

## FREIGHT ELEMENT

Recognizing the key role that freight transportation plays in the Piedmont Triad region; the Burlington-Graham, Greensboro, High Point, and Winston-Salem Metropolitan Planning Organization's (MPO's) are undertaking a Regional approach to the Long Range Transportation Plan (LRTP) to develop a framework for an integrated freight planning document for their respective areas.

The Piedmont Triad has become increasingly focused on freight transportation planning over the last several years with the loss of textile manufacturing and a shift to major Freight and Goods Movement Industry. The goals guiding regional freight planning and investments are:

- Provide a safe *freight* transportation system that sustains or improves existing levels of freight access and mobility;
- Support the region's economic well-being, while remaining sensitive to environmental needs and concerns; and
- Achieve efficiency in operations and investments in the *freight* transportation system.

### Why is Freight Transportation Important?

The effectiveness and efficiency of freight transportation is a major factor in manufacturing costs and, directly and indirectly, in retail costs. Manufacturers look for reliability, speed, and quality control in the carriers that deliver their raw materials and deliver their finished products. If shipments of raw materials do not arrive on time, all other processes are affected, degrading productivity, which in turn affects total company costs.

On the retail side, sellers now assume that the cost of transport will be less than the cost of maintaining large inventories (and paying for additional real estate to house it). This process, called 'just-in-time' inventory, is now widespread and points to the overall strength of our transportation system. However, as congestion affects transportation reliability, costs will increase because reliability will be a premium – affecting the price of retail items from bread to basketballs at the local distributor.

The movement of freight may be slightly mysterious to the average consumer, but it is crucial to maintaining the high quality of life that we expect. Additionally, transportation jobs generally pay well and, through multipliers, this income positively affects the local economy in a direct way.

Freight moves by highways, rail, aviation, pipeline and waterways (ports). The Piedmont Triad was an early crossroad for the railroads, moving freight between the ports to the east and inland connections to the north, west and south. This logistical network contributes significantly to the regional economy. The highway system also placed the Piedmont Triad at a crossroad of the interstate system. Two major pipelines provide another important source of freight transport, once again with the Piedmont Triad at the crossroad.

### Highway and Rail Freight Trends

Trucks and rail account for 65 percent of the nation's domestic freight volume. Both have been showing significant growth over the last 10 years. In 2005, America's highways carried 77% of America's freight based on tons shipped, and Carried 92% of America's freight shipped based on value. Changes in retail and manufacturing to "just in time" freight deliveries have increased the amount of freight in transit at any given time. It has been said that the rail lines and highways of the country have become the nation's largest warehouse. These two modes, along with air cargo, are adapting to meet the needs of their customers.

Freight railroads are classified as Class I, Regional, or Short Line. Class I railroads are those with annual revenues of greater than \$253.7 million. Examples of Class I railroads include Norfolk Southern and CSX. Regional and short line railroads are smaller companies serving specific regional and local markets.

In 2004, North Carolina was served by two Class I railroads and 23 short line railroads. The two class I railroads maintained 2,597 miles of track and the short lines operate on 782 miles in the state. The two long-haul carriers are Norfolk Southern and CSX. Norfolk Southern, through its Norfolk Southern Railway Company subsidiary, operates approximately 21,300 route miles in 22 states, the District of Columbia and Ontario, Canada, serving every major container port in the eastern United States and providing connections to western rail carriers. Norfolk Southern operates an extensive intermodal network and is the nation's largest rail carrier of automotive parts and finished vehicles.

Superimposed on part of the trackage on which the Norfolk Southern operates its trains, the North Carolina Railroad (NCRR) owns 317 miles of tracks stretching from Charlotte through Salisbury, Greensboro, Durham, and Raleigh, then southeast to its terminus in Morehead City. The NCRR is a Real Estate Investment Trust whose voting stock is controlled by the state of North Carolina. NCRR owns and manages the rail line and other properties adjacent to the line. Not only do freight trains operated by Norfolk Southern carry products on the NCRR, but Amtrak runs two passenger trains, the Piedmont and the Carolinian, along its corridor.

### **North Carolina Total Rail Freight Flows**

The highest volume of rail freight traffic is on the CSX line connecting Charlotte to the Port at Wilmington, the Norfolk Southern/NCRR line from Charlotte through Greensboro to Raleigh, and the CSX line that runs north-south roughly parallel to Interstate Highway 95. Those three corridors handle approximately 20 million tons of freight annually. In spite of a relatively robust condition of the overall rail freight system in the state, there continue to be issues with the loss of rail access to individual businesses from time to time. Over the past three decades, over 700 miles of track have been abandoned. Some of these miles have been adapted to "Rails to Trails" use, but some have created shifts in freight mode and forced industry to ship products by truck where lines were abandoned.

### **Winston-Salem Rail Freight**

Rail freight transportation in the Winston-Salem Urban Area is operated by three different railroads, the Yadkin Valley Railroad, the Winston-Salem Southbound Railway, and the Norfolk Southern Railway.

The Yadkin Valley Railroad Company is owned and operated by Gulf and Ohio Railways of Knoxville, TN and operates in the counties of Forsyth, Stokes, Surry, and Wilkes. Commodities carried by the railroad are forest products, coal, grain, and fiberboard. The Yadkin Valley Railroad consists of two lines, one from Rural Hall to Mount Airy and one from Rural Hall to North Wilkesboro. Both lines connect to the Norfolk Southern Railway at Rural Hall.

Norfolk Southern Railway (NS) is owned and operated by Norfolk Southern Corporation headquartered in Norfolk, VA. NS connects the Winston-Salem Urban Area to Roanoke, VA to the north and Greensboro to the east. NS also owns a line in which is currently not in use that connects Winston-Salem with Charlotte. One of the largest commodities carried by the railroad is automobiles. NS operates an automobile distribution center in Winston-Salem.

Winston-Salem Southbound Railway (WSS) began service in 1910 and is independently operated; however, CSX and Norfolk Southern jointly own all of its stock. WSS connects Winston-Salem and Forsyth County to Lexington, Albemarle, and Wadesboro to the south. The railway operates in Forsyth, Davidson, Stanly, and Anson Counties. Commodities carried by the railroad are grain, sand, gravel, stone, forest products, paper products, coal, coke, cement, clay, fertilizer, chemicals, aluminum, iron, and steel. One of the principal shippers is Corn Products Co., manufacturers of corn syrup and related products. WSS connects with NS in Winston-Salem on the north end and with CSX in Wadesboro on the south end. WSS is also connected to High Point, Thomasville, and Denton Railroad (HPTD) and Aberdeen, Carolina, and Western Railroad (ACWR) along the railway.

### **Piedmont Triad Freight**

The Piedmont Triad (the Region) is at an economic crossroads. Low-wage global competition, combined with productivity increases in manufacturing, has stripped the Region's traditional industrial clusters in furniture, textiles, and tobacco manufacturing of tens of thousands of jobs since 2000. Although 36<sup>th</sup> in relative population size, the Piedmont Triad metropolitan area ranked 165<sup>th</sup> in 2005 among the nation's 200 largest metro areas in terms of job and income growth according to the Milken Institute's study of Best Performing Cities.

However, new regional high tech clusters are emerging, and the FedEx decision to establish its Mid-Atlantic hub at PTI provides the Piedmont Triad special competitive advantage in air logistics, offering time-sensitive industries speedy, reliable long-distance connectivity, heretofore lacking in the Region. Complementing airport-linked e-commerce fulfillment centers are flow-through facilities for perishables (either in the physical or economic sense), just-in-time supply-chain and emergency parts provision centers, and reverse logistics facilities for the repair and upgrade of high-tech products such as notebook computers and mobile phones. The clustering of such time-critical goods facilities near air-express airports is stimulating further expansion of air cargo, less-than-load (LTL) trucking, freight forwarders, and third party logistics providers (3PLs) along major highways with quick accessibility to these airports.

The Piedmont Triad is rich in logistical assets and is strategically located in the center of the Atlantic coast air transport corridor. The Triad offers excellent interstate highway access and competitive rail service, as well as being within five-hour trucking proximity to deep-water ports at Wilmington, NC, Morehead City, NC, Charleston, SC, and Norfolk, VA. In addition, the area is served by the Norfolk Southern and CSX rail lines.

### **Piedmont Triad Major Distribution Facilities**

<b>Company</b>	<b>Employees</b>	<b>Size (Sq Ft)</b>
K Mart Distribution Center	650	1,600,000
Polo-Ralph Lauren	925	1,200,000
Harris Teeter	525	908,000
Liberty Hardware	500	680,000
Kay Chemical Co.	400	600,000
Phillips Van-Heusen	250	592,000
Procter & Gamble	120	582,000
Gold Toe Brands	160	570,000
Greensboro Bulk Mail Center	650	425,000
Lowe's Companies Inc.	75	480,000
Blyth Homescents	85	419,000
United Parcel Service	425	346,000
Universal Furniture	140	345,000
Gildan Activewear Distribution Inc.	180	300,000
Powell Company	30	300,000
Pulaski Furniture	70	275,241
Linens-N-Things	200	260,000

## Piedmont Triad Major Trucking Firms

Company	Triad Employees/Drivers	Triad Trucks/Trailers	Triad Terminal Location(s)	Types of Hauling
<b>Old Dominion Freight Line Inc.</b> 500 Old Dominion Way Thomasville, NC 27360 (336) 822-5000	1,166/220	167/557	Thomasville, Greensboro	LTL, TL, container
<b>Roadway Express Inc.</b> 1255 NC 66 South Kernersville, NC 27284 (336) 993—4811	900/220	300/600	Kernersville	LTL, truckload
<b>Epes Transport Systems Inc.</b> 3400 Edgefield Court Greensboro, NC 27409 (336) 668-3358	866/530	700/1,800	Greensboro, Winston-Salem	TL, contract carrier
<b>Shelba D. Johnson Trucking</b> 1640 Blair St. Thomasville, NC 27264 (336) 476-2000	385/174	175/525	Thomasville	LTL furniture
<b>ABF Freight System</b> 1165 NC 65 S. Kernersville, NC 27284 (336) 993-9500	325/145	75/374	Kernersville	LTL, TL, FreightValue
<b>MGM Transport Corp.</b> 1264 Jackson Lake Road High Point, NC 27263 (336) 887-3054	300/200	150/670	High Point	TL, LTL
<b>Best Cartage, Inc.</b> 829 Graves St. Kernersville, NC 27614 (800) 849-1818	200/155	100/275	Kernersville	TL
<b>Turner Transfer</b> 4514 Holden Rd. Greensboro, NC 27406 (336) 294-4660	200/100	75/100	Greensboro	heavy specialized

Company	Triad Employees/Drivers	Triad Trucks/Trailers	Triad Terminal Location(s)	Types of Hauling
<b>Murrow's Transfer Inc.</b> 1660 Blair St. Thomasville, NC 27360 (336) 475-6101	165/85	108/406	Thomasville	TL, LTL, Furniture and general commodities
<b>Southland Transportation Co.</b> 7925 NC 601 North Boonville, NC 27011 (336) 367-4767	157/100	120/380	Boonville	TL, all commodities
<b>FedEx Freight East Inc.</b> 2120 Servomation Road Greensboro, NC 27407 (336) 852-9255	150/75	WND	Greensboro	Regional, inter-regional LTL
<b>Danny Nicholson Inc.</b> 339 City Lake Road Lexington, NC 27295 (336) 249-7204	128/93	120/240	Lexington, Eden	Refrigerated freight, textiles, beer, medical supplies
<b>Bridgeways Inc.</b> 1280 Old Belt Way Rural Hall, NC 27045 (336) 969-4633	125/100	90/300	Rural Hall	TL
<b>Hardy Brothers, Inc.</b> 6406 Siloam Rd. Siloam, NC 27047 (336) 374-5050	120/90	45/110	Siloam	TL
<b>Lentz Transfer &amp; Storage Co.</b> 6300 Clementine Dr. Clemmons, NC 27012 (336) 766-7331	104/16	22/7	Winston-Salem	LTL, TL, general commodity
<b>Wilson Trucking Corp.</b> 811 Chimney Rock Court Greensboro, NC 27209 (336) 852-4440	101/43	46/86	Greensboro	LTL
<b>H&amp;W Trucking Co. Inc.</b> 1772 US Hwy. 52 North Mount Airy, 27030 (336) 789-2188	100/65	50/700	Mount Airy	TL, LTL, furniture and produce
<b>TCI Logistics</b> 1382 S. Park Drive Kernersville, NC 27284 (336) 996-8000	90/75	120/390	Kernersville	TL, flat bed, specialty stepdeck
<b>City Transfer &amp; Storage Co.</b> 1100 Redding Dr. High Point 27260 (336) 889-6155	85/22	45/50	High Point, Winston-Salem	household, machinery, heavy hauling

Company	Triad Employees/Drivers	Triad Trucks/Trailers	Triad Terminal Location(s)	Types of Hauling
<b>Saia Motor Freight</b> 2904 Torrence Dr Greensboro, NC 27406 (336) 574-0618	57/36	26/WND	Greensboro	LTL
<b>TLS Inc</b> 4350 Idlewild Industrial Drive Winston-Salem, NC 27105 (336) 661-1355	49/45	45/11	Winston-Salem	Intermodal-rail, domestic, international ports
<b>M&amp;C Xpress Inc.</b> 400-A Edwardia Drive Greensboro, NC 27409 (336) 294-6854	39/30	42/15	Greensboro	Express truck, TL, air freight, ocean exports

### Prospects of the Future, an Action Plan

Given the Piedmont Triad's logistics and other assets to be soon reinforced by the FedEx Mid-Atlantic hub, the Region has a propitious opportunity to create a world-class, differentiating competency in multi-modal logistics that can strengthen its traditional manufacturing economy and attract new economy industries such as microelectronics, pharmaceuticals, medical devices, and aerospace equipment. Indeed, the Piedmont Triad's confluence of location, interstate highways, PTI and its new FedEx hub provide the Region competitive advantage that can help brand the Piedmont Triad nationally and globally in the same way that RTP and research have branded the Raleigh-Durham-Chapel Hill area and financial services have branded Charlotte. Beyond branding, the Piedmont Triad's combination of logistics assets gives the Region true economic advantage that can have the potential to drive the creation of ten of thousands of new jobs across the entire 12-county Region.

The decision by FedEx to construct a new hub at Piedmont Triad International Airport has raised the profile of the Triad and proves the area has the infrastructure, climate, quality of life, and physical ability to support such an enterprise. The communities of the Triad are taking advantage of FedEx's decision through infrastructure enhancements and business recruitment efforts that will attract new businesses and allow existing ones to increase their size, scope, and profitability.

The addition of the FedEx Mid-Atlantic Hub should help overland transportation companies, distribution and logistics professionals, as well as FedEx suppliers recognize Winston-Salem as the ideal location for their business ventures. Proximity to the hub will allow local companies to access overnight delivery with a later drop-off time (usually 11 pm), increasing company response time. Furthermore, companies in the fields of biotechnology, medical technology, and other high value-added industries will be attracted to Winston-Salem, particularly since the city has focused its efforts on these industries. In addition to building the planned expansion of the Piedmont Triad Research Park, which will become the nation's largest urban research park, there is an unmatched ability to collaborate with premier scientists at Wake Forest University Baptist Medical Center. Finally, companies involved in advanced manufacturing will benefit from the manufacturing expertise of the area workforce.

With Regional groups representing interest of the Piedmont Triad's economy and vitality of life; the Metropolitan Planning Organizations (MPOs) of Burlington-Graham, Greensboro, High Point, and Winston-Salem can rely on organizations like the Piedmont Triad Partnership, Piedmont Triad International Airport, Piedmont Authority for Regional Transportation, and the Piedmont Triad Transportation Association to engage in the future of the region's logistical planning and infrastructure needs for the betterment of the industry.

### **Winston-Salem Logistics Committee**

On August 07, 2007 the Winston-Salem Department of Transportation mailed a letter to local freight stakeholders inviting them to become members of its Logistics Committee (Infrastructure & Operations Committee for Freight and Goods Movement). The potential committee members were asked to respond by September 07, 2007. Salem Logistics Incorporated was the only company out of seventy-six, to request membership on the committee. David Hauser, Director of the Piedmont Triad Partnership was informed of Winston-Salem's Logistics Committee by the President of Epes Transport, one of the stakeholders initially contacted by Winston-Salem. Mr. Hauser is looking forward to working with Winston-Salem's Logistics committee.

#### Logistics Committee Purpose

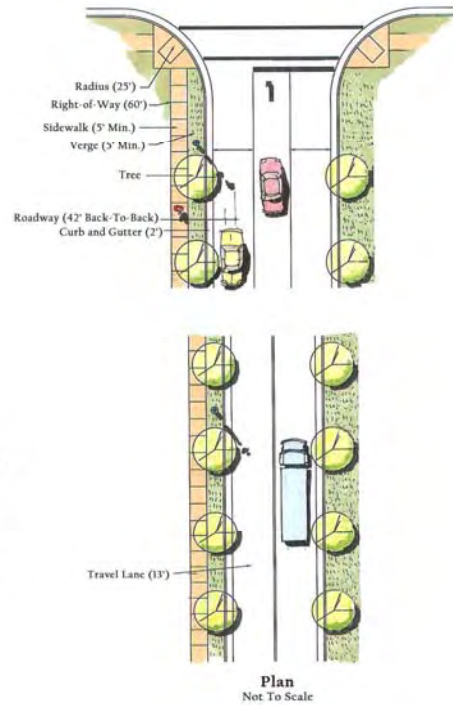
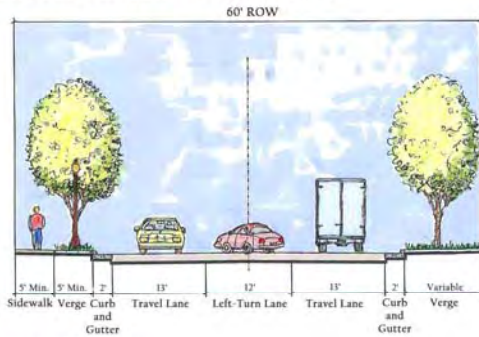
- Identify key issues related to the physical and operational conditions of highway facilities that negatively impact the efficient flow of freight and goods in Winston-Salem, NC
- Develop a set of goals related to transportation and terminal infrastructure and operating conditions for the overall efficiency of freight movement in Winston-Salem, NC
- Identify a list of potential strategies that would effectively address each of the goals
- Develop estimated implementation times
  - short (< 1 year)
  - medium (1-3 years)
  - long range (> 3 years)
- Identify at least one issue for each "sector", i.e. motor carrier, rail, marine, terminal operator
- Identify key issues related to Winston-Salem's Congestion Management Systems (CMS) Plan
  - Assist Winston-Salem's CMS Task Force

### **Design Considerations**

The design of all roadways should be consistent with their intended function and be responsive to the environment through which they pass. This principle is equally important when considering roads designated as truck routes or as industrial collectors where the movements of goods and materials occur with some frequency. All routes used by trucks, however, are not identical in their design or intended functions. Industrial collectors — such as the one shown in the illustration below — require different types and sizes of context-sensitive design features when compared with other street types that may handle limited truck traffic.

# Industrial Collector

2-Lane Divided, Left-Turn Lane, 42' Back-To-Back



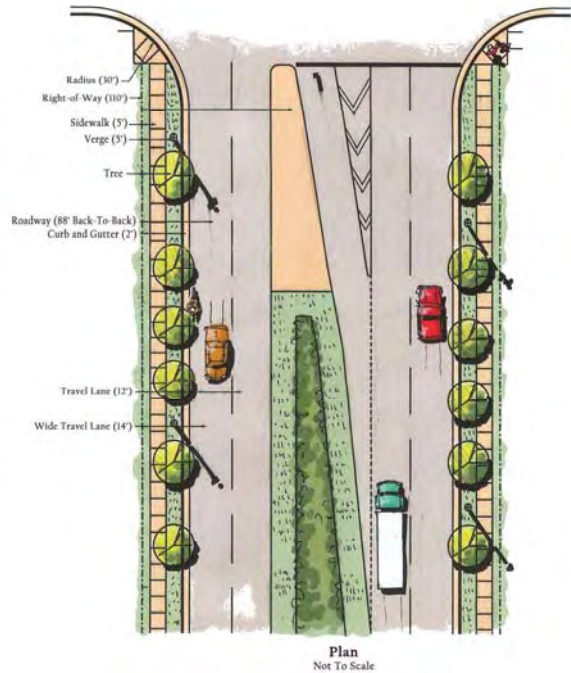
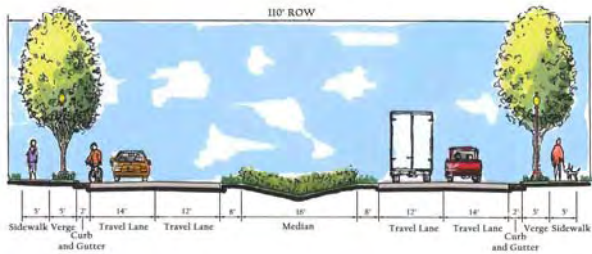
## Context Sensitive Design Features

This Industrial Collector is designed to limit automobile travel speeds to 30 miles per hour. It provides two travel lanes with opportunities for center left turn bays, where needed. The larger curb radius allows larger trucks to turn without damaging the curb. The wide travel lanes better accommodate larger vehicle traffic and provide the opportunity for motor vehicles and bicycles to share the travel corridor. In these instances, the facilities should be designated as official bicycle routes and supplemented by appropriate signage. Street trees are envisioned along both sides of the street to provide shade and help soften the built environment. Sidewalks are preferred for both sides of the street to connect complementary land uses. However, a ten-foot multiuse path along one side of the street is acceptable in less intense areas. Context sensitive design considerations should include:

- Drainage (swale vs. curb and gutter)
- Street Trees (formal vs. random plantings)
- Pedestrian Circulation (sidewalk vs. multi-use path)
- Street Lighting (height/placement concerns)

# Suburban Boulevard

4-Lane Divided, Advanced Left-Turn, Sidewalks, Landscaping



## Context Sensitive Design Features

This Suburban Boulevard is designed to limit automobile travel speeds to 45 miles per hour. It provides four travel lanes including wide outside lanes to accommodate experienced cyclists. Street trees along both sides of the street provide shade and help soften the built environment. Sidewalks are preferred for both sides of the street in suburban areas; however, a ten-foot, multiuse path on one side of the street is acceptable in less dense areas. A natural buffer extends from the back of the sidewalk to the private property line along the entire corridor. Context sensitive design considerations should include:

- Plantable Median
- Striped Crosswalks at intersections
- Drainage (swale vs. curb and gutter)
- Street Trees (formal vs. random plantings)
- Pedestrian Circulation (sidewalk or multi-use path)

Common design elements that are a priority for all truck routes include appropriate lane widths, turning radii, and adequate separation for pedestrian facilities. A general set of design considerations for truck routes, including the industrial collector and suburban boulevard examples presented herein, should include:

- Edge Treatment — Curb and gutter preferred; ditch/swale in unincorporated areas
- Lane Widths — Minimum 12 feet
- Bike/Pedestrian Accommodations — Minimum 5-foot sidewalks and 5-foot verge

- Design/Posted Speed — 30-55 mph
- Turning Radii — Minimum 25 feet
- On-Street Parking — Prohibited within 30 feet of intersections

### **Winston-Salem Roadway System**

The Winston-Salem/Forsyth County Urban Area has a roadway system that easily supports truck freight transportation. For safety reasons the City limits the amount of truck traffic on certain streets which have low traffic carrying capacities to encourage truck traffic to use roadways with higher capacities and speeds. Convergence of major arteries such as Interstate 40, Business I-40 and US 52 (Future I-74) provide ideal access for the movement of goods, and connects industry in our Urban Area with other regions throughout the state and country. Continual roadway improvements by the City and the North Carolina Department of Transportation (NCDOT) have allowed all of the Urban Area's major industries to operate without truck freight transportation problems.

The Union Cross Road Widening Project (TIP Number U-4909) will provide relief for Union Cross Road as subdivisions, shopping centers, and Dell Computer develops. The Union Cross widening project is in the final stages of the planning process. Right-of-Way acquisition is scheduled for 2008 and Construction is scheduled for 2010.

The North Carolina Department of Transportation (NCDOT) is beginning the project development studies for Business 40 (also known as I-40 Business) from west of 4th Street to east of Church Street in Winston-Salem. The project will include removing and replacing highway pavement, replacing bridges and improving ramps on to and off of Business 40. Today, this roadway carries approximately 70,000 vehicles per day.

The North Carolina Department of Transportation is preparing an engineering and environmental study to ease traffic congestion and improve safety on NC 109 from Old Greensboro Road to I-40/US 311 in Davidson and Forsyth Counties. This study (TIP Project No.R-2568C) includes evaluating improvements to the existing roadways, reviewing new roadway corridors, and preparing preliminary engineering, traffic analysis, environmental evaluations, and a Federal Environmental Document.

The proposed Northern Beltway will offer an alternative route for freight carriers traveling through the Urban Area while providing more connectivity to local freight carriers. This will also allow freight carriers to bypass the very heavily congested area of Business I-40 and US 52 near downtown Winston-Salem, especially during peak hours.

### **Winston-Salem Freight Transportation Improvement Project List**

#### **2007-2009**

**STIP Number:** B-3637  
**Route Name:** NC 801  
**Description:** Replace Bridge over Interstate 40 and Revise Interchange  
**Existing:** 2 lane  
**Proposed:** 6 lane

**2016-2025**

**STIP Number:** I-911  
Route Name: Interstate 40  
Description: West of NC 801 to west of SR 1122  
Pavement rehabilitation/  
construct additional lanes

Existing: 4 lane freeway  
Proposed: 6 lane freeway

**STIP Number:** R-2568  
Route Name: NC 109  
Description: I-85 Business in Thomasville  
to I-40 in Winston-Salem

Existing: 2 lane  
Proposed: 4 lanes divided

**STIP Number:** U-3617  
Route Name: SR 2045 East Mountain Street/  
Old US 421, SR 1005, SR 1008  
Description: NC 66 in Kernersville to SR 2001  
(Winthrop St.) in Guilford County

Existing: 2 lane  
Proposed: 4 lanes divided

**STIP Number:** U-2579  
Route Name: Winston-Salem Northern Beltway,  
Eastern Section (Future I-74)  
Description: US 52 to US 311 (US 311 to I-40,  
US 158 (Reidsville Rd) to US 52)

Existing: N/A  
Proposed: New 4 - 6 lane freeway

**STIP Number:** U-2729  
Route Name: SR 1672 (Hanes Mill Road)  
Description: Museum Dr to SR 4000 (University  
Pkwy).

Existing: 2 lane  
Proposed: 4 lane

**STIP Number:** R-2577A  
Route Name: US 158  
Description: Old Greensboro Rd to I-73 / US 220  
Existing: 2 lane  
Proposed: 4 lanes divided

**STIP Number:** U-2800  
Route Name: SR 2601 (Macy Grove Road)  
Description: Industrial Park Drive to SR 1005  
(Old US 421) Convert grade  
separation at I-40 Business to an  
interchange

Existing: N/A  
Proposed: Build Interchange; 4 lane divided

**STIP Number:** U-2707  
Route Name: SR 3000 (Idols Road Extension)  
Description: SR 2999 (Hampton Road) to  
US 158 (S. Stratford Road)

Existing: N/A  
Proposed: New two-lane shoulder section

**STIP Number:** N/A  
Route Name: Interstate 40  
Description: US 311 to Guilford County  
Existing: 4 lane freeway  
Proposed: 6 lane freeway

**STIP Number:** N/A  
Route Name: Business I-40 (US 421)  
Interchange at Big Mill Farm Road  
Hopkins Road to S. Main Street  
Existing: N/A  
Proposed: New interchange; 4 lanes divided

**STIP Number:** N/A  
Route Name: Ebert/Stratford Connector  
Description: New alignment from Ebert Road  
to South Stratford Road (US 158)  
Existing: N/A  
Proposed: New 3 lane

**STIP Number:** N/A  
Route Name: Forum Parkway Connector  
Description: Forum Parkway (SR 3955) to  
University Parkway (NC 66)  
Existing: N/A  
Proposed: New 2 lane

**2026-2035**

**STIP Number:** R-2577B  
Route Name: US 158  
Description: NC 66 to Guilford line  
Existing: 2 lane  
Proposed: 4 lanes divided

**STIP Number:** U-2826  
Route Name: US 52  
Description: I-40 Bypass to proposed Northern  
Beltway Interchange  
Existing: 4-6 lane freeway  
Proposed: 6 lane

**STIP Number:** I-4924  
Route Name: I-73 - I-74 Connector  
(Regional Airport Connector)  
Description: Northern Beltway/West Mountain St  
to Guilford County  
Existing: N/A  
Proposed: New 4 lane freeway

**STIP Number:** R-2247  
Route Name: Northern Beltway (Western Loop)  
Description: Interstate-40 to US 52  
Existing: N/A  
Proposed: New 4 lane freeway

**STIP Number:** R-2247A  
Route Name: Northern Beltway (Western Loop) A  
Description: US 158 (S. Stratford Road) to I-40  
Existing: N/A  
Proposed: New 4 lane freeway

**STIP Number:** U-2730  
Route Name: NC 65 (Bethania-Rural Hall Rd)  
Description: US 52 to NC 66 in Rural Hall  
Existing: 2 lane  
Proposed: 4 lane

**STIP Number:** N/A  
Route Name: Business Interstate 40 (US 421)  
Description: Northern Beltway to Guilford Co.  
Existing: 4 lane freeway  
Proposed: 6 lane freeway

**STIP Number:** N/A  
Route Name: US 311 Connector  
Description: I-40 to Business I-40  
Existing: N/A  
Proposed: New 4 lane divided

## Truck Route Recommendations

Trucks should be defined as vehicles with a manufacturer's gross vehicle weight of 33,000 pounds or more. This definition excludes most straight, panel, and delivery trucks, but includes large trucks with more than two axles, such as tractor-trailers and tandem axle dump trucks. This definition also excludes public service vehicles, such as garbage collection trucks.

Upon designation of routes, signs should be posted at the city limits, highway exits, and other appropriate locations directing truck drivers to streets which permit their movements. Restrictions may include limiting travel to US and NC routes or designated/signed routes through the city. Within the city limits, consideration could be given to amending the local ordinance to specifically prohibit through trip truck movements on local streets. Prohibition of trucks on any segment of state-maintained roadways will require approval from NCDOT.

Truck designations for major routes and industrial streets could prove beneficial. Utilization of these routes provides better defined east-west and north-south freight corridors. Likewise, truck traffic should be discouraged on roadways that do not meet the design criteria necessary to facilitate heavy truck traffic.

Increased industrial development will require efficient truck access and circulation to the arterial system, ultimately improving freight mobility while limiting cut-through truck traffic in neighboring subdivisions. Additional tasks associated with establishing a series of truck routes through the urban area include:

- Work with NCDOT to prioritize resurfacing of designated routes in an effort to reduce noise and vibration from trucks.
- Adjust signal timing along high priority routes to allow uninterrupted through movements based on posted speed limits. The result will be improved travel times and reduced noise and air pollution.
- Publish and distribute educational materials to businesses and industries concerning proposed designated truck routes.
- Work with NCDOT to make improvements to critical intersections on truck routes to facilitate and encourage their use by truck operators. Improved turning radii, lane width and the provision of dedicate turn lanes will greatly improve the efficiency and safety of these corridors.
- Identify streets in industrial areas that function as industrial collectors and work with stakeholders to evaluate and implement the appropriate cross-section

## Air Freight Recommendations

Piedmont Triad leaders have placed high priority on leveraging the FedEx hub and the Region's highway and other location and logistics assets to develop a world-class competency in global logistics and air cargo for business recruitment and economic growth. An immediate need is for coordinated Region-wide planning and local government partnerships to accomplish this,

thereby helping Piedmont Triad International Airport (PTI) to achieve its full potential as an engine for job creation and economic development, not only immediately around the airport but also throughout the entire 12-county Piedmont Triad Region.

Air logistics, which includes air cargo, air express, and their supporting logistics services, represented a \$ 250 billion industry in 2006. It is expected to nearly triple by 2025, while international air-express shipments are expected to increase at least four-fold during this period (Boeing Company, 2006). Already, air cargo and air express are the preferred modes of international shipping of higher value to weight B2B transactions in microelectronics, automobile electronic components, aircraft parts, mobile telephones, fashion clothing, pharmaceuticals, optics and small precision manufacturing equipment, as well as many perishables such as seafood and fresh cut flowers.

The FedEx Mid-Atlantic hub represents a unique opportunity for the Piedmont Triad to attract new investment to the Region while boosting the competitiveness of existing firms in the area. Full leveraging of the hub requires incorporating six broad functional capabilities. These six capabilities provide examples of key infrastructure elements for each.

1. Multi-modal Transportation System with Access to Local, National and Global Transportation Networks;
2. On-site Cargo Processing Capability to Supplement the FedEx Hub;
3. On-site Cargo Transport System;
4. Shared Communications System with Transparent User Interface;
5. Access to On-site and Remote Services for Commercial Support, Vocational Education and Worker Training; and
6. Arterial Movements Unencumbered by Congestion.

Construction at and around Piedmont Triad International Airport to prepare for the FedEx hub began in the first quarter of 2004. A third runway and connecting road will be constructed to accommodate the additional FedEx flights, plus provide capacity for more commercial airline traffic. Bryan Boulevard, the main airport thoroughfare, and other secondary roads will be relocated and expanded to accommodate the additional traffic and allow room for runway construction and operation. The initial FedEx hub will consist of a one million square foot facility which will be capable of sorting 24,000 packages per hour, and be served by 20-25 airplanes daily. The hub is anticipated to begin operation by 2009.

### **Winston-Salem Air Freight**

The Forsyth County Airport Commission and the City of Winston-Salem Economic Development Office are cooperatively working to develop a 50-acre office/light industry Airport Business Park. This is a large part of the Liberty Street Revitalization Corridor Project. The park will be marketed to uses that need to be close to air, rail, and interstate transportation. The business park also will be marketed toward those uses that could result from or support the new Federal Express hub planned for the Piedmont Triad International Airport. This is a long-range project and is currently in its initial stages of development. Land acquisition is complete, and the City will do the developing instead of hiring out. Bidding for Phase I (infrastructure and site grading) has begun, and will hopefully get underway this fall.

## **Summary Recommendations**

The following recommendations are a set of action items that are intended to improve the efficient and safe movement of goods and services in the study area:

- Continued expansion of the highway system to provide improved access and circulation around major transportation corridors
- Continued investments within the vicinity of PTIA as outlined in the Airport Area Plan, Heart of The Triad Comprehensive Plan, Thoroughfare and Collector Street Plan
- Coordinate needed improvements to meet the advancements of the PTIA logistical hub, and proposed PTI Air Logistics Hub and Piedmont Triad Aerotropolis
- Implementation of an Intermodal Management System
- Coordinate with NCDOT on the development of future rail improvements
- Closely coordinate area roadway planning with freight objectives, including access and mobility in the context of other community planning objectives