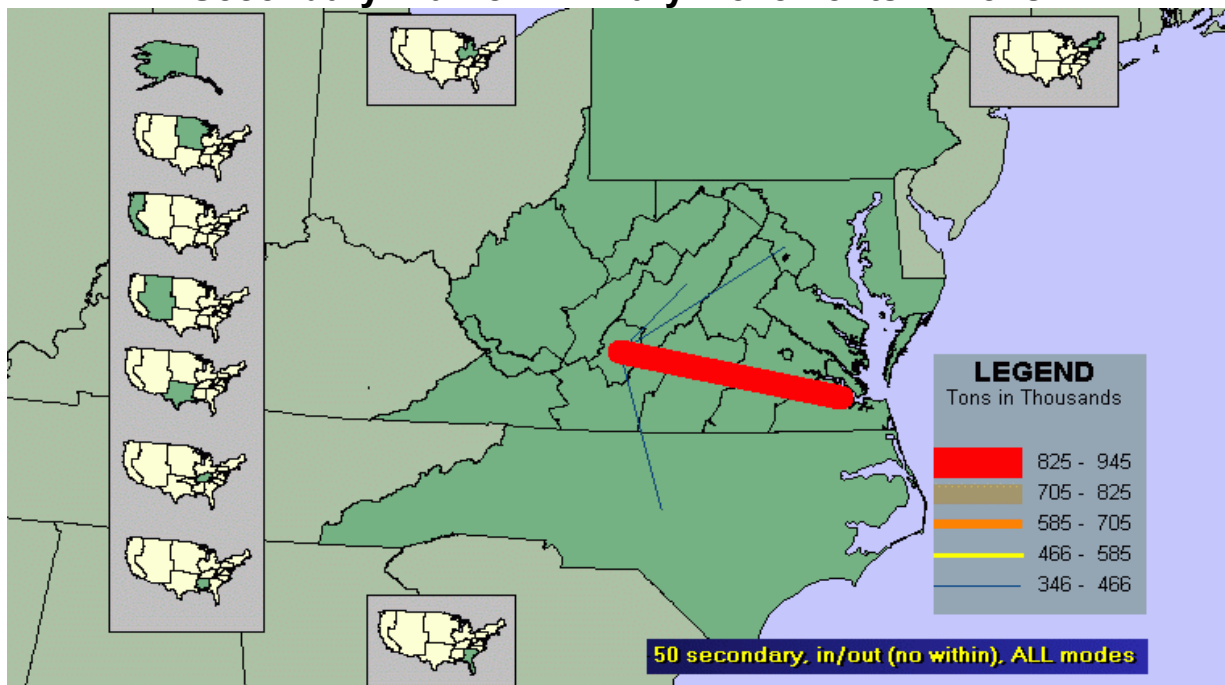
More than 99% of *Secondary Traffic* in the RVA Region is warehouse/ distribution traffic. In fact, movements to and from warehouses and distribution facilities comprise half of all shipments by value, and one-third of all shipments by weight, in the Region.

A key intermodal hub within hours by truck to the RVA Region is Hampton Roads. Intermodal containers arriving from international origins such as China, other parts of Asia, and Europe are placed on a truck chassis and driven to distribution centers located in the RVA Region.

At the distribution centers containers are unloaded and the contents consolidated with other products in trucks for redistribution throughout Virginia and the East Coast. A nearly equivalent level of *Secondary Traffic* heads back to Hampton Roads for containerized export to international markets. Based on the interviews with shippers in the RVA Region, substantial amounts of this traffic are sent as partial loads to consolidators located at the ports. Carriers interviewed indicated that the preferred route from Roanoke to Hampton

Roads is I-81 North to I-64 East, as opposed to the more direct U.S. Route 460. The more circuitous route of I-81 / I 64 adds 30 miles in each direction to the trip. The CIMS software estimates that Secondary Traffic moving between the RVA Region and Hampton Roads results in nearly 60, 000 truck trips per year. If all these trips used I-81 / I-64, the result is nearly 2 million *additional* miles of truck travel per year than if the most direct route (US 460) were used.

Secondary Traffic – Primary Movements in Tons



CURRENT & EMERGING ISSUES

The RVA Freight Study team conducted in-person and telephone interviews with commercial users (shippers) and providers (carriers) of freight transportation services in the Region. Fifty businesses and freight service providers were contacted for their opinions about regional transportation issues.

The interviews found that shippers in the RVA Region are largely satisfied with the transportation services they receive.

As one transportation manager stated: “Overall, things work pretty smooth; transportation is the easiest part of logistics.” Interviews were structured to gain insights about freight in the region at several levels:

- 1) *Specific problems at specific locations;*
- 2) *Broad issues related to limitations in the overall system;*
- 3) *Patterns and trends in the nature freight transport needs.*

Shipper Concerns:

- Pressure to further reduce inventory
- Heightened concerns over security
- Consistent, reasonably priced service to North Eastern US
- Access to ports via U.S. 460
- Time required to access super load permits
- Access to equipment
- Access to rail services
- Shipment consolidation
- The lack of adequate highway signs directing drivers to towns and facilities

Carrier Concerns

- Lack of parking / staging areas
- Exit and Entrance ramps to I-581
- I-81 congestion
- Access to ports via U.S. 460
- Poor access routes to facilities
- Signal timing and alignments on major truck routes and at specific intersections

THE RVA REGIONAL FREIGHT FORUM

Following initial stakeholder outreach, the RVARC and the Roanoke Regional Chamber of Commerce held a half day Regional Freight Forum to allow survey and interview participants an opportunity to provide additional thoughts and opinions.

Ten company representatives attended the Freight Forum and the small group allowed for a good interactive discussion. Participants were asked to respond to three questions:

- What should the overall goal(s) be for the outcomes of this study?
- What, if any issues/concerns has the study not addressed?
- What is the most effective means of engaging the freight community in the planning process?



Participants said a first step is to educate the public and bring more attention to the importance of freight to the region. There were strong sentiments that the general public and area businesses need to support freight issues to ensure the region's future economic vitality.

Business representatives said they would like more communication with the public sector about the impacts of major construction projects on local businesses. They also urged a comprehensive review of access control and truck route designations within the region, noting that many highways designated decades ago as "truck routes" today function as city streets due to the proliferation of traffic signals.

It was suggested that efforts to involve the business community in the transportation planning process should start small, and possibly prove a dual-role, both public sector planning *and* a business-to-business networking opportunity. It was also suggested that the benefits of participating in the planning process be clearly communicated and that initial meetings of a freight advisory group focus on "hot buttons" using knowledgeable keynote speakers and good facilitators.

REGIONAL FREIGHT PLANNING

While commercial transport is important to the businesses generating and receiving freight, all facets of society benefit from efficient freight transport. Therefore, government agencies should undertake planning to ensure a reliable and sustainable freight transportation network. As a first step, the RVARC commissioned the Freight Study with several objectives in mind:

- To better understand the link between transportation investment and economic development;
- To protect the region's quality of life;
- To enhance the safety of the region's transportation systems;
- To raise awareness and educate the public about the importance of freight; and,
- To plan regional transportation systems, while addressing homeland security issues.

To meet these objectives and promote freight in the planning process after concluding this study, recommendations are provided at three levels:

- Policies affecting transportation planning;
- Strategies responding to current and emerging issues; and,
- Identification of "fast action" projects that could be included in the region's next Transportation Improvement Plan (TIP).

FREIGHT POLICIES

To insure a sustainable freight network that serves the needs of the region, policies addressing freight should be developed in three focus areas:

- 1) *Freight Mobility*
- 2) *Urban Design/Growth Management*
- 3) *Vitality and Quality of Life*

To assist in developing regional freight policy, the RVARC should work with regional businesses in developing a "Freight Advisory Committee" that can provide input to the planning process and forge a stronger partnership with the freight community.

Planning to Enhance Freight Mobility

- Introduce freight to the long range plan
- Focus on key truck corridors
- Incorporate trucks in traffic design
- Enhance freight operation using technology
- Support freight planning with data
- Promote intermodal operations
- Partner for effective freight planning
- Get advice

Urban Design & Growth Management Policy

- Land use planning for freight
- Regional zoning for freight infrastructure
- Design standards for freight infrastructure
- Urban development
- Using the development review process to benefit freight

Promote Economic Vitality & Quality of Life

- Air quality issues
- Environmental justice
- Lane balancing

Freight Villages

Clustering warehouse activities around specific areas that make operational sense can provide the basis for the development of a "freight village". The model definition of a freight village is where:

1. All modes are represented;
2. Land prices are lower than general commercial properties;
3. Adequate land is available for development;
4. Facilities are accessible by local arterials for local distribution;
5. Facilities have good access to interstates/freeways for regional and national distribution;
6. Accessible to rail facilities, directly tied to a Class I railroad main line;
7. Accessible to an airport (with frequent service to domestic and international cities);
8. Accessible to a port offering a wide variety of materials handling options.

FREIGHT STRATEGIES

The RVA Regional Freight Study Report provides a recommended action plan for incorporating freight into the planning process of the region. The action plan is intended as a framework for developing and implementing policies, strategies and projects that enhance the mobility and productivity of freight transportation in the region while enhancing safety, efficiency and environmental quality. A complete discussion of policy development related to freight at the regional level can be found in the full report at: <http://www.rvarc.org>

A first step to incorporating freight into regional planning efforts is to recognize freight in the long range planning process. The RVARC in cooperation with the RVAMPO have established good foundations for regional freight planning goals in the Long Range Transportation Plan:

- A transportation system which will complement and promote the social, economic, and environmental goals of the Roanoke Urbanized Area.
- A coordinated transportation system that will continually provide for the safe and efficient movement of people and goods within and through the area.

An additional policy goal specific to freight transport in the region might be stated as:

- *Plan and develop a reliable, sustainable RVA Regional freight network.*

The RVA Regional Freight Study presents policies and strategies in three areas. A few of those freight strategies are discussed here:

Focus on Key Corridors -The region should focus freight planning efforts on a few key freight corridors. Continued investment in key through routes is important in sustaining the RVA Region's freight network. Moreover, investing in routes that function as viable alternatives such as adjacent arterials, and

circumferential bypasses, will help sustain important corridors like I-81, I-581 and US 460. Designated trucks routes should be understood and protected as key links in the overall logistics network.

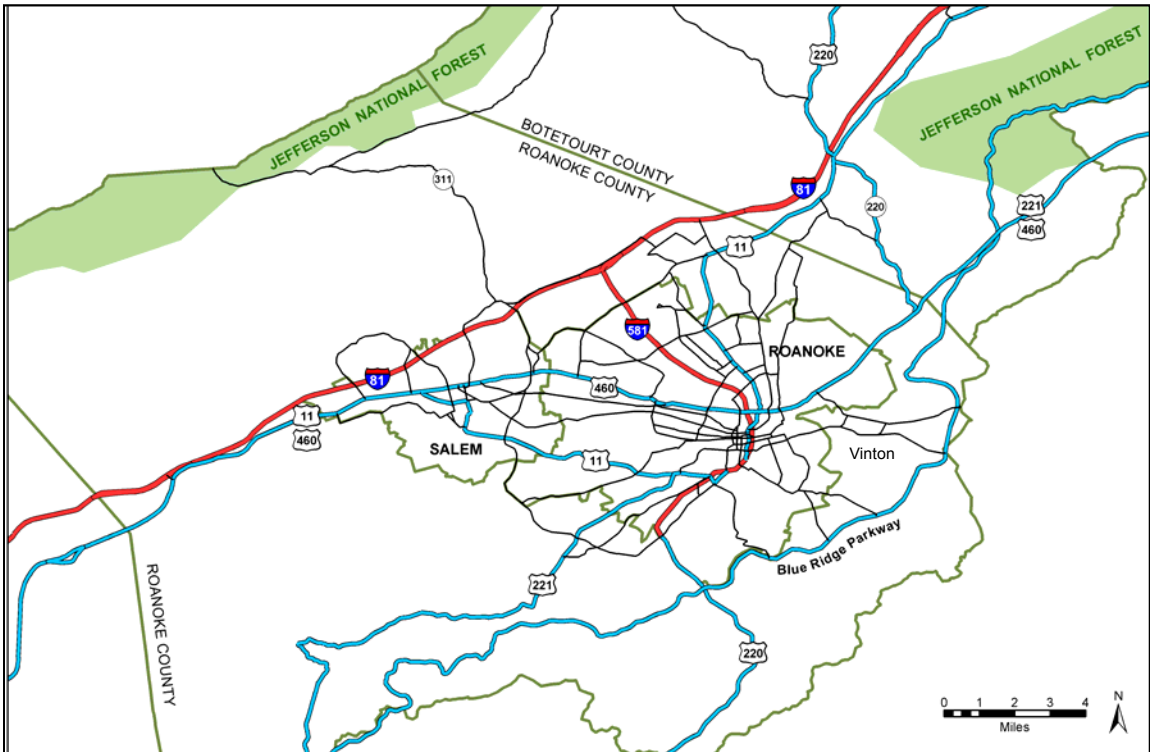
Economic Development - As a producer region, both rail and truck modes experience lane imbalance problems. Economic development efforts can strategically target those industries that might leverage imbalance opportunities by filling empty backhauls.

Land-Use Planning and Zoning - Land use policies should strategically manage the growth of distribution facilities in the area. The region should consider enhancing its status as an emerging staging point by clustering warehouse activities (freight villages) and consider adopting a Warehouse and Logistics zoning designation.

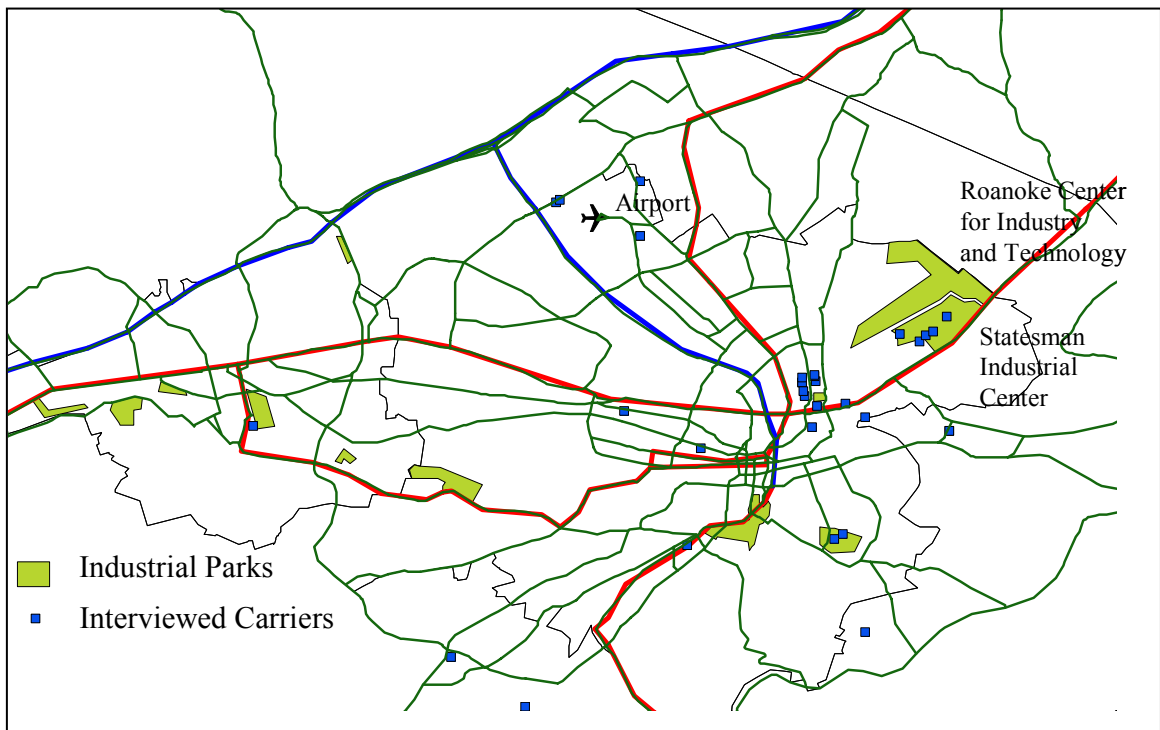
Get Advice - Creating a formal advisory group has become a first step for many MPOs wanting routine, meaningful dialogue between planners and freight interests. Too often shippers and their customers (who are also key stakeholders) are not engaged in the planning dialogue that affects their business. Planners, carriers, shippers and delivery customers should all be included, on a routine basis, in the sort of creative problem-solving that is required of this unique type of transportation planning.

Partner for Effective Freight Transport Planning – It is important that planners in the region view every transportation project as a potential freight project, as nearly all projects in the region (including private rail or warehouse development) will affect freight movements in some way. Within the RVA Region many problems threatening freight mobility are not solely with state or regional roadways, but in fact are often associated with local roadways as well.

Key Freight Corridors in the Roanoke-Salem Area



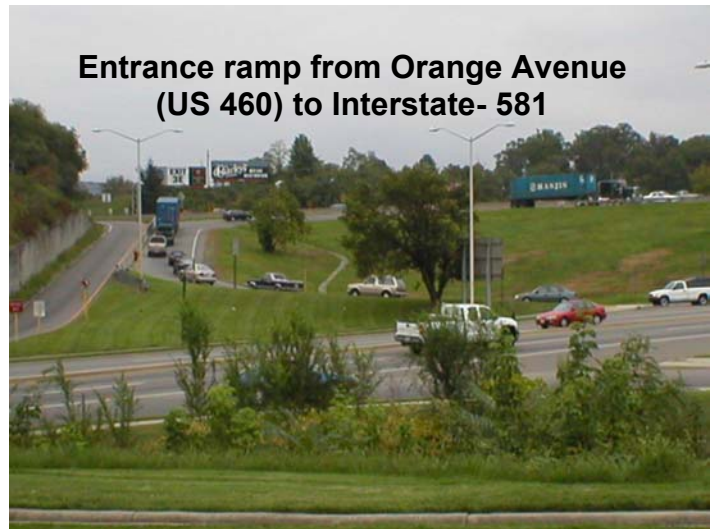
Roanoke/Salem Industrial Parks



FREIGHT PROJECTS

One of the outcomes from the stake-holder outreach process undertaken during the study was the identification of potential freight projects. Listed below are ten projects that can be considered in future regional Transportation Improvement Plans (TIP), resources permitting:

- Improve signage on I-81 and I-581
- Orange Ave. & I-581
- Elm Street & I-581
- Elm Street & Williamson
- Orange Avenue & 13th St.
- Salem Turnpike & Melrose Ave.
- Salem Turnpike & Peters Creek Rd.
- Lynchburg Turnpike & Electric Rd.
- US 460 & Granby Road
- US 460 & Challenger Avenue



Special recognition and appreciation goes to members of the Transportation Technical Committee who oversaw the conduct of the Regional Freight Study:

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