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1.0 Introduction

Introduction

Metropolitan Planning Organizations (MPO) are required to follow the Federal Highway Administration's (FHWA) regulations when addressing transportation. The FHWA prepared an MPO transportation planning guidance document to address updated and new regulatory requirements of the SAFETEA-LU of 2006. The Metropolitan Transportation Planning Process: Key Issues A briefing Notebook for Transportatin Decision Makers, Officials, and Staff states that "…the MPO is responsible for making sure that freight movement is considered in the overall transportation planning process".

The Gaston Urban Area Metropolitan Planning Organization (GUAMPO) initiated a freight planning study during the spring of 2007 to incorporate freight related issues into planning activities. In addition, the results of the freight study will be incorporated into the current 2030 Long Range Transportation Plan (LRTP).

This study's efforts included three tasks: project coordination, freight assessment, and strategy development. The Project Coordination included working with planning partners and the community to assess freight issues and develop solution strategies. The Freight Assessment involved analyzing freight related data and determining the relationship between existing plans and their impact to the movement of freight. The Strategy Development included solution strategies to address the freight issues identified during the Freight Assessment.

The following sections of this report document the tasks completed during the freight study. GUAMPO recognizes that freight planning activities must be integrated into the transportation planning process; therefore freight related data will be updated on a regularly scheduled basis and strategy solutions will be revisited in the future.

2.0 Project Coordination

Project Coordination

Establishment of Working Group

GUAMPO staff established an Advisory Working Group consisting of stakeholders and technical professionals to provide information and feedback throughout the planning process. The group included representatives from local Planning, Public Works, and Community and Economic Development departments, and played an important role in shaping the organizational direction of the Freight Planning study.

The working group participated in the development of the study's goals and objectives through the project coordination process.

Goal

To satisfy the SAFETEA-LU requirements by including freight planning in the 2030 GUAMPO Long Range Transportation Plan.

Objectives

- Identify the Gaston Urban Area's freight network
- Determine the freight impact on existing infrastructure
- Assess the community's perception of freight
- Identify existing transportation projects with freight impact
- Create a freight planning strategy

The objectives were reviewed during the strategy development task to ensure that the recommendations supported the objectives, and then used as qualitative evaluation measures for the study.

Public Involvment

GUAMPO recognizes that the success of any community improvement initiative is dependent upon a meaningful public outreach effort. Therefore, the GUAMPO Freight Planning process was designed to be responsive to citizen participants. Throughout the planning process, the team was committed to utilizing the knowledge and understanding of the community to address key issues and offered multiple opportunities for engagement at varying levels during the study process.

Public Participation Plan

To ensure that the public was included in the development of the freight plan, a public participation plan was produced to identify methods for engaging the public throughout the planning process, as well as a time frame within which that engagement was to occur. The plan was updated periodically to reflect scheduling changes and the completion of tasks. Minutes for each public meeting were also included in the plan as they became available. See Appendix A for the entire public participation plan.

Stakeholder Interviews

One-on-one interviews with stakeholders were conducted to understand the needs of various groups and individuals, as well as which aspects of current plans and regulations for the study area were working and which aspects need modification. The MPO project team identified these organizations and individuals, and encouraged their inclusion and participation at key points throughout the process. Stakeholders interviewed included:

- Members of the Freight Community
- Neighborhood and business leaders
- Members of the real estate community
- City planners and other departmental staff
- City council and/or other elected officials

A majority of the stakeholder interviews were conducted over the telephone, in which the following questions were asked:

1. How does freight impact your organization? (if applicable)
2. What percentage of your company's finances are spent on freight related issues? (if applicable)
3. How does the existing network of roads, train tracks, bridges, etc. work in terms of the flow of freight? Are there any issues with trucks having to take indirect, inconvenient or bad routes? Are trains having to travel on tracks that are falling apart? If so, where does this happen, and what seems to be the problem?
4. What are your major safety issues?
5. How can the Metropolitan Planning Organization assist with any of your issues related to freight?
6. Finally, would you be at all interested in participating on the Gaston Urban Area Metropolitan Planning Organization freight taskforce? If so, how involved would you like to be?

The interviews provided the team with information with respect to existing transportation networks and how those networks impact freight operations. Many of the interviewees identified the same, or similar, issues. For example, the interchange at I-85 and US 321 was identified as a major problem by nearly every stakeholder interviewed.

Although the interviewees provided information regarding transportation issues, they were less willing to provide financial information. For a comprehensive set of responses from each stakeholder interviewed, see Appendix B.

3.0

3.0 Freight Assessment

3.0

3.0 Freight Assessment

Freight Assessment

The Freight Assessment includes a technical analysis of existing freight data. The objective is to develop a regional freight profile for the Gaston Urban Area including a GIS freight database by collecting all publicly available freight data and economically feasible private data. This assessment is designed to be an on-going effort and is based on publicly available data.

In order to analyze and report on truck volumes at all available locations in the Gaston Urban Area, GUAMPO coordinated with the North Carolina Department of Transportation (NCDOT), which maintains an in-house database of the most recent traffic data throughout the state. In addition, outputs from the travel demand model were used to aid in understanding the future truck volumes throughout the region.

Coordinating with the Metrolina Regional Travel Demand Model staff, GUAMPO obtained future truck volume information in the model for the Gaston MPO region. GUAMPO used the regional travel demand model's forecasted volumes for the Gaston Urban area and existing data from NCDOT to identify where truck volumes are likely to meet congestion in the future.

A regional freight system profile was developed for each of the regionally significant freight and goods systems that support regional, state, national and international freight movement. Each profile includes an evaluation of the characteristics of existing functions including physical, operational, and market characteristics of the regional freight movement system. This document presents the identified and highlighted priority freight, goods, and services movement corridors and networks in the region.

3.1 Highway System Freight Profile

The highway system freight profile includes an assessment of the roadway network for trucks. The North Carolina National Truck Network for Surface Transportation Administration Act (STAA) (double trailers, 48 foot, and 53 foot) vehicles identifies I-85 and US 321 (south of I-85) as truck routes. Most of the volume on the other roadways identified in the profile is for local freight trips.

The data collection includes highway traffic volumes, speed, capacity, vehicle mix, and physical constraints of the highway on key regional freight corridors. The data was used to identify priority freight corridors in the Gaston Urban Area. Based on the analysis results, the priority corridors are I-85, US 321, and US 29/74 for the existing years and for the 2020 projections.

The following section describes the role of the region's highways in supporting freight activities and identifies regional priority freight and goods movement corridors and networks.

Regional Freight Corridors

Several major roadways intersect Gaston County, including one interstate highway, three US highways, and seven state highways, listed as follows:

- Interstate highways: Interstate 85
- US Highways: US Highways 29, 74, and 321
- State Highways: NC Highways 7, 16, 27, 161, 273, 274, 275, and 279

Trucking is one of the Charlotte area's major industries. The Charlotte area is home to over 300 trucking companies, with more than 50 trucking companies providing freight service in Gaston County. According to the Charlotte Chamber, over 47 percent of the nation's top 100 trucking companies are in Charlotte, including all top 10 firms. Due to Gaston's proximity to Charlotte, most of these trucking companies utilize Gaston County roadways for their freight services. Many companies, including those not based in the Charlotte metro area, pass through Gaston County on their way to other major destinations, such as Charlotte, North Carolina; Atlanta, Georgia; Richmond, Virginia; and the port cities of Wilmington, North Carolina; Morehead City, North Carolina; Charleston, South Carolina; and Norfolk, Virginia.

A brief description of each of the major roadways utilized in Gaston County is as follows:

INTERSTATE HIGHWAY 85:

A major thoroughfare that stretches 668 miles between Montgomery Alabama and Petersburg, Virginia and transects central Gaston County. It links Gastonia with Charlotte and other major cities such as Greensboro and Richmond to the north, and Greenville/Spartanburg and Atlanta to the south.

US HIGHWAY 29 AND US HIGHWAY 74:

These are major thoroughfares within Gaston County. US 29 is 1,036 miles along and runs from Baltimore, Maryland to Pensacola, Florida; it serves as an alternate route to I-85 through North Carolina. US 74 is a 524-mile corridor that runs between Chattanooga, Tennessee and Wilmington, North Carolina. It carries vehicles from Charlotte to Wilmington, the largest port city in North Carolina. The North Carolina Ports Authority operates an intermodal facility in Charlotte.

US HIGHWAY 321:

Transecting the middle of Gaston County, US Highway 321 is a major thoroughfare that connects Gastonia, the County seat, with transcontinental Interstate 40 and Hickory, North Carolina. US 321 is approximately 526 miles in length and runs from Hardeeville, South Carolina to Knoxville, Tennessee.

NC HIGHWAY 7:

NC Highway runs from Ozark Avenue in the City of Gastonia to approximately the Gaston Mecklenburg line in Belmont. This roadway is approximately 20 miles.

NC HIGHWAY 16:

NC Highway 16 is a 150-mile corridor that begins at the North Carolina/Virginia border, and ends in Waxhaw, North Carolina near the South Carolina border. There is only a small segment of NC 16 that traverses the northern portion of Gaston County.

NC HIGHWAY 27:

NC Highway 27 is a major thoroughfare that stretches approximately 200 miles across the state, from Cleveland County to Johnson County. Major junctions in Gaston County include Interstate 85, and it also intersects Interstate 77, 277, and US 74 in nearby Charlotte.

NC HIGHWAY 161:

NC Highway 161 is approximately a 10-mile corridor that connects western Gaston County with cities such as Bessemer City. NC 161 intersects Interstate 85 and US Highway 74, both major transportation thoroughfares.

NC HIGHWAY 273:

NC Highway 273 is a corridor that transects eastern Gaston County. NC Highway 273 crosses Interstate 85 and NC Highway 27 in Mount Holly and is approximately 20 miles in length.

NC HIGHWAY 274:

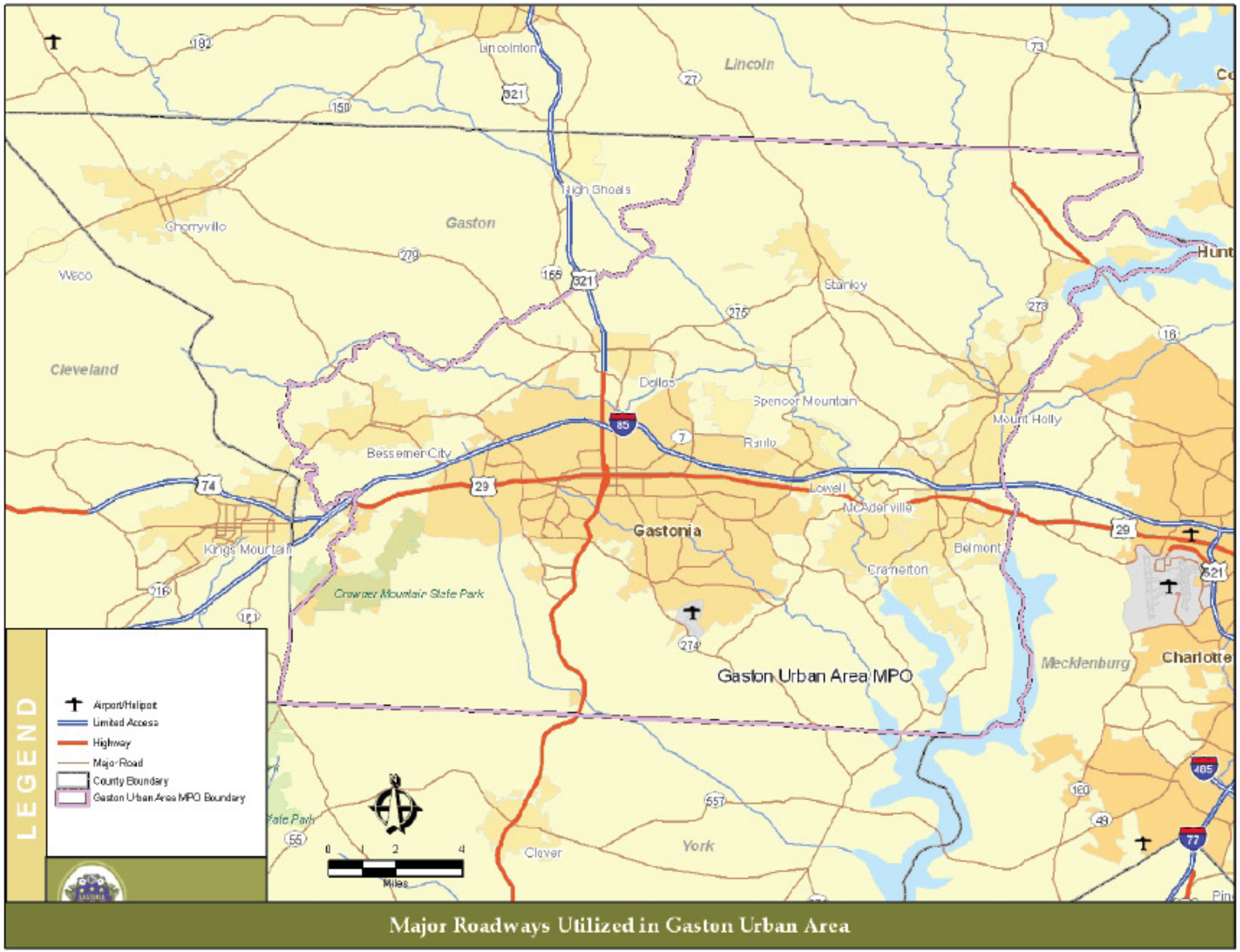
NC Highway 274 is approximately a 35-mile corridor that connects Gastonia with other cities, states, and regions, such as York County, South Carolina. It is a north-south corridor that crosses Interstate 85 and US Highway29/US Highway 74. Additionally, NC Highway 274 is slated for improvements on the NCDOT Transportation Improvement Program (TIP). A 1.4-mile section near Bessemer City is to be widened to five lanes, with construction beginning in 2009 (Tip No. U-3405). A 2.8-mile section in Gastonia is currently being widened to a 5-lane section (TIP No. U-2408).

NC HIGHWAY 275:

NC Highway 275 is an east-west corridor that connects Dallas and Bessemer City. It intersects US Highway 321 and NC 27 and is approximately 15 miles in length.

NC HIGHWAY 279:

NC Highway 279 is approximately a 25-mile corridor that transects Gaston County, connecting Stanley and Dallas to Gastonia. It intersects major corridors, including US Highway 321, Interstate 85, and US Highway 29/US Highway 74.



Major Roadways Utilized in Gaston Urban Area

Figure 1: **Major Roadways Utilized in Gaston Urban Area**

Traffic Volumes

Traffic data was reviewed to profile existing traffic volumes along the regional freight corridors. Interstate 85 accommodates the largest volumes of traffic in Gaston County, with the US Highways also carrying large volumes. NCDOT performs traffic counts for each location every two years, the latest traffic counts available are from the 2004-2006 time period. A summary of the latest Average Daily Traffic (ADT) volumes, measured in vehicles per day (vpd) is summarized in Table 1.

Future traffic data was also reviewed to profile projected traffic volumes along the regional freight corridors. Interstate 85 would continue to accommodate the largest volumes of traffic in Gaston County, with the proposed Garden Parkway also carrying large volumes.

A summary of future ADT volumes is summarized in Table 2.

Speed Limits

The existing speed limits along regional freight corridors are as follows in Table 3.

Table 1: Existing Traffic Volumes

Segment	ADT (vpd)	Details:
Interstate 85	48,000 – 120,000	Lowest volumes are in the farthest western portion of the county; highest volumes are found in the central to eastern portion of the county around major business and commercial interchanges.
US 29/74	9,000 – 35,000	Lowest volumes are in the western portion of the corridor; highest volumes are east of downtown Gastonia, near the I-85 interchange at Cox Road.
US 321	8,700 – 47,000	Lowest volumes are in the southern portion of the corridor at the South Carolina border; highest volumes are found at the I-85 corridor interchange.
NC 7	950 – 12,000	Lowest volumes are near Gaston/ Mecklenburg County line; highest volumes are near the City of Gastonia at the Ozark Avenue intersection.
NC 16	3,600 – 19,000	Lowest volumes are near the Gaston County/Mecklenburg County line; highest volumes are located around the NC 16 Bypass to the Gaston County/ Lincoln County line.
NC 27	2,400 – 11,000	Lowest volumes are located in the north-eastern portion of the county, near the county line; highest volumes are located near the town of Mt. Holly.
NC 161	4,400 – 6,400	Volumes are relatively consistent along this corridor.
NC 273	4,300 – 24,000	Lowest volumes are in the southern section of the corridor; highest volumes are around the I-85 corridor.
NC 274	4,300 – 22,000	Lowest volumes are in the northern section of the corridor; highest volumes are around Robinwood Road, south of the I-85 corridor.
NC 275	4,900 – 18,000	Lowest volumes are north of Bessemer City; highest volumes are around the US 321 interchange.
NC 279	4,900 – 24,000	Lowest volumes in are the northern section of the corridor; highest volumes are around the City of Gastonia, downtown.
Source - NCDOT Traffic Survey Unit		

Table 2: Traffic Volumes, 2030		
Segment	ADT (vpd)	Details:
Interstate 85	44,600 – 84,500	Lowest volumes are in the farthest western portion of the county; highest volumes are found in the farthest eastern portion of the county around the Gaston County/Mecklenburg County line.
US 29/74	30,700 – 46,600	Lowest volumes are in the central portion of the corridor, near Gastonia and the US 321 intersection; highest volumes are in the farthest eastern portion of the county around the Gaston County/ Mecklenburg County line.
US 321	11,900 – 40,100	Lowest volumes are in the northern portion of the corridor near the Gaston County line; highest volumes are found at the I-85 corridor intersection.
NC 7	1,400 – 13,5000	Lowest volumes are near the Gaston Mecklenburg County line: highest volumes are near the City of Gaston at the Ozark Avenue intersection.
NC 16	Not available	
NC 27	12,700 – 19,000	Lowest volumes are in the northeastern portion of the county, near the county line; highest volumes are near the town of Mt. Holly.
NC 161	7,900 – 12,900	Lowest volumes are near the southern portion of the corridor near the Gaston County line; highest volumes are in the central portion of the corridor, near the town of Kings Mountain.
NC 273	12,100 – 26,000	Lowest volumes are in the northern section of the corridor; highest volumes around the I-85 corridor.
NC 274	4,900 – 28,500	Lowest volumes are in the southern section of the corridor; highest volumes are around Chester Street/York Street, near downtown Gastonia.
NC 275	7,100 – 17,100	Lowest volumes are north of Bessemer City; highest volumes are near the town of Dallas.
NC 279	10,400 – 35,100	Lowest volumes are in the northern section of the corridor; highest volumes are around the I-85 interchange, east of downtown Gastonia.
Garden Parkway (future)	18,900 – 57,000	Lowest volumes are anticipated near the northern terminus/ intersection with US 321; highest volumes are anticipated near the Gaston County/Mecklenburg County line.
Belmont/Mt. Holly Loop (future)	9,400 – 23,500	Lowest volumes are anticipated near the southern terminus/ intersection with NC 27; highest volumes are anticipated near the intersection with US 29/74.
Gastonia-Mt. Holly Connector (future)	12,300 – 28,100	Lowest volumes are anticipated near the southern terminus/ Aberdeen Blvd; highest volumes are anticipated near the Mecklenburg County line.
Source: 2030 data provided by Metrolina Regional Travel Demand Model. Some of the roadways experience decreases in traffic volumes in 2030; this can be attributed to new roadway facilities that were included in the regional model and are planned to be completed by the year 2030, such as the Garden Parkway and completion of Interstate 485.		

Table 3: Speed Limits

Segment	Speed Limit (mph)
Interstate 85	60 - 65
US 29/74	35 - 55
US 321	35 - 65
NC 7	20 - 45
NC 16	35 - 55
NC 27	20 - 55
NC 161	35 - 55
NC 273	35 - 50
NC 274	35 - 45
NC 275	25 - 45
NC 279	25 - 55
Garden Parkway (future)	65
Belmont/Mt. Holly Loop (future)	45
Gastonia-Mt. Holly Connector (future)	45
Source: Data provided by Metrolina Regional Travel Demand Model.	

Table 4: Truck Volumes, 2030

Segment	Truck ADT (vpd)	Percentage of Total ADT
Interstate 85	4,359 – 9,569	5.2 – 11.3
US 29/74	920 – 3,752	2.0 – 8.0
US 321	638 – 4,243	1.6 – 10.6
NC 7	68 - 864	0.9 – 7.9
NC 16	Not available	
NC 27	478 – 1,625	2.5 – 8.6
NC 161	722 – 1,696	5.6 – 13.1
NC 273	448 – 2,091	1.7 – 8.0
NC 274	20 – 1,503	0.0 – 5.4
NC 275	517 – 1,890	3.0 – 11.0
NC 279	750 – 2,023	2.1 – 5.8
Garden Parkway (future)	1,245 – 4,421	2.2 – 7.8
Belmont/Mt. Holly Loop (future)	717 – 1,704	3.1% - 7.3
Gastonia-Mt. Holly Connector (future)	1,104 – 3,014	3.9% - 10.7
Source : 2030 data provided by Metrolina Regional Travel Demand Model.		

Vehicle Mix

The U.S. Department of Transportation projects that the national freight volume, including truck, rail, water, and air mode transportation volumes, will more than double by 2020. The Federal Highway Administration projects that truckers will see a 75 percent increase in freight tonnage by 2020. The percentage of truck volumes projected to travel on Gaston County roadways by 2030 is in Table 4.

The North Carolina Department of Transportation's Traffic Survey Unit prepared the following table (Table 5) which shows travel activity by vehicle type based on roadway functional classifications in North Carolina. According to the NCDOT data, truck traffic currently contributes to 17.2% of the total traffic on interstate highways in urban areas, such as Gaston County, and 7.2% on arterial roadways.

Utilizing the referenced NCDOT data (Table 5) and the Metrolina Regional Travel Demand Model, existing and future truck volumes on major road networks in Gaston County are estimated in Table 6. The data shows that I-85, US 321, and US 29/74 are the current primary corridors for carrying the largest volumes of truck traffic. In 2030, I-85,

Table 5: Travel Activity by Vehicle Type, 2004

Functional System	PERCENT OF TRAVEL						
	Motorcycles (optional)	Passenger cars (2 axle, 4 tire)	Light trucks (Other 2 axle, 4 tire)	Buses	Single-unit trucks	Combination Trucks	Total
RURAL							
Interstate	0.5	56.8	10.8	1.1	5.2	25.6	100.0
Other Arterial	0.4	69.9	16.4	0.7	4.9	7.7	100.0
Other Rural	0.4	73.5	17.1	0.6	4.7	3.7	100.0
URBAN							
Interstate	0.4	68.6	12.9	0.9	4.2	13.0	100.0
Other Arterial	0.3	77.4	14.6	0.5	3.6	3.6	100.0
Other Urban	0.4	79.9	14.1	0.5	3.5	1.6	100.0
Source: NCDOT Traffic Survey Unit							

Table 6: Existing and Future Truck Volumes				
Segment	Existing ADT (vpd)	Existing Truck Volumes (vpd)	2030 ADT (vpd)	2030 Truck Volumes (vpd)
Interstate 85	48,000 – 120,000	8,256 – 20,640	44,600 – 84,500	4,359 – 9,569
US 29/74	9,000 – 35,000	648 – 2,520	30,700 – 46,600	920 – 3,752
US 321	8,700 – 47,000	626 – 3,384	11,900 – 40,100	638 – 4,243
NC 7	950 – 12,000	68 - 864	1,400 – 13,500	120 – 1,072
NC 16	3,600 – 19,000	259 – 1,368	Not available	Not available
NC 27	2,400 – 11,000	173 – 792	12,700 – 19,000	478 – 1,625
NC 161	4,400 – 6,400	317 – 461	7,900 – 12,900	722 – 1,696
NC 273	4,300 – 24,000	310 – 1,728	12,100 – 26,000	448 – 2,091
NC 274	4,300 – 22,000	310 – 1,584	4,900 – 28,500	20 – 1,503
NC 275	4,900 – 18,000	353 – 1,296	7,100 – 17,100	517 – 1,890
NC 279	4,900 – 24,000	353 – 1,728	10,400 – 35,100	750 – 2,023
Garden Parkway	Not Available	Not Available	18,900 – 57,000	1,245 – 4,421
Belmont/Mt. Holly Loop	Not Available	Not Available	9,400 – 23,500	717 – 1,704
Gastonia-Mt. Holly Connector	Not Available	Not Available	12,300 – 28,100	1,104 – 3,014
Source: Existing data provided by NCDOT Traffic Survey Unit and 2030 data provided by Metrolina Regional Travel Demand Model.				

US 321, and US 29/74 will continue to be significant corridors for truck traffic, but the proposed Garden Parkway and the proposed Gastonia – Mt. Holly Connector will also carry a significant amount of truck traffic in the region by the year 2030. These new facilities will help relieve congestion on the existing facilities by offering additional options.

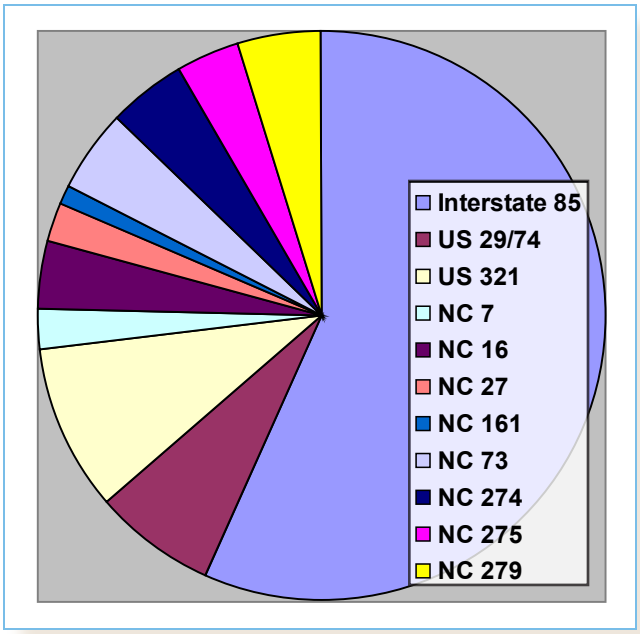


Figure 2: Existing Freight AADT

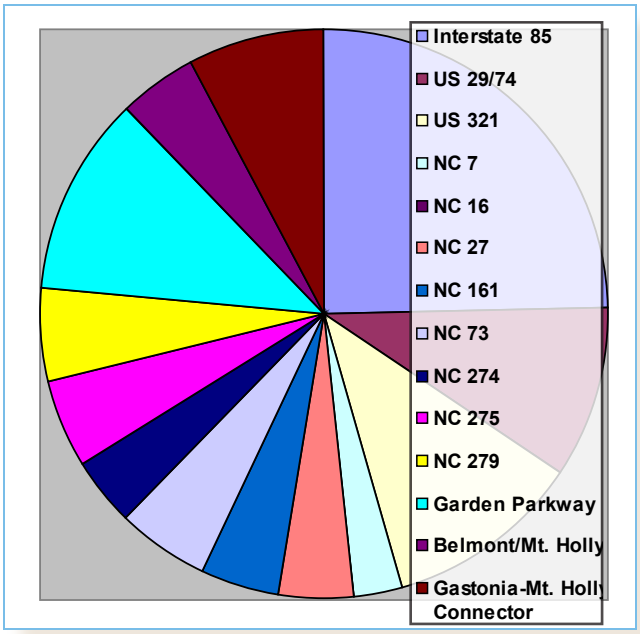
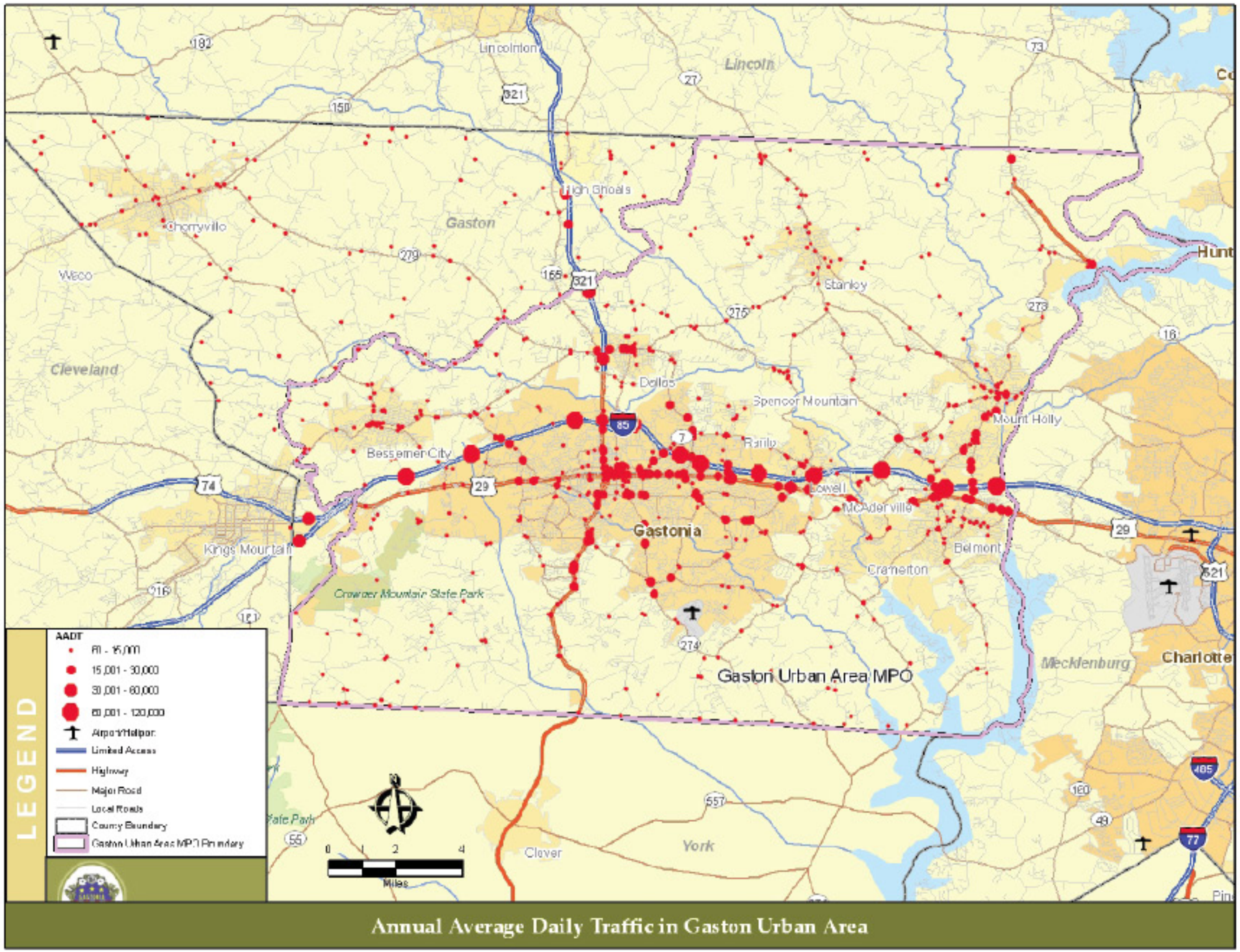


Figure 3: 2030 Freight AADT



Annual Average Daily Traffic in Gaston Urban Area

Figure 4: **Annual Average Daily Traffic in Gaston Urban Area**

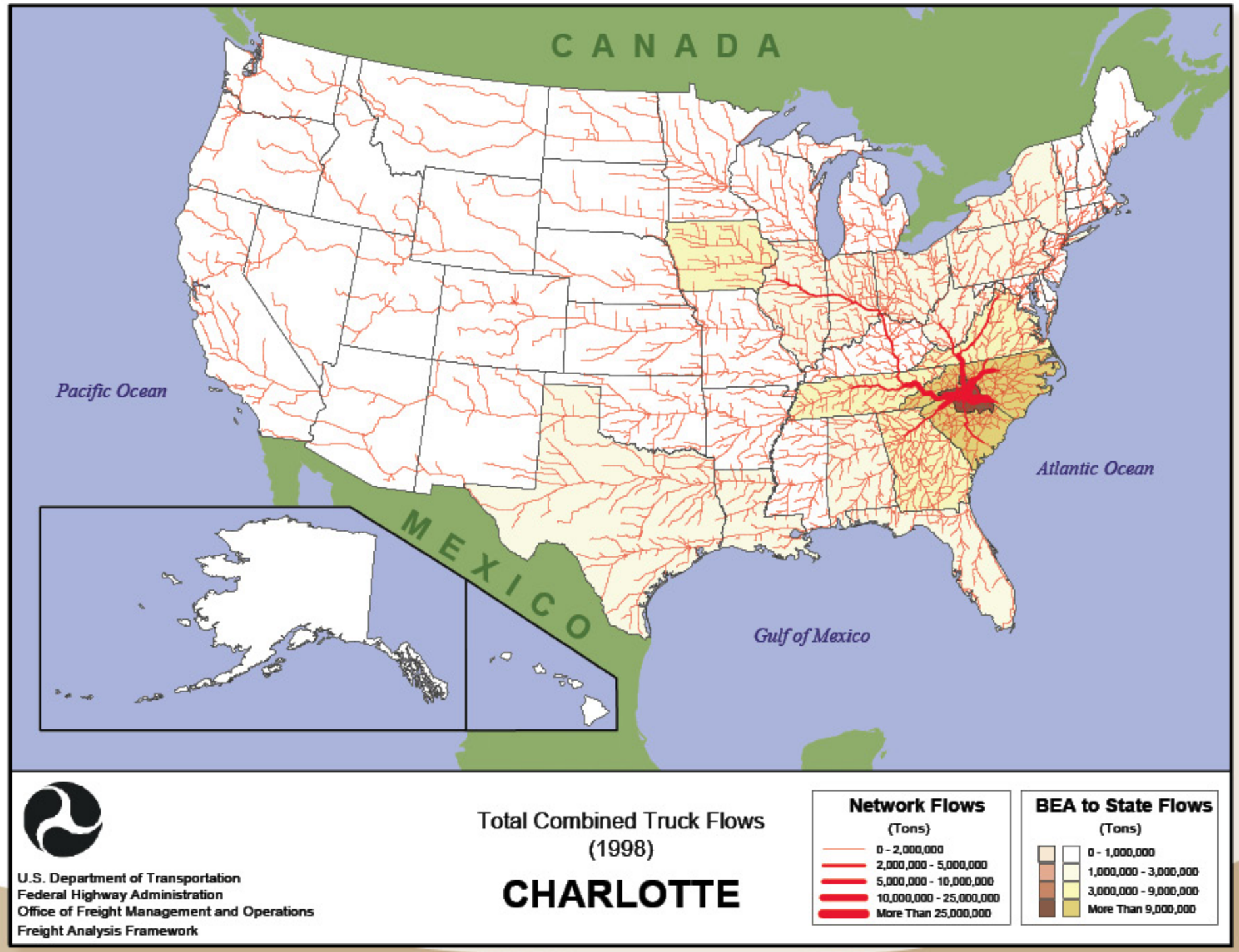


Figure 5: **Charlotte Total Combined Truck Flows, 1998**

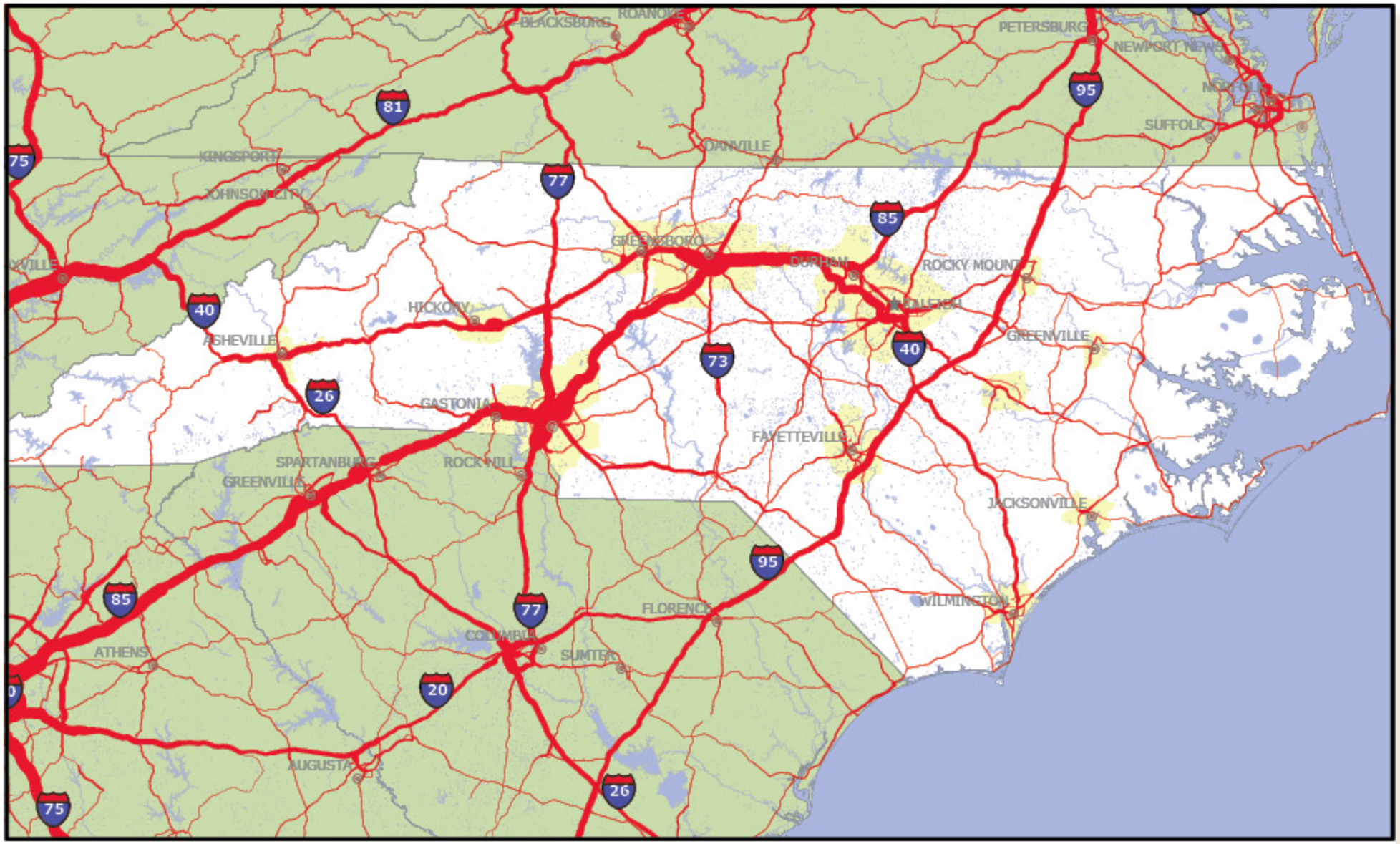


Figure 6: North Carolina Estimated Average Annual Daily Truck Traffic, 1998

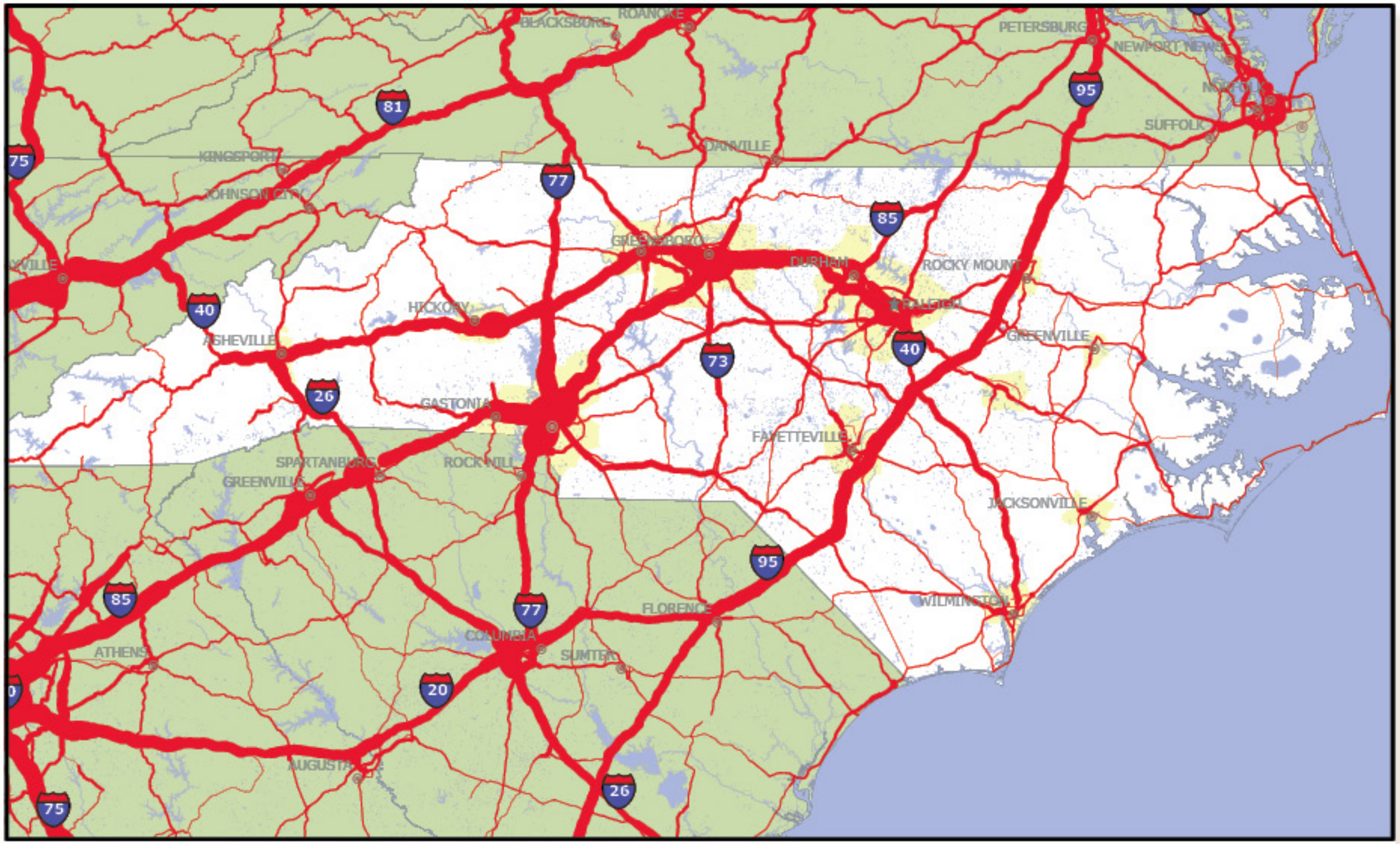


Figure 7: North Carolina Estimated Average Annual Daily Truck Traffic, 2020

Transporting Commodities

The U.S. Department of Transportation developed the Freight Analysis Framework (FAF), a comprehensive tool for freight data and analysis. The FAF provides data regarding highway freight shipments to, from, and within North Carolina (U.S. Department of Transportation, U.S. Department of Commerce, 2004). Current (1998) truck traffic within the Charlotte region is exhibited in Figure 3. As evidenced by the data, truck traffic is expected to grow substantially by the year 2020, with much of that growth occurring in urban areas and on interstate highway systems (see Figures 4 and 5).

Truck traffic accounted for approximately 13 percent of the 1998 average annual daily truck traffic (AADTT) on the FAF road network. Of those, approximately 14 percent involved in-state shipments, and 10 percent involved trucks traveling across state lines to other markets. Within Gaston County, Interstate 85 and US Highway 321 are shown as the primary truck traffic corridors. A summary of highway shipments having either an origin or destination in North Carolina is presented in Table 7 below.

Table 7: Highway Shipments To, From, and Within North Carolina

	1998	2010	2020
By weight (tons)	426	641	808
By Value (billions)	$381	$719	$1,152

Source - Federal Highway Administration, Management and Operations, Freight Analysis – North Carolina. Accessed July 2006.

Table 8: Top Five Commodities by Weight Shipped To, From, and Within North Carolina*

Commodity	1998 (in tons)	2020 (in tons)
Nonmetallic Minerals	120,000,000	161,000,000
Secondary Traffic	75,000,000	211,000,000
Lumber/Wood Products	46,000,000	96,000,000
Chemicals/Allied Products	41,000,000	66,000,000
Farm Products	38,000,000	43,000,000

*Includes all modes of transportation (air, highway, rail, and water).
Source - Federal Highway Administration, Management and Operations, Freight Analysis – North Carolina. Accessed July 2006.

Table 9: Top Five Commodities by Value Shipped To, From, and Within North Carolina*

Commodity	1998 (in billions)	2020
Secondary Traffic	$77	$324
Textile Mill Products	$49	$59
Chemicals/Allied Products	$45	$110
Transportation Equipment	$41	$109
Food/Kindred Products	$34	$119

*Includes all modes of transportation (air, highway, rail, and water).
Source : Federal Highway Administration, Management and Operations, Freight Analysis – North Carolina. Accessed July 2006.

The state freight transportation system network moves a variety of commodities, including minerals, lumber and wood products, chemicals, food products, and secondary traffic (defined as freight flows to and from distribution centers or through intermodal facilities). A summary of the top commodities shipped to, from, and within North Carolina, by all modes of transportation is included in Table 8 and Table 9 below.

Physical Constraints

Currently Surface Transportation Assistance Act (STAA) dimensioned vehicles are not allowed to access US 321 because of the current capacity and configuration of the I-85/US 321 Interchange. These vehicles include twin-trailers and 48-53 foot long single trailers. This restriction forces STAA vehicles to use I-85, I-77, and I-40 to access Hickory and points westward. This diversion creates increased travel time and fuel consumption.

The Metrolina Regional Travel Demand Model for the year 2030 currently includes all of the projects in the Transportation Improvement Program (TIP) and GUAMPO's Long Range Transportation Plan (LRTP). As funding or priorities change that impact projects being built, such as the Garden Parkway, greater pressure from automobile and freight traffic will occur on existing facilities like I-85, US 29/74, and US 321.

According to a report generated by the Rand Corporation (Increasing the Capacity of Freight Transportation, 2007), examples of physical constraints to the trucking industry include weather, accidents, and increased security inspections. Other physical constraints in Gaston County may include urban (residential neighborhood) exposure for the transport of hazardous materials, variable transit times, congestion, construction delays, and connectivity.

3.2 Rail System Freight Profile

Although trucks move the majority of freight in the U.S., rail also plays a crucial role in freight movements. According to the AASHTO Freight Transportation Network, the freight rail system currently carries 16 percent of the U.S. freight by tonnage. Without rail hauling freight, 92 billion miles of truck travel would be added to the trucking industry, costing approximately $64 billion to the highway system for road improvements over the next 20 years. However, with continued investment in the rail industry, rail is expected to continue moving its fair share of freight. Significant investment and improvements to the current rail system would allow freight rail to carry 17 percent of freight tonnage in 2020, as compared to the 16 percent it carries today.

Federal Railroad Administration data indicates that rail movements generally link production centers to consumption areas, the exception being shipments of coal and grains. Most rail traffic with an origin or destination within North Carolina has traveled through more than one state. A summary of highway shipments having either an origin or destination in North Carolina is presented in Table 10 below.

Table 10: Rail Shipments To, From, and Within North Carolina

	1998	2010	2020
By weight (tons)	79	104	121
By Value (billions)	$15	$26	$41

Source: Federal Highway Administration, Management and Operations, Freight Analysis – North Carolina. Accessed July 2006.

As previously discussed, the state freight transportation system network moves a variety of commodities, including minerals, lumber and wood products, chemicals, food products, and secondary traffic (defined as freight flows to and from distribution centers or through intermodal facilities). A summary of the top commodities shipped to, from, and within North Carolina, by all modes of transportation, including rail, is included previously in Table 8 and Table 9.

NORFOLK SOUTHERN OVERVIEW

Norfolk Southern (NS) has two lines through Gaston County, NC. One is the former Southern Railway Washington to Atlanta mainline which runs geographically east and west through the middle of the county. The other line is the former Carolina and Northwestern Railway which runs north and south. Both lines connect in the city of Gastonia to the NS mainline.

MAINLINE

The former Southern Railway mainline, now NS, crosses the Catawba River into Gaston County at milepost 387.4 and exits the western border of the county at milepost 409.0 for a distance of 21.6 miles. This line has a mixture of general merchandise freight and is a main route for double stack trains from the Newark, NJ area to southeast GA and beyond. This line also hosts the northbound and southbound Amtrak Crescent which runs during the night with a scheduled stop in Gastonia. The northbound Crescent is scheduled to leave Gastonia at 12:56 am and the southbound at 3:12 am.

The mainline is located on the proposed U.S. DOT Southeast High Speed Corridor which would link Richmond, VA, Raleigh, NC, Atlanta and Macon, GA via Charlotte, NC. The Georgia, South Carolina and North Carolina Departments of Transportation are currently evaluating the overall suitability and costs of developing high speed passenger train service between Charlotte, NC and Macon, GA. The Southeast High Speed Corridor extends from Washington, D.C. to Jacksonville, FL.

The mainline through Gaston County is single track with sections of double main track. The first section of double main begins at milepost 390.6 and ends at milepost 402.3. The other double track section begins at milepost 408.6 and continues past milepost 409.0. Maximum tonnage handled in 2006 was 31 million gross tons (MGT). Approximately 34 trains a day operate on this line.

Maximum timetable speed through Gaston County is 50 MPH for freight and 60 MPH for passenger trains. Maximum curvature on the mainline is five degrees with maximum track superelevation of five inches. There are several areas where speed is slightly restricted due to curvature and due to turnouts where the track changes from single to double track and vice versa. Train movements on the mainline are governed by signals which are controlled from the Piedmont Division dispatcher's office located in Greenville, SC.

According to the 2003 Piedmont Division track chart, there are 30 at grade crossings located on the NS mainline through Gaston County. Twenty-eight of the 30 crossings are public crossings, with 26 of those crossings are protected by active (flashing) signals and two are protected by passive crossbuck signs. The remaining two crossings are designated private crossings or other and do not require crossbuck signs. According to the Federal Railroad Administration's (FRA) grade crossing database there are three at-grade crossings along this line (May Street, Hancock Street, and Marietta Street) within the City of Gastonia that have had five or more accidents.

C&NW LINE

The section of former Carolina and Northwestern Railway currently in operation in Gaston County at one time ran from York, SC to Chester-Lenoir, NC. In Gaston County, the milepost limits ran from HG-37.0 to HG-58.3. The section officially in operation now is that part between Crowders Mountain (milepost HG-37.5) and Gastonia (milepost HG-45.0). The track south of Crowders Mountain is abandoned and the section north of milepost HG-52.0 near Dallas to just south of Newton is owned by NCDOT. Maximum gross ton miles handled between Crowders Mountain and Gastonia in 2006 was 0.16 MGT.

The portion between Gastonia and Dallas is currently out of service and NS has filed with the Surface Transportation Board (STB) for abandonment. The city of Gastonia is in negotiations with NS for the section between milepost HG-45.0 and HG-47.0 for use as a trail. The remainder of the line, between HG-47.0 and HG-52.0 will revert to the adjacent property owners pending abandonment approval.

The eight miles of former C&NW in operation has no through traffic and is considered a branch line with approximately three trains operating on it per week. Train movements on this line are controlled by Track Warrant Control (TWC). Track Warrants are issued by the Piedmont Division dispatcher.

There are 58 at grade crossings located on the C&NW line, according to the 2003 Piedmont Division track chart, on both the active and out of service sections in Gaston County. Forty-four of the 58 crossings are public crossings, 15 of those crossings are protected by active (flashing) signals, and 29 are protected by passive crossbuck signs. The remaining 14 crossings are designated private or other and do not require crossbuck signs.

CSX TRANSPORTATION

CSXT has several lines through Gaston County. One is the former Seaboard Coast Line (originally Seaboard Air Line) track that originates in Monroe and goes through Charlotte, Mount Holly and on to Bostic, NC where it connects with CSXT's former Clinchfield RR. This line is designated as the Charlotte Subdivision. The second line is the Terrell Subdivision (formerly Piedmont and Northern Railway) which runs between Mt. Holly north to Terrell, NC. The third line is the former P&N which ran from Charlotte, through Mount Holly to Gastonia, with a spur from Mount Holly to Belmont.

CHARLOTTE SUBDIVISION

The Charlotte Subdivision crosses the Catawba River and enters Gaston County at Mount Holly, near milepost SF-341.60; from there, it travels in a northwesterly direction and crosses the Lincoln County line near Alexis at approximately milepost SF-352.46 to Lincolnton. The Charlotte Subdivision reenters Gaston County again at approximately milepost SF-368.25 and travels in a southwesterly direction through Cherryville where it enters Cleveland County at milepost SF-374.75. The total distance in Gaston County for this line is 17.36 miles for both segments. Maximum tonnage handled in 2006 was 27.5 million gross tons (MGT). Approximately 12 trains a day operate on this subdivision.

CSXT Florence Division Timetable dated April 1, 2003 shows that the Charlotte Subdivision is a single track main with sidings. There are three sidings in Gaston County, a 10,100 foot long siding located at Mount Holly (milepost SF-341.8), at Duke (milepost SF-344.4) and Cherryville (milepost SF-363.6) the sidings are 8,421 feet and 8,570 feet long respectively.

Maximum timetable speed is 40 MPH with a 25 MPH speed restriction through Mount Holly. Train movements on this line are governed by Direct Train Control (DTC) blocks. Permission for trains to occupy block(s) is obtained from the CSXT dispatcher based in Jacksonville, FL.

There are 42 at grade crossings located on the Charlotte Subdivision in Gaston County according to the U.S. DOT Crossing Inventory website. Thirty-two are public crossings, of which 25 are protected by active (flashing) signals and 7 are protected by passive crossbuck signs only. The remaining 10 are designated private or pedestrian crossings and do not require crossbuck signs.

TERRELL SUBDIVISION

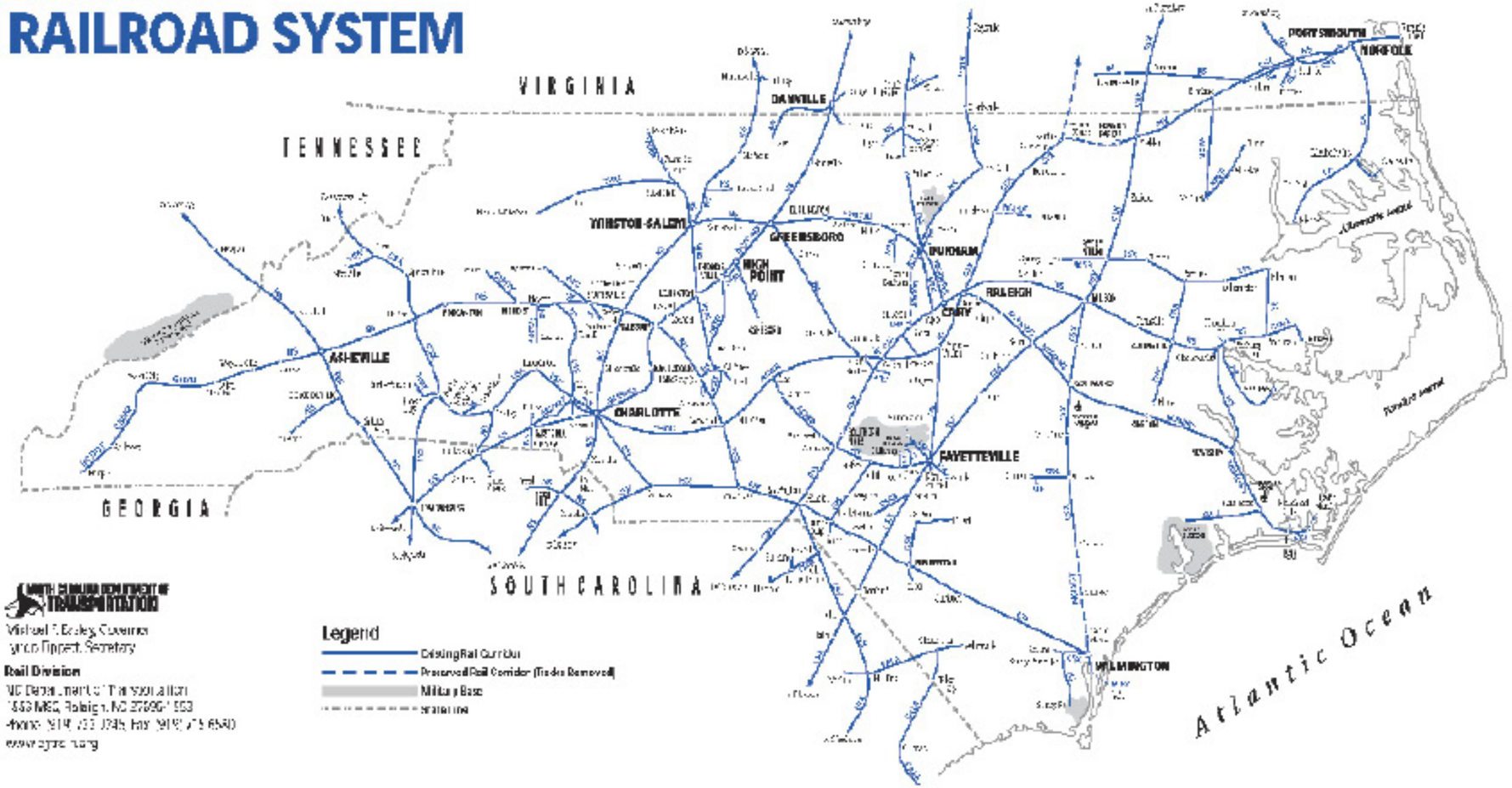
The Terrell Subdivision of the former Piedmont and Northern Railway branches off the Charlotte Subdivision in Mount Holly at approximately milepost SF-341.80. It runs northward to Terrell and enters Catawba County at approximately milepost SFE-8.16. This line is single track with several spurs coming off the line to serve Duke Energy power generating facilities located off this subdivision including Plant Marshall, which is also served by Norfolk Southern. Maximum tonnage handled in 2006 was 12.5 MGT. The number of trains operated on this subdivision averages about two a day.

Maximum speed on the Terrell Subdivision is 25 MPH with two 10 MPH restrictions, one in Mount Holly and the other near Cowans Ford Spur between milepost SFE-7.3 and SFE-7.4. Train movements on this line are also governed by DTC blocks.

There are 13 at grade crossings located on the Terrell Subdivision in Gaston County according to the U.S. DOT Crossing Inventory website. Four are public crossings, of which two are protected by active (flashing) signals and two are protected by passive crossbuck signs only. The remaining nine are designated private crossings and do not require crossbuck signs.

North Carolina

RAILROAD SYSTEM



Michael F. Bailey, Governor
Lynda Tippett, Secretary

Rail Division
NC Department of Transportation
1553 MSC, Raleigh, NC 27699-1553
Phone: (919) 733-7245, Fax: (919) 715-6580
www.bytrain.org

Legend
- Existing Rail Corridor
- Preserved Rail Corridor (Tracks Removed)
- Military Base
- Interstate

AMTRAK Stations in North Carolina

Burlington	Fayetteville	High Point	Salisbury
Cary	Kinston	Kannapolis	Selma
Charlotte	Greensboro	Raleigh	Southern Pines
Durham	Hamlet	Rocky Mount	Wilson

Information: 1-800-USA-TRAIN (1-800-872-7245)
Reservations: 1-800 USA RAIL (1-800-872-7245)

December 2006

EXISTING MARK	RAILROAD NAME
ACWR	Aberdeen Carolina & Western Railway
NR	Aberdeen & Rockfish Railroad
ARC	Alexander Railroad
ATW	Atlantic & Western Railway LP
CSL	Chesapeake & Albemarle Railroad
CALA	Carolina Southern Railroad
CFR	Cape Fear Railways
CLNA	Carolina Coastal Railway
CPLI	Campbellsville Railroad
CSX	CSX Transportation

EXISTING MARK	RAILROAD NAME
CTR	Clinton Terminal Railroad
CWCV	Caldwell County Railroad
HPTD	High Point, Thomasville & Denton Railroad
LRS	Laurinburg & Southern Company, Inc.
MSR	Monroe and Southwork Railroad Company
NCDOT	N.C. Department of Transportation
NCSR	North Carolina Railroad Company
NCVA	North Carolina & Virginia Railroad
NHJ	New Hope Valley Railroad
NS	Norfolk Southern Corporation

EXISTING MARK	RAILROAD NAME
PDRR	Pee Dee River Railway
PSNR	Pee Springs & Northern Railroad
SUR	State University Railroad
TBRY	Thermo Belt Railway
US	U.S. Army
VSRR	Virginia Southern Railroad
WSS	Western-Salem Southbound Railway
WTRY	Wilmington Terminal Railroad, Inc.
YVRR	Yadkin Valley Railroad

Figure 8: North Carolina Railroad System

FORMER P&N TRACKAGE

The Piedmont and Northern Railway was created in 1914 as a result of combining two Duke Power Company owned rail lines, the Piedmont Traction Company in North Carolina and the Greenville, Spartanburg, and Anderson in South Carolina. The P&N was a heavy electrically powered inter-urban passenger and freight railroad. By 1951 all passenger service was discontinued and in 1954 the electrification was abandoned in favor of diesel operation. CSXT predecessor Seaboard Coast Line Railroad acquired the P&N on July 1, 1969.

The former P&N North Carolina Division operated between Charlotte and Gastonia with a branch from Mount Holly to Terrell (now the Terrell Subdivision) and a spur between Mount Holly and Belmont. The former P&N main line generally parallels the former Seaboard Coast Line trackage between Charlotte and Mount Holly. The line crossed the Catawba River into Gaston County on its own bridge as it does currently. Most of the remaining trackage of the former P&N in Gaston County except for the Terrell Subdivision is now owned by the North Carolina DOT which bought the trackage on December 5, 1991. According to the NCDOT website, milepost limits of the sale were from SFC-11.39 to SFC-23.00 (Mount Holly - Gastonia) and SFE-0.13 to SFE 3.13 (Mount Holly – Belmont). The two segments are part of the NCDOT's ongoing program to preserve rail corridors for interim or future use.

From satellite photos, the rail and bridges on the former mainline from Mount Holly to Gastonia appears to be in place as well as the Mount Holly - Belmont branch line. Before any decision is made to resume rail service on these lines, a thorough inspection of the track and bridges will be needed. The right of way in most places appears to be clear of brush or any large trees in the track structure.

A summary of the rail lines operating in Gaston County is shown below in Table 11.

Table 11: Rail Lines Operating in Gaston County

Rail Line	Number of Trains	Tonnage Carried (million gross tons)
Norfolk Southern		
Mainline	34 per day	31
C&NW	3 per week	0.16
CSX Transportation		
Charlotte subdivision	12 per day	27.5
Terrell Subdivision	2 per day	12.5
Former P&N Trackage	Not operational	N/A

3.3 Air Cargo Freight Profile

The air cargo freight profile includes an assessment and description of the region's air cargo operations. The assessment also includes the identification of airports in the region that handle significant air cargo volumes, capacity of each air cargo handling facility, constraints of each facility, planned improvements, historical air cargo volumes for each airport, and major air cargo carriers.

Air Cargo Facilities

Gaston County houses one airport, the Gastonia Municipal Airport. It provides only general aviation services to Gaston County, including private planes, flying lessons and aerial photography. There are no freight services, commuter services, or charter services available at the Gastonia Municipal Airport. Charlotte-Douglas International Airport (CDIA) is located east of Gaston County in Charlotte, North Carolina. CDIA supports 10 major passenger airlines and seven commuter airlines. CDIA is the region's air cargo facility and accommodates 20 cargo airlines. Major carriers include Federal Express, United Parcel Service, Emery Worldwide, BAX Global, Airborne Express, and DHL. The Charlotte area houses facilities for more than 500 foreign-owned companies, and of those, more than 125 are manufacturers.

Capacity

Approximately 83,069 tons of cargo was forwarded worldwide from CDIA in 2005, a 94 percent increase from 2001. Air cargo currently accounts for approximately 9 percent of revenue at CDIA. CDIA projections indicate that cargo will increase to 271,604 tons in 2015.

The CDIA air cargo center currently encompasses approximately 288,000 square feet of facilities and more than 50 acres of aircraft ramp space. Clients have access to eight cross-dock facilities, each with as many as 20 dock doors.

Physical Constraints

As previously mentioned, CDIA projects that air cargo volumes will increase to 271,604 tons in 2015. Approximately four percent of that, or 11,071 tons, will be international cargo. Data from CDIA indicates that more than 30 percent of Charlotte's manufacturers and wholesalers partake in international trade. However, CDIA is not sufficiently served by international air cargo carriers. Currently, cargo is transported by ground to ports along the east coast, and then by boat overseas.

Planned Improvements

The CDIA masterplan is estimating an average annual growth rate in freight tonnage of 5.4 percent through 2015. To accommodate growing demand for service, CDIA is currently conducting a Freight Feasibility Study to assess their service to international cargo carriers. The current plan is to expand CDIA's facilities from 288,000 square feet to 1.2 million square feet by 2015. Additionally, a third parallel runway is scheduled to be under construction this spring (2007). The new runway will allow an increase in air service.

3.4 Intermodal System Freight Profile

The intermodal system freight profile includes an assessment of the region's intermodal freight and goods movement system including the National Highway System Connectors. This profile provides information on operations, capacity, access issues, and overall infrastructure issues and challenges.

Intermodal Facilities

There are no intermodal facilities located within Gaston County, however five freight intermodal terminals are located in Charlotte, which represent approximately 28% of all the intermodal facilities in the state of North Carolina. The facilities include:

- Charlotte/Douglas International Airport
- Norfolk Southern Intermodal Freight Terminal
- CSX Intermodal Freight Terminal
- North Carolina State Ports Authority
- Pipeline Terminal and Tank Farms

CSX is currently planning to expand their Charlotte facility and Norfolk Southern is planning for a new facility that would be located near the Charlotte-Douglas International Airport (CDIA).

Inland Intermodal Facilities

The North Carolina Ports Authority owns two inland intermodal terminals in North Carolina, one in Greensboro and one in Charlotte. The Charlotte facility is located north of the Charlotte Douglas International Airport and is accessed by both Norfolk Southern and CSXT Railroads, as well as easy access to I-85 and I-77.

3.5 Other Freight Systems Profile

The GUAMPO conducted an analysis regarding the geographic locations of major freight-related companies in order to assess which access routes are experiencing high volume and whether or not the level of service for each route is satisfactory (see Table 12). The LOS included in the table for US 321 and I-85 was taken from the I-85/US 321 Interchange Feasibility Study completed by NCDOT in March 2006. The other roadway LOS was calculated by inputting the existing and future traffic volume numbers used for this study into Highway Capacity Software (HCS).

The analysis revealed, perhaps not surprisingly, that many of the region's freight-related companies are located on or near major highways and interstates. Freight moves to and from these locations often along the same routes. Therefore, a relatively small number of access routes are likely experiencing significant freight travel volumes; however, the levels of service are not always sufficient.

Overwhelmingly, the most highly used major access route in Gaston County is I-85. Virtually every major freight-related company in the county uses I-85, which serves as the region's major connection to Atlanta, Charlotte, and I-77. Unfortunately, the level of service calculated for I-85 through Gaston County is unsatisfactory. Throughout most of the county, I-85 maintains an LOS of E, while elevating to LOS D along a section in Gastonia.

While the LOS of the county's section of I-85 is less than sufficient, most of the state highways experiencing freight traffic from the region's key freight-related companies have satisfactory LOS. Many of the companies access I-85 via NC 274. All of the sections of NC 274 analyzed have a LOS of B. NC 273 also operates at LOS B. NC 16, which is used by the relatively isolated Freightliner of Mt. Holly, has a LOS of A.

Despite not being an STAA route, US 321 also experiences a high freight volume as it is a key access point for many freight-related companies to I-85. US 321 maintains a LOS B in all of the key areas analyzed.

3.6 Comprehensive Freight Profile

The comprehensive freight profile was developed to include information from the freight flow database, highway profile, rail profile and airport profile. This profile includes GIS data, which allows the GUAMPO to map areas of concern. During this planning effort it was determined that existing data did not provide enough information to develop the freight flow database, specifically for the Gaston Urban Area.

GUAMPO will coordinate with the regional planning partners to purchase freight data from a private vendor. Since freight planning activities are envisioned to be a continuous process, the freight flow database will be added to the comprehensive freight profile when the data is available.

GIS Information Database

GUAMPO has developed a comprehensive freight profile by combining information from the airport, truck and rail data described earlier.

Table 12: LOS of Transportation Facilities Providing Access to Freight Facilities			
NAME	Location Description	Existing LOS	2030 LOS
Wix Filtration Corp	Located adjacent to I-85 on southern side; access interstate via NC 274 N	I-85 LOS D NC 274 LOS B	I-85 LOS D NC 274 LOS C
Freightliner of Mt Holly LLC	Location somewhat isolated from major access routes; access interstate via local routes and NC 16	NC 16 LOS A	N/A
Pharr Yarns Inc	Located just south of I-85; access I-85 via NC 7	I-85 LOS E	I-85 LOS E
Freightliner of Gastonia LLC	Located adjacent to I-85 on the northern side; access interstate via US 321	I-85 LOS E US 321 LOS C	I-85 LOS E US 321 LOS D
American and Efird Inc	Located between river and NC 273; access I-85 via NC 273 S	I-85 LOS E NC 273 LOS B	I-85 LOS E NC 273 LOS B
Stabilus Inc	Located adjacent to I-85 on the northern side; access interstate via US 321	I-85 LOS E US 321 LOS C	I-85 LOS E US 321 LOS D
Parkdale Mills	Located South of I-85 on US on NC 274; Access Interstate via 274 N and US 321 N	I-85 LOS D NC 274 B	I-85 LOS D NC 274 LOS C
R L Stowe Mills Inc	Located just north of I-85. Access interstate via local routes	I-85 LOS E	I-85 LOS E
Danaher Tool Group	North of I-85 off NC 274; Access I-85 via NC 274 S	I-85 LOS D NC 274 B	I-85 LOS D NC 274 LOS C
Dole Packing	Located just north of I-85. Access interstate via Edgewood Rd.	I-85 LOS E	I-85 LOS E
ABF Freight Systems Inc	Located just north of I-85; Access I-85 via Peach Orchard Rd.	I-85 LOS E	I-85 LOS E
AB Carter	Located on US 321; Access I-85 via US 321 N	I-85 LOS E US 321 LOS B	I-85 LOS E US 321 LOS C
Advanced Drainage Systems	Located north of I-85; Access interstate via NC 274	I-85 LOS D NC 274 LOS B	I-85 LOS D NC 274 LOS C
State Line	Access I-85 via US 321 N	I-85 LOS E US 321 LOS B	I-85 LOS E US 321 LOS C
Hanesbrands, Inc. (Sara Lee)	Located just south of I-85; access I-85 via Canterbury Rd.	I-85 LOS D	I-85 LOS D
Wal-Mart Associates Belmonts	Located adjacent to I-85 on the southern side; access interstate via local routes	I-85 LOS E	I-85 LOS E
Wal-Mart Associates Gastonia (Franklin Square)	Located south of I-85; access interstate via NC 274 N/Bessemer City Rd.	I-85 LOS D NC 274 LOS B	I-85 LOS D NC 274 LOS C
Wal-Mart Associates Gastonia (Westside)	Located south of I-85; access interstate via NC 273 and NC 7	I-85 LOS D NC 273 LOS B	I-85 LOS D NC 273 LOS C

The freight data is presented graphically using Geographic Information Systems (GIS). ESRI datasets for ArcGIS have been used as the base mapping data for highways, airports, water, landmarks, and political boundaries. Additional data such as Metropolitan Planning Organization boundaries comes from the Bureau of Transportation Statistics. Freight-related data collected for the Gaston Urban Area's freight planning system is in the State Plane coordinate system, North Carolina NAD83 (with units in meters). The data includes:

- At Grade Crossings
- Largest Freight-Related Employers in the urban area
- Average Annual Truck Volumes

Truck volume information has been overlaid with locations experiencing heavy congestion in order to understand impediments to truck movement by congestion and where truck activity contributes significantly to congestion in the region.

In addition to a freight database, a freight facilities database was created to support a variety of the GUAMPO's planning needs. The database includes two primary facility types: transportation terminals and freight facilities. Transportation terminals include air freight, rail, truck, inter-modal, and truck terminals. There are no transportation terminals within the study area, so these facilities are not mapped, but are included in the database. Freight facilities include manufacturing, retail, warehouse, wholesale/distribution, and agricultural facilities. These are included in the largest freight-related employers GIS shapefile.

The freight database also includes qualitative information collected from surveying freight stakeholders in the region. This provides information such as the location and severity of operational bottlenecks in the region, the effectiveness of the current truck route system, and likely locations of future freight facilities in the region.

Freight Facilities Database

The freight facilities database is a subset of the GIS database. The location of freight facilities will support a variety of the GUAMPO's planning needs. The database includes two primary facility types: transportation terminals and freight facilities. Transportation terminals include air freight, rail, truck, inter-modal, and truck terminals. There are no transportation terminals within the study area, so these facilities are not mapped, but are included in the database. Freight facilities include manufacturing, retail, warehouse, wholesale/distribution, and agricultural facilities generally with more than 250 employees. The transportation terminals and freight facilities were geocoded based on the street address location of the employer. The facilities were also coded as manufacturing or wholesale/distribution facilities.

Logistical Analysis

The economy of Gaston County was historically based on textile manufacturing. Like most of the country, manufacturing has been declining in recent years. However, manufacturing remains stronger in Gaston County than in many other counties throughout the state. While the textile industry has diminished over the last several years in the county, manufacturing and other freight-related industries still comprise a major component of the regional economy.

Nearly a quarter of Gaston County's workforce was employed in manufacturing in 2006. While manufacturing jobs fell from 16,843 in 2005 to 15,916 in 2006, the number still remains strong compared to the rest of the state. In 2006, manufacturing jobs accounted for 23% of the county's employment, compared with only 14.3% for North Carolina as a whole.[1]

In total, nearly a third of the workforce in Gaston County is employed in a freight-related industry. The number of workers employed in the industry listed as "transportation and warehousing" is close to the same for Gaston County as for the state. In 2006, 3.5% of the state's workforce was employed in this industry, compared with 3.1% for Gaston County. The number of workers employed in wholesale trade, also identified as a "freight-related" industry, is less for Gaston County than for the state, at 3.0% and 4.5%, respectively. However, when the figures for these two industries are combined with those for manufacturing, we find that freight-related industries account for 29.1% of the county's employment, compared to only 22.3% for the state.[2]

In some cases, retail trade can also be considered "freight-related." Large retailers such as Wal-Mart rely heavily on freight shipments. Wal-Mart is the 6th largest employer in the county and therefore should not be overlooked when assessing the economic impact of freight-related activities on the region. There are three Wal-Mart Super Centers and a Sam's Club in Gaston County, employing approximately 1,400 employees. In total, retail trade employs 9,129 workers in Gaston County, which accounts for 13.2% of the workforce.

Many of the County's largest employers are involved in the transport of goods. Ten of the top 25 employers in the county operate in a freight-related industry, and 5 of those are in the top 10 (see Table 13). Over 50 trucking companies provide freight services to industries in Gaston County, some of which are themselves located in the county, including ABF Freight Systems Inc., Freightliner of Mount Holly, and Freightliner of Gastonia.

Although the number of people employed in Gaston County in the manufacturing and transportation industries is much higher than that of the state at large, wages in these industries are lower in Gaston County. In 2006, manufacturing employees in Gaston County earned a weekly wage of $748, while the average for the state was $891. Likewise, Gaston County workers employed in the transportation and warehousing industry earned only $613 per week, compared to an average of $725 for the state. The payment gap was greatest in the wholesale trade industry where the weekly wage average for the state was $1,051, while workers in Gaston County averaged $823.[3]

The local and regional economy of the Gaston County area is greatly impacted by freight-related industries. Despite the decline of manufacturing and the relatively low-wages of employment in freight-related industries in Gaston County, freight-related industries provide nearly one third of the county's jobs. The flow of freight through the area is therefore an integral part of the region's economy.

1 **The North Carolina Employment Security Commission, Labor Market Information Division, CMEDIS, 3rd Qtr., 2006. Quoted by the Gaston County Economic Development Commission.**

2 **Ibid.**

3 **Ibid.**

Table 13: Major Freight Related Employers			
Company	County-wide Rank	Number of Employees	Major Product
Freightliner Mt. Holly	3	1,000+	Industrial Truck/Trailer
Wix Filtration Corp	4	1,000+	Filtration Manufacturing & Headquarters
Pharr Yarns, Inc	7	1,000+	Yarn Spinning Mill
American & Efid, Inc	8	1,000+	Thread & Yarn
Freightliner of Gastonia	9	1,000+	Industrial Truck/Trailer
Hanesbrands, Inc. (Sara Lee)	11	500-999	Clothing
RL Stowe Mills, Inc.	18	250-499	Yarn Products
Stabilus	19	250-499	Heavy Gauge Springs
Danaher Tool Group	20	250-499	Hand Tools
Parkdale Mills	21	250-499	Cotton/Polyester Yarns
Source: The North Carolina Employment Security Commission, Labor Market Division 4/2007. Based on 2006 numbers. Quoted from Gaston County Economic Development Commission.			

Freight-Related Employers and At Grade Crossings with Exposure Index > 30,000 in Gaston Urban Area

Figure 9: **Freight-Related Employers and At Grade Crossings with Exposure Index Greater than 30,000 in Gaston Urban Area**

4.0 Strategy Development

Strategy Development

The U.S. Department of Transportation projects that the national freight volume, including truck, rail, water and air modes, will more than double by 2020. The trucking industry alone will see a 75 percent increase in freight tonnage by 2020. Several major roadways intersect Gaston County and serve as corridors for truck traffic. Existing traffic data, as well as modeled data, indicate that Interstate 85 accommodates the largest volumes of traffic in Gaston County, with the U.S. Highways (US 29/74 and US 321) also carrying large volumes. Future data likewise indicates the aforementioned networks will be the most heavily used, along with the future Garden Parkway.

The purpose of strategy development is to identify the appropriate recommendations to address the findings of the freight assessment. The 2030 LRTP was reviewed to identify projects with significant impact on freight. The project goals and objectives were refined in order to develop a set of freight-related performance measures for GUAMPO to consider when making project evaluations in the future.

GOAL: Maintain and improve regional transportation infrastructure to optimal performance for the movement of people and freight to strengthen and encourage economic vitality for the region.

OBJECTIVE: Eliminate conflict points in the movement of goods.

STRATEGY:

- Separate at grade crossings with an exposure index of greater than 30,000.
- Separate or upgrade at grade crossings with a history of crashes.

  Performance Measure:
  - Set up traffic counts at grade crossings semi-annually
  - Monitor crash data at at grade crossings

OBJECTIVE: Ensure adequate infrastructure is in place from major shipping areas

STRATEGY:

- Identify and improve bottlenecks in the current transportation system
- Identify areas where major shipping facilities are being developed or may be developed and support the re-use of underutilized properties near existing transportation infrastructure
- Support the development of rail options for long and short routes as well as for local connectivity
- Work with Federal, State, and Local officials and transportation organizations to emphasize the need for adequate transportation funding.

  Performance Measure:
  - Prioritize transportation projects and funding
  - Inventory and monitor existing open space

These recommendations are grouped into infrastructural (capacity enhancements, road geometry improvements), operational (signal timing improvements, truck route redesign), and institutional strategies (land use and zoning policies, collaborating with other agencies).

The following recommendations will be integrated into the 2030 LRTP.

4.1 Infrastructural Improvements

Highway Improvements– Existing Facility improvements

Planned roadway improvements that would help alleviate congestion and/or improve operations along I-85, US 29/74, US 321, NC 273, NC 274, and NC 279 would benefit the movement of freight in the region and should receive priority ranking in the GUAMPO's LRTP. The existing traffic counts and the Metrolina Regional Travel Demand Model runs for the year 2030 are showing significant volumes on these roads.

The projects listed below have been prioritized in order based upon 2030 projected traffic volumes for these roadways. The majority of the major manufacturers and freight related businesses in Gaston County are located along these roadway corridors. The following projects have been

included in the GUAMPO 2030 Long Range Transportation Plan along with the existing roadways mentioned above:

US29/74 - (2030 PROJECTED TRAFFIC: 30,700 – 46,600 ADT)

- Franklin Boulevard – Adding an additional westbound through lane from Church Street to Cox Road.
- Wilkinson Boulevard over Catawba River – Widen existing 4-lane bridge to 6 lanes and widen existing 4-lane roadway cross section to six lanes from Catawba Street to Catawba River.
- Wilkinson Boulevard over South Fork River - Widen existing 4-lane bridge to 6 lanes and widen roadway to 6 lanes between Market Avenue and Albert Avenue.

US 321 – (2030 PROJECTED TRAFFIC: 11,900 – 40,100 ADT)

- York Road – Widen 4-lane facility to 5-lane from Hudson Boulevard to Beam Avenue.

NC 273 – (2030 PROJECTED TRAFFIC: 12,100 – 26,000 ADT)

- South Point Road – Widen existing 2-lane road to a 4-lane divided facility from Nixon Road to Lower Armstrong Road.

NC 279 – (2030 PROJECTED TRAFFIC: 10,400 – 35,100 ADT)

- South New Hope Road – Widen existing 2-lane road to 5 lanes from Titman Road to Union –New Hope Road.
- NC 279 Dallas-Cherryville Highway – Widen 2-lane road to 5 lanes from old US 321 to Costner School Road.

NC 274 – (2030 PROJECTED TRAFFIC: 2,900 – 28,500 ADT)

- New Hope Road Widening - There are two segments to this project: Widening the existing 4-lane facility to 5-lane and construct center turn-lane from Burtonwood to SR 2466 and from Robinwood Road to Armstong Park Road.
- Union Road – Widening the existing 2-lane facility to 5-lane and construct a new 4-lane divided realignment from Robinson Road to Beaty Road.
- Bessemer City Road – Widening to 5 lanes from Franklin Boulevard in Gastonia to Maine Street in Bessemer City.

4.2 Highway Improvements

The following facilities will help alleviate congestion along existing freight corridors and improve the movement of goods. These projects are included in the GUAMPO 2030 Long Range Transportation Plan and have been prioritized in order based upon the forecasted traffic volumes, number, and type of existing facilities that they will assist in relieving congestion.

New Facilities

THE GARDEN PARKWAY – The Garden Parkway would serve as a bypass to I-85, US 29/74, and US 321 and would provide an alternative connection to Charlotte-Douglas International Airport (CDIA), which is the region's major air freight cargo facility, as well as the future home of the Norfolk Southern Intermodal Facility. The Garden Parkway is a proposed 4-lane divided freeway that will begin in Mecklenburg County in the vicinity of the CDIA and would ultimately tie in US 321 just north of Cloninger Road. The length of this new roadway is approximately 21.5 miles to 23.7 miles depending on the final alignment chosen; the project is currently in the Draft Environmental Impact Study phase.

This project is currently one of nine projects being evaluated by the North Carolina Turnpike Authority as a potential toll road. The preliminary cost estimate for this project is $745 million to $1.595 billion (April 2007 dollars) so the project may be constructed in three segments. This project would assist in relieving congestion on I-85, US 321, and US 29/74 in Gaston County, as well as the I-85/US 321 Interchange. The Metrolina Travel Demand Model is forecasting that the Garden Parkway will carry 18,900 – 57,000 vehicles per day by the year 2030, including a significant amount of truck traffic.

GASTONIA – MT. HOLLY CONNECTOR – The Gastonia Mount Holly Connector will relieve congestion on US 29/74 and I-85, as well as provide direct access to residents living in the eastern portion of Gaston County. The Gastonia-Mt. Holly Connector is a proposed 4-lane divided facility that will extend from Aberdeen Boulevard (SR 2831) in Gastonia to Catawba Avenue (SR 2040) in Mt. Holly. The Metrolina Travel Demand Model is forecasting that the Gastonia – Mt. Holly Connector will carry 12,300 – 28,100 vehicles per day by the year 2030, including a significant amount of truck traffic.

BELMONT/MT. HOLLY LOOP – This facility will provide relief to NC 273, by creating a new north-south connector. The only other existing north-south roadway that corridor is NC 273 which is experiencing a heavy traffic growth due to surrounding developments, particularly in Belmont and Mt. Holly. The Loop will also provide a direct connection between the cities of Belmont, Cramerton, McAdenville, and Mt. Holly which currently does not exist. This will assist in moving freight to these various cities in this part of the county and gives trucks an alternative to the NC 273. The model shows that this road will have a decent amount of truck traffic on 2030.

ROBINSON-CLEMMER ROAD/FRIDAY PARK ROAD – It is recommended that GUAMPO request this roadway improvement be modeled in the Metrolina Regional Travel Demand Model so that the overall impacts to the adjacent roadways can be determined. This project would provide an

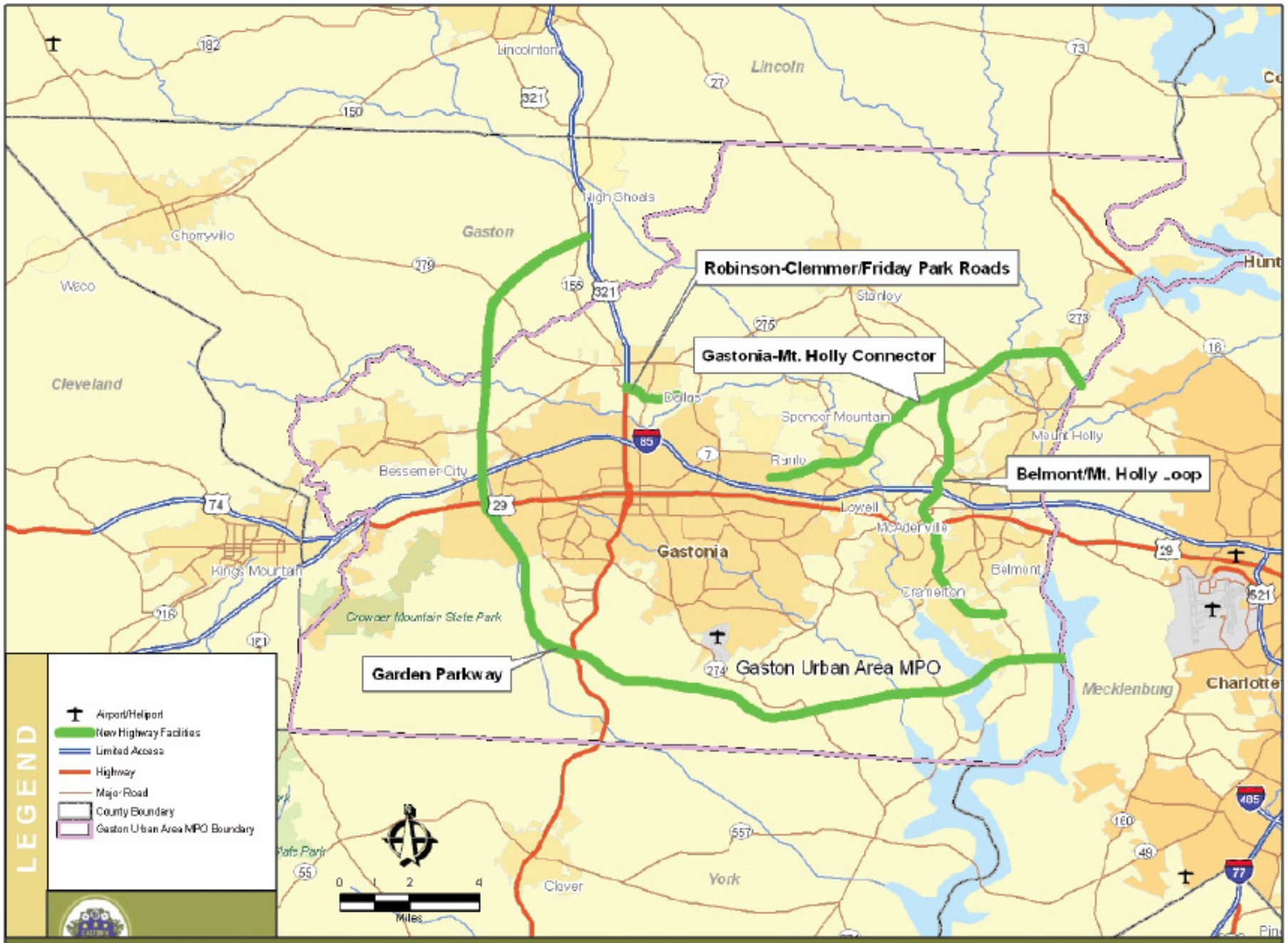


Figure 10: Highway Improvements - New Facilities in Gaston Urban Area

opportunity for trucks to avoid the congestion and restrictions at the I-85/US 321 Interchange by using NC 279 and Robinson Clemmer Road to access US 321.

Robinson Clemmer Road and Friday Park Road are part of the current Gaston Urban Area Thoroughfare Plan and are planned as a 4-lane divided facilities. The proposed project is approximately two miles in length and would consist primarily of widening the existing roadway with some realignment at the new location. This project would provide a direct connection south of Dallas between New Hope Road (NC 279) and the interchange at US 321. Currently this project is unfunded and is not included in the current 2030 Long Range Transportation Plan; therefore no current cost estimate has been calculated and it has not been included in the 2030 Metrolina Travel Demand Model.

Current Issues

I-85/US 321 INTERCHANGE – It is recommended that GUAMPO and NCDOT pursue programming and funding improvements to this interchange based on the recommended alternative in the NCDOT 2006 feasibility report; this would add the project to the GUAMPO's Long Range Transportation Plan and State of North Carolina's Transportation Improvement Program (TIP). Once this interchange has been constructed, it is recommended that the GUAMPO, the City of Gastonia, and NCDOT reevaluate the STAA vehicle restriction on US 321.

The existing interchange is a half diamond with ramps and loops in the western quadrants. The current geometry and capacity of the interchange, as well as surrounding traffic signals cause back-ups onto I-85. This interchange also handles a high volume of heavy truck traffic. Currently Surface Transportation Assistance Act (STAA) dimensioned vehicles are not allowed to access US 321. These vehicles include twin-trailers and 48-53 foot long single trailers. According to North Carolina General Statute 20-115.1 no portion of the State highway system can be designated to allow STAA vehicles within municipal corporate limits without approval by all of the municipalities that are impacted. Between I-85 and I-40, US 321 passes through the cities of Gastonia, Lincolnton, and Hickory. The City of Gastonia was concerned that the additional STAA truck traffic would exacerbate the already congested interchange at I-85/US 321 and did not approve the designation. This restriction forces STAA vehicles to use I-85, I-77, and I-40 route to access Hickory and points westward costing trucking companies in Gaston County, such as ABF Freight System, Inc., time and fuel.

There is currently an additional left turn lane being constructed at this interchange beginning summer 2007 as part of the North Carolina Moving Ahead program (NCMA). The NCDOT has completed a feasibility study for this interchange in 2006 that looked at longer term solutions and made a recommendation for a reconfigured interchange that was estimated to cost $29.8 million dollars.

4.3 Rail Infrastructure

NORFOLK SOUTHERN – The proposed Southeast High Speed Rail Corridor will require additional capacity and speed improvements to the Norfolk Southern's rail infrastructure so freight and passenger traffic can be handled effectively. The corridor will extend from Washington D.C to Atlanta, passing through Gastonia using the Norfolk Southern's rail corridor.

The proposed intermodal facility at the Charlotte Douglas International Airport would also require capacity improvements to the Norfolk Southern rail corridor.

RAILROAD/HIGHWAY AT-GRADE CROSSINGS – It is recommended that GUAMPO continue to work with NCDOT Rail Division and the railroad companies to identify potential

Table 14: At-Grade Crossings with Exposure Index Greater Than 30,000

At-Grade Crossing No.	Railroad	Street/City	Exposure Index
631818N	CSX	Main Street/Mt. Holly	114,000
631820P	CSX	Hawthorne Street/Mt. Holly	43,200
631831C	CSX	McLurd Drive/Stanley	48,804
631832J	CSX	Chestnut Street/Stanley	72,000
716193G	NS	Main Street/Belmont	245,140
716195V	NS	Eagle Road/Cramerton	172,720
716205Y	NS	S. Main Street/Lowell	176,460
716212J	NS	Cox Road/Gastonia	132,260
716215E	NS	Hancock Street/Gastonia	64,600
716219G	NS	Broad Street/Gastonia	120,000
716221H	NS	Marietta Street/Gastonia	112,800
716224D	NS	York Street/Gastonia	264,000
716226S	NS	Trenton Street/Gastonia	51,000
716232V	NS	Jenkins Road/Gastonia	86,870
716233C	NS	Northwest Blvd./Gastonia	138,822
716236X	NS	Jenkins Dairy Road/Gastonia	136,000
716243H	NS	8th Street/Bessemer City	112,200
716245W	NS	12th Street/Bessemer City	68,000
915966V	NS	Maine Ave./Bessemer City	136,000

8th Avenue Underpass in Cramerton

Table 15: At-Grade Crossings with Greater Than 5 Accidents

At-Grade Crossing No.	Railroad	Street/City	Total No. of Accidents
631813E	CSX	Lee Street/Mt. Holly	7
631819V	CSX	First Street/Mt. Holly	5
631820P	CSX	Hawthorne Street/Mt. Holly	5
631830V	CSX	Dallas Road/Stanley	6
716215E	NS	Hancock Street/Gastonia	7
716221H	NS	Marietta Street/Gastonia	6
716230G	NS	May Street/Gastonia	17

at-grade crossings that can either be improved, eliminated, or grade separated. GUAMPO currently has three railroad / highway crossing projects in their 2030 Long Range Transportation Plan, which include:

- Lowell-Bethesda Road-Groves Street Connection
- 13th Street Railroad Underpass Replacement
- 8th Avenue Railroad Underpass

Recently a fatality occurred at the railroad underpass at Robinson Road/US 321 South. This is a one-lane underpass that should be added to the 2030 Long Range Transportation Plan and programmed for funding.

As part of this study the GUAMPO now has a complete grade crossing database that includes all relevant information for each grade crossing in Gaston County. NCDOT uses an exposure index to determine if a grade separation structure is warranted at highway/rail grade crossings. The exposure index is calculated by multiplying the number of trains per day by the number of vehicles per day that use the crossing. As a general rule, grade separations should be evaluated in RURAL areas when the exposure index is 15,000 or more. In URBAN areas grade separations should be evaluated when the exposure index is 30,000 or more (refer to Figure 9). According to the train and vehicular data found in the grade crossing database for Gaston County, the following at-grade crossings have an exposure index greater than 30,000 in the GUAMPO area:

There are numerous other factors that need to be considered besides exposure index when evaluating the feasibility of a grade separation at a specific location. These include accident history, topography, adjacent land uses, construction impacts, and costs. A comprehensive engineering study is recommended when evaluating any location for a grade separation.

The grade crossing database also includes the accident history for each grade crossing in Gaston County. Data from the FRA April 2007 crossing database shows that there are seven at-grade crossings that have had five or more accidents. These seven crossings are included in Table 15.

These crossings should be monitored to see if the accident problems still exist and if any roadway or rail improvements need to be made.

4.4 Operational Improvements

I-85/ US 321 Interchange

Once the planned triple left turn lanes are constructed, several concerns need to be investigated and resolved before STAA dimensioned vehicles should be considered to access the I-85/US 321 interchange.

- The operation of the traffic signals should be considered. It is possible that improvements at one intersection (such as constructing the triple left turn lanes) could cause an increase in delay at the next intersection by increasing the traffic volume. Queuing of vehicles at the Rankin Lake Road intersection could reach the Loop intersection and cause queuing onto I-85. Appropriate signal timing will need to be established before allowing STAA vehicles to use US 321. A coordinated signal timing plan could potentially improve the traffic operations at these two intersections.
- The geometric design of the triple left turn lanes should be considered. Triple left turn lanes are rarely constructed and can be confusing to drivers. Many drivers do not stay within their turn lane while making the left turns. Large trucks must use the outside lane to avoid encroaching on the other left turn lanes. Safety is of great concern when constructing triple left turn lanes. Figures 13, 14, and 15 are from the American Association of State Highway and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets and include the turning paths of three types of trailers. Notice that the minimum outside turning radii are all the same, however the inside turning radii vary between each type of trailer. According to the turning path radii, a twin-trailer should be able to maneuver the same radius curves as a regular 42.5 foot trailer. However, 53' trailers may not be able to maneuver the same turns. The geometric design of the intersection must accommodate the turning path of STAA vehicles.
- Alternate routes that avoid the I-85/US 321 Interchange but allow a connection to US 321 should be investigated.

One such route would be for trucks to take New Hope Road (NC 279) to Robinson Clemmer Road/Friday Park Road and then use an existing interchange to access US 321 south of Dallas. New Hope Road is currently a 5-lane facility, and Robinson Clemmer Road and Friday Park Road, which are part of the current Gaston Urban Area Thoroughfare Plan are planned for a 4-lane divided facility. This project is unfunded and is not included in the current 2030 Long Range Transportation Plan; therefore no current cost estimate has been calculated. This alternate route should be examined in further detail, including the development of a preliminary cost estimate for the widening of Robinson Clemmer Road/Friday Park Road, to see if it is a viable option.

- The turning radius of large trucks is dependent on speed. Grade also affects the speed of large trucks. The design of the SB I-85 loop may be slowing large trucks down so much that other vehicles are queuing behind them. The detailed plans of the loop should be reviewed to determine whether or not the design of the loop is an issue.

Freight Planning Information System

The GIS and freight facilities database will be provided to GUAMPO on CD-ROM. The GIS database can play a key role in the GUAMPO's ability to conduct integrated multimodal transportation planning. The data is in ESRI-compatible shapefile format and readable by ESRI ArcGIS and ArcReader applications. ArcReader is a free, easy-to-use desktop mapping application used to view, explore, and print maps. A standard basemap showing the freight facilities data has been published as an ArcReader map (.pmf file) and is provided on the CD-ROM. ArcReader can be installed on planners' desktops to assist in making informed, efficient, and effective decisions and investments regarding modal, intermodal and freight needs. In the future, ArcReader can be customized for a freight planning information system with custom queries. After a needs assessment of the hardware, software and data needs of the GUAMPO, the mapping capability of ArcReader/ArcGIS could become part of a larger project planning Internet/Intranet tool using Microsoft.net and/or ArcIMS (Internet Mapping System). With the purchase of available commercial datasets, this tool could:

- Capture data about goods movement, specifically origins and destinations of major freight flows;
- Develop commodity flow modeling;
- Identify freight bottlenecks and identify potential investment needs based upon infrastructure consumption from freight traffic;
- Serve the needs of shippers in the community; and
- Support the community's planning process

4.5 Institutional Improvements

Metrolina Regional Travel Demand Model

It is recommended that GUAMPO work with NCDOT to evaluate the forecasted truck volumes in the model. This may involve collecting more vehicle classification data on the major roadways in Gaston County on a routine basis to establish an accurate baseline. It is also recommended for GUAMPO to investigate purchasing detailed freight data for the region from an outside vendor. The current version of the Metrolina Regional Travel Demand Model does not include any specific freight modeling components, but does include numbers for trucks. After careful review of those future truck volumes along with a comparison to available classification count data, the model may be low on forecasting the number of trucks on certain roadways in Gaston County. This could be attributed to the limited amount of vehicle classification data that is available to calibrate the model for truck volumes.

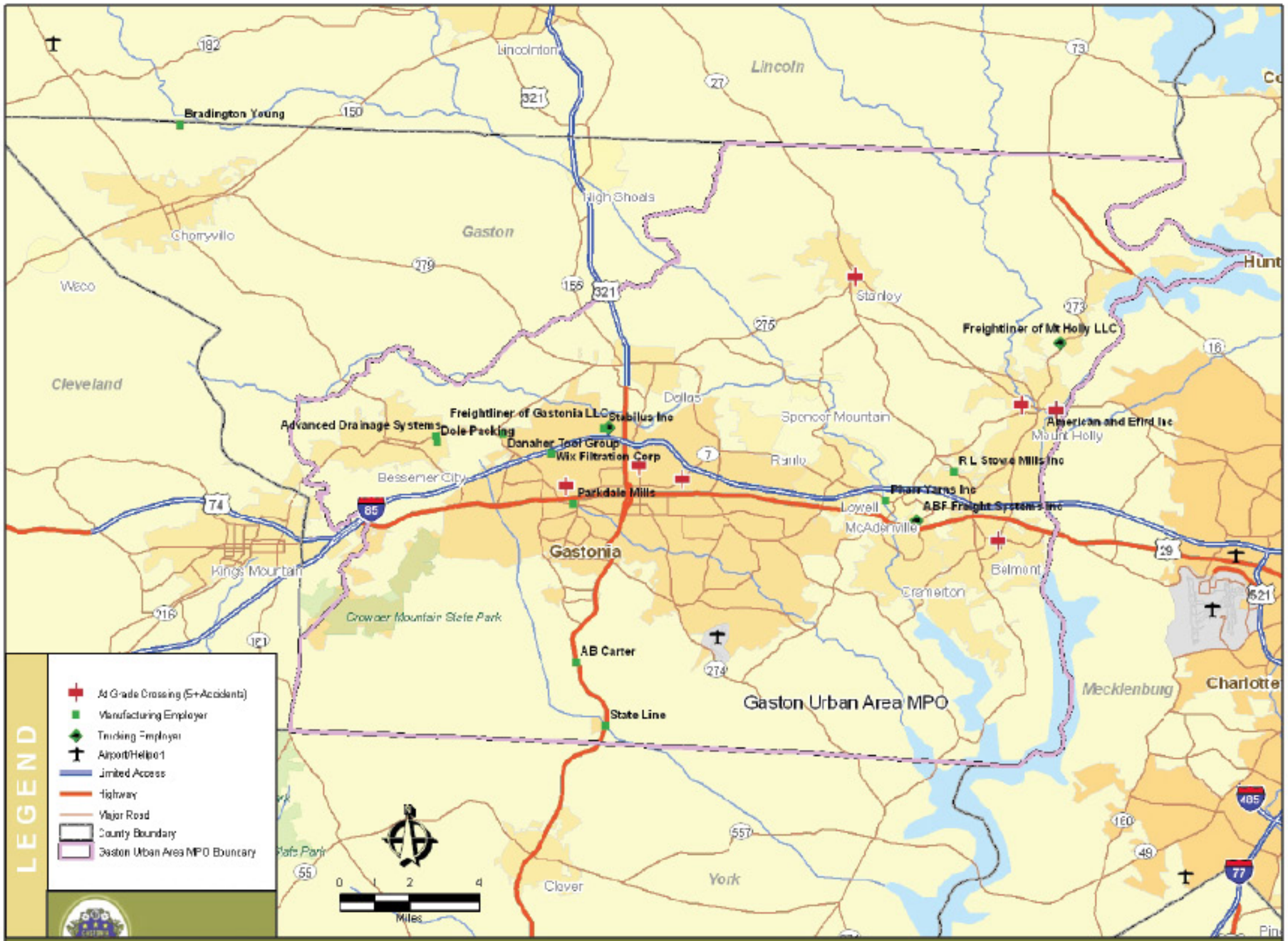
Freight Monitoring System

A freight monitoring system should be established for the GUAMPO area. There is very little vehicle classification data being collected on the major freight corridors in Gaston County. GUAMPO and the NCDOT should collaborate and identify locations along major freight corridors/roadways and conduct vehicle classifications counts on a routine basis. The data will allow GUAMPO to monitor the major freight corridors in their area. This information will also be beneficial for the Metrolina Regional Travel Demand model.

As part of a future integrated freight planning system, additional components of the freight plan could be used to monitor freight operations in the region. The first component of the monitoring program would include annual tracking of truck counts using the existing DOT classification counts in the Gaston Urban area. The truck counts should be integrated with the GIS database to understand and analyze the spatial distribution and growth rate of freight for the region. To understand growth distribution to specific facilities, the monitoring plan would also include annual 72-hour classification counts at major manufacturing facilities, major truck terminals, and big box retailers in the region. Results of the data collection efforts of the study will assist in identifying facilities for monitoring.

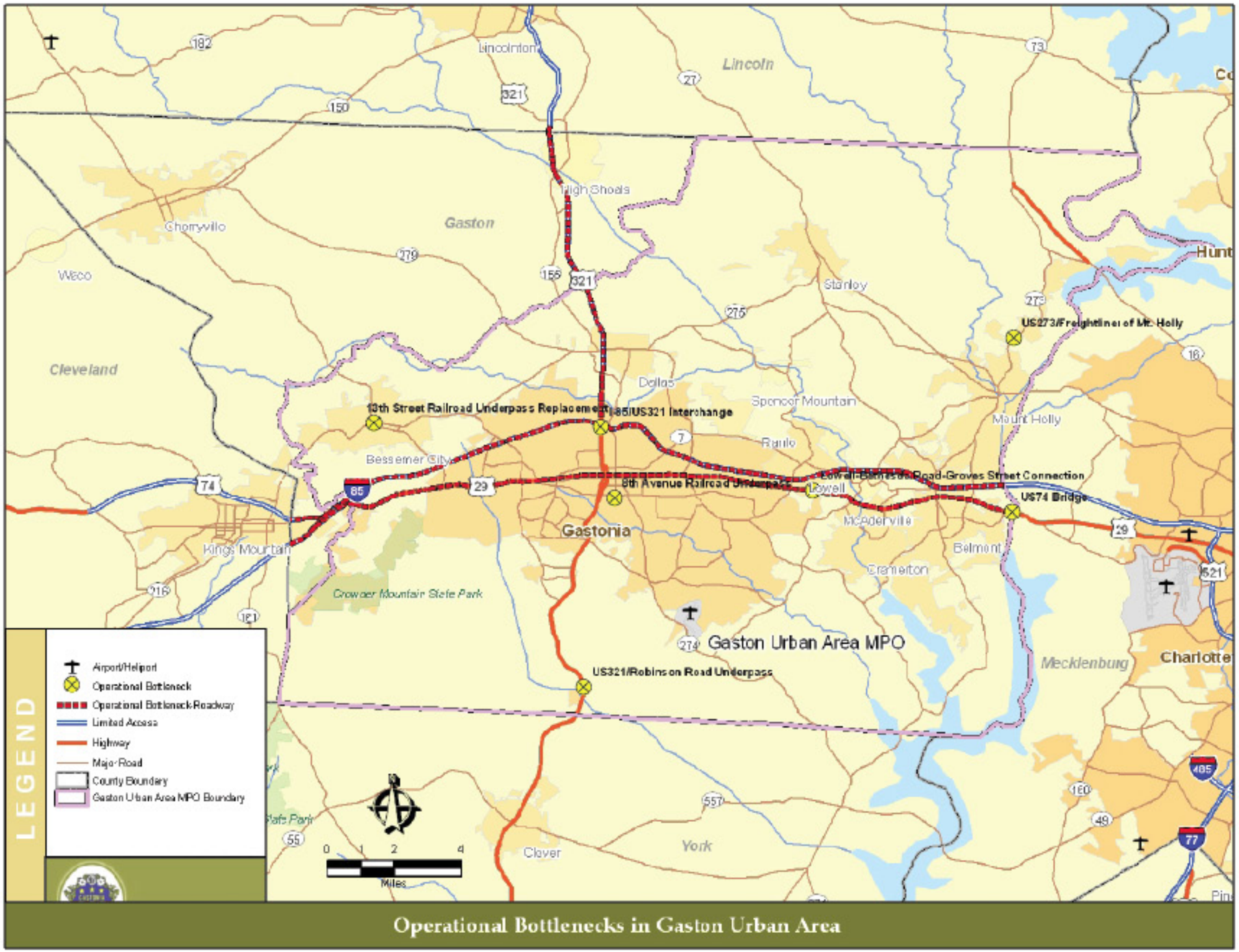
Share The Road Program

Many passenger vehicle drivers are uncomfortable driving in the vehicle mix with numerous large trucks. A Share the Road program can assist in increasing public awareness about limitations on trucks such as longer stopping distances, blind spots, slower acceleration, and large turning radii. Increasing awareness and educating the public can be done through pamphlets, signage, and even interactive programs. An example of an interactive program would be to let citizens experience what it feels like to sit in an actual truck cab and use the mirrors.



Freight-Related Employers and At Grade Crossings with Greater than 5 Accidents in Gaston Urban Area

Figure 11: **Freight-Related Employers and At Grade Crossings with Greater than 5 Accidents in Gaston Urban Area**



Operational Bottlenecks in Gaston Urban Area

Figure 12: **Operational Bottlenecks in Gaston Urban Area**

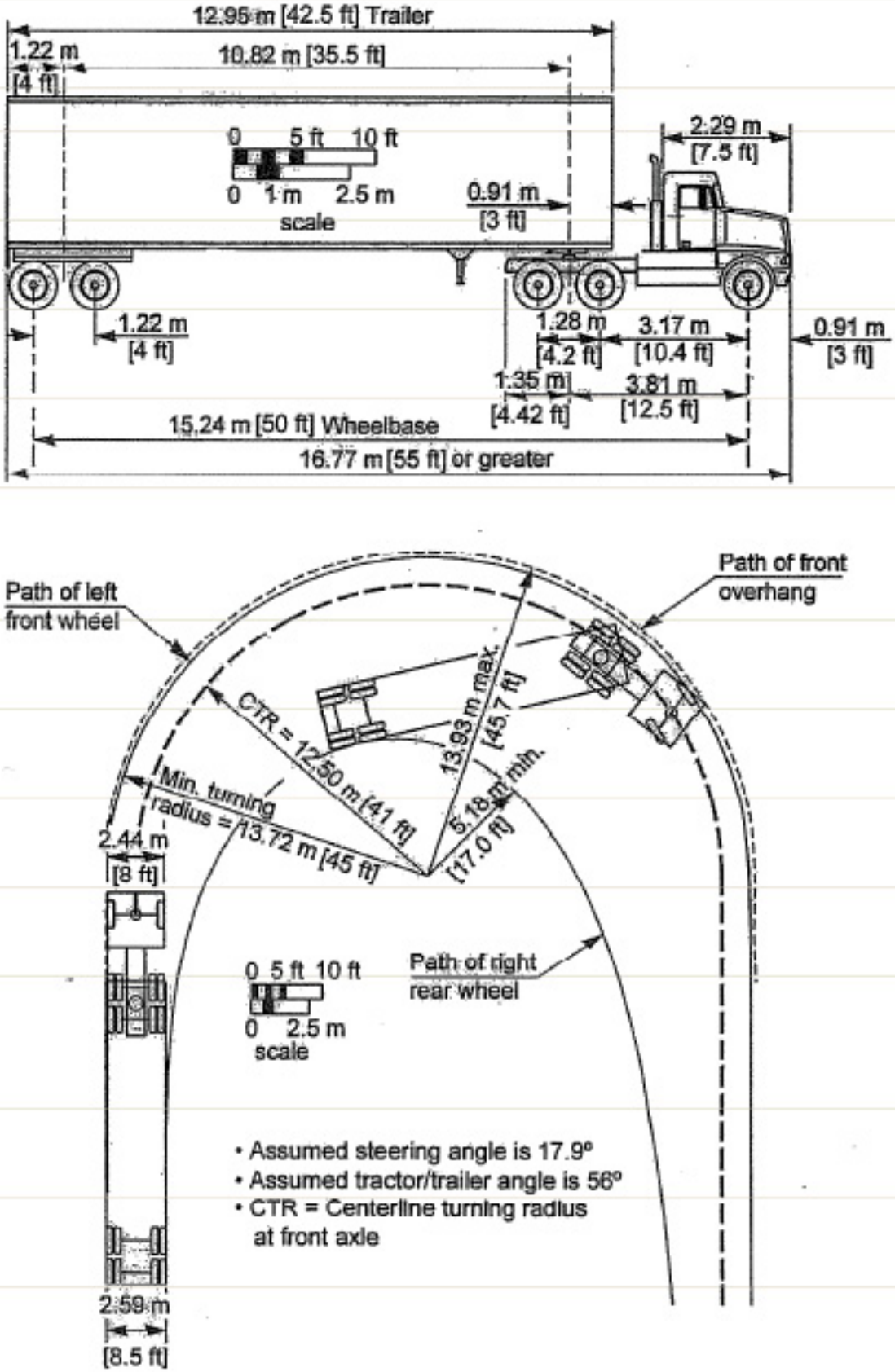


Figure 13: **Minimum Turning Path for Intermediate Semi trailer (WB-15 [WB-50]) Design Vehicle**

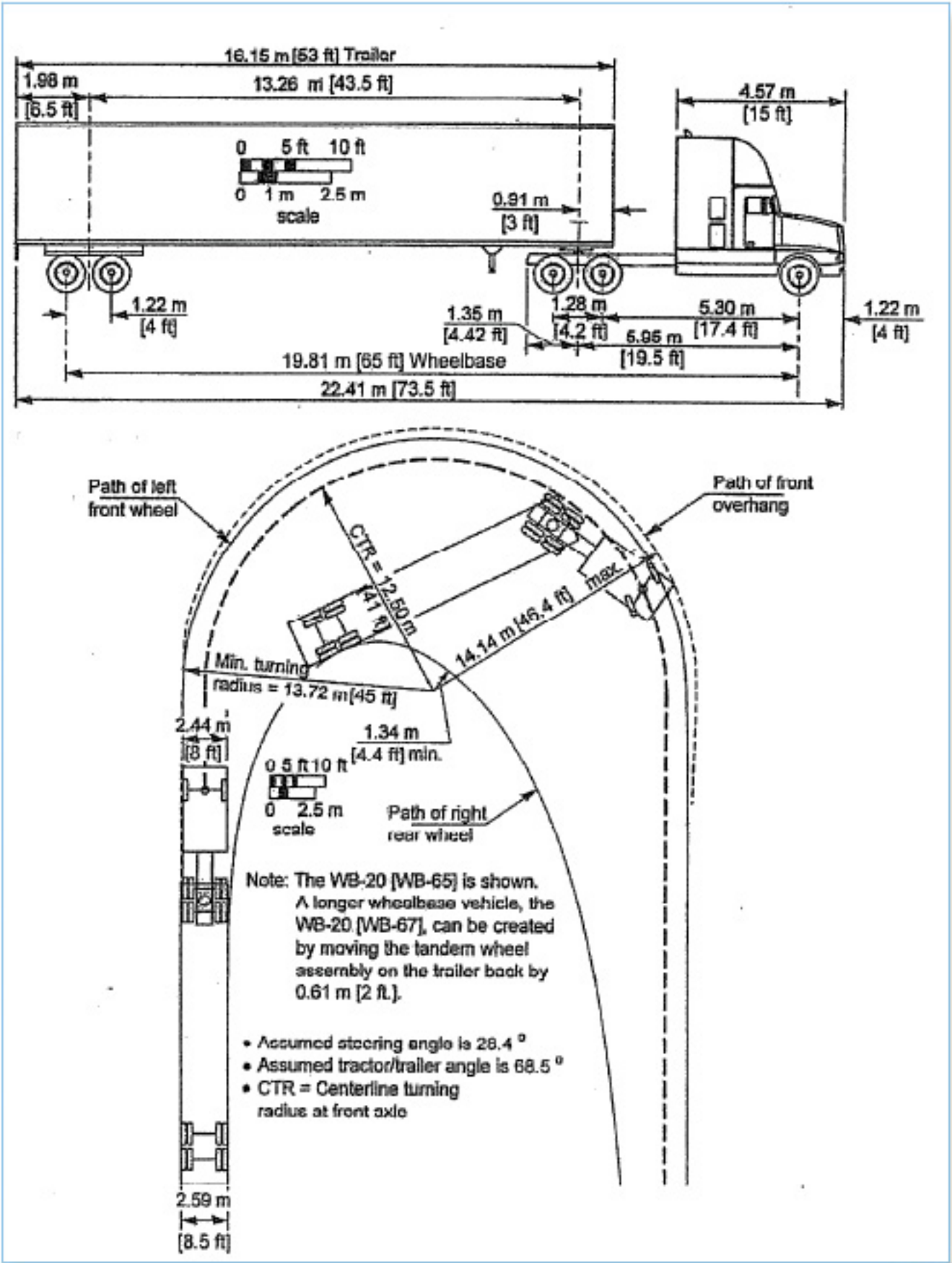


Figure 14: **Minimum Turning Path for Interstate Semitrailer (WB-20 [WB-65 and WB-67]) Design Vehicle**

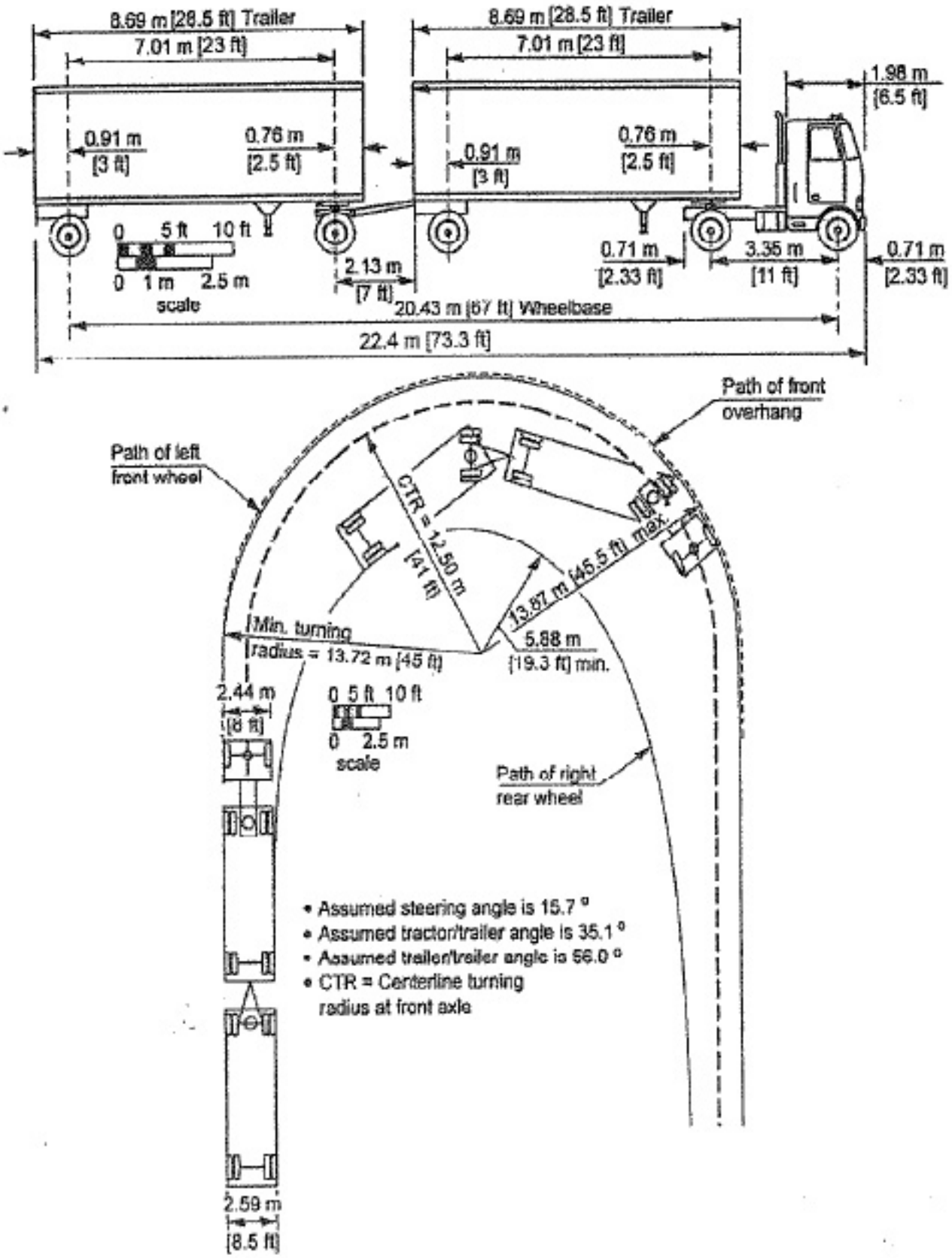


Figure 15: **Minimum Turning Path for Double-Trailer Combination (WB-20D [WB-67D]) Design Vehicle**

A.0

A.0 Public Involvement Plan

Public Involvement Plan

The Gaston Urban Area Metropolitan Planning Organization (GUAMPO) recognizes that the success of any community improvement is dependent upon a meaningful public outreach effort. As such, it is committed to conducting a proactive public involvement program that focuses on soliciting local government and community interaction throughout the study process. It is believed that the positive value of implementing a strong public involvement effort will result in public awareness of and support for the study.

The Public Involvement Plan will be updated and amended throughout the study process. The plan indicates the public involvement approach to be taken with the project and lists generally the contact persons, agencies and media officials and the means used to involve them in the process. GUAMPO will prepare responses to public inquiries as a result of the public involvement process. Collection of public input will occur throughout the duration of the study.

The GUAMPO Freight Planning process is committed to providing broad based and continuous opportunities for public involvement throughout the process. The process is designed to be responsive to citizen participants, is committed to utilizing the knowledge and understanding of citizens to address important issues, and offers multiple opportunities for engagement – at varying levels of involvement. The purpose of this Public Involvement Plan is to define how citizens and other stakeholders will be involved throughout the entire freight planning effort and how communities are provided opportunities to comment on the plan, element(s) or amendments, and have adequate access to the process of defining the community's vision, values, goals, policies, priorities, and implementation strategies.

GUAMPO must implement a program to provide for and encourage public involvement and participation during the preparation of: (1) the Freight Plan; (2) amendments to the Long Range Transportation Plan; and (3) updates to the Short-Term Work Program portion of the Plan. In addition, the Plan is intended to serve as a format to be followed in making future public planning related decisions.

Public Participation Program

The MPO will guide the citizen participation and coordination efforts associated with the plan. A series of meetings will be facilitated to build consensus through a collaborative planning process that serves to create an open, inclusive, and interactive forum. These meetings will be County-wide (including all of the Gaston Urban Area).

The purpose of these meetings will be to inform and educate the citizens of the Gaston Urban Area about the project; solicit their input and comments about the project based on the five (5) elements of the Freight Plan:

- Identify the Gaston Urban Area's freight network
- Determine the freight impact on existing infrastructure
- Assess the communities perception of freight
- Identify existing transportation projects with freight impact
- Create a freight planning strategy

The plan will involve input from Private Freight Carriers, Airports, Planning, Public Works, Community, and the Chamber of Commerce.

Committee Membership

Freight Working Group – Shall consist of selected members of the public and private community interested in transportation related issues, and will work closely with consultants to provide techniques, tools and strategies needed to inform and educate the citizens regarding the plan.

David Williams - Director of Planning:
dwilliams@co.gaston.nc.us
(704.856.3473)

Jack Kiser - Director of Planning:
jackk@cityofgastonia.com
(704.854.6632)

Bernie Yacobucci - Transportation Planner:
berniey@cityofgastonia.com
(704.865.6604)

Rusty Bost - Assistant City Engineer:
rustyb@cityofgastonia.com
(704.854.6635)

Erin Boggs - Director of Business Development:
erin@gastonchamber.com
(704.864.2621)

Shirley Williams – Director of Planning and Environment:
srwilliams@dot.state.nc.us

Jerry Orr – Aviation Director:
jorr@charlotteairport.com

Flip Bombardier – Asst. City Manager of Operations:
flipb@cityofgastonia.com
(704.866.6763)

Michael Peoples – Town Manger:
mpeoples@cramerton.org
(704.824.4337)

Felix Pruitt – Director of Engineering/City Engineer:
felixp@cityofgastonia.com

Steering Committee Meetings – The MPO's Technical Coordinating Committee will serve as the Steering Committee and will provide guidance and feedback throughout the planning process. Meetings will be scheduled at appropriate benchmarks to coincide with project deliverables and in advance of public meetings.

Public Participation & Involvement Plan Tasks

The Citizen Participation and Involvement Plan tasks are derived from the essential need to educate the public regarding the Freight Plan. The following tasks aid the planning, assessment, evaluation and implementation of the public participation and involvement plan:

Kick-Off Public Meeting – GUAMPO hosted a kick-off meeting on March 21, 2001 to officially announce the planning process to the citizens and other stakeholders. Gaston Urban Area officials were invited to introduce the process and the community participated in viewing presentations covering the project purpose and general plan approach. Initial opinion surveys, comment and volunteer sign up forms were made available at this meeting.

Public Involvement Plan (PIP) - In consultation with staff and the Freight Working Group a public involvement plan has been developed and focuses on two-way communication and involvement with the community.

Stakeholder Interviews - The GUAMPO staff and Working Group identified stakeholders to be interviewed. These stakeholders have knowledge of and a vested interest in the plan, and are affiliated with the specific geographic areas. The purpose of stakeholder interviews is to identify major issues and develop a complete understanding of the public opinions, comments, and concerns, including potential sources of conflict, and anticipated barriers impeding effective implementation. The stakeholders included leaders from:

- the Cramerton, Bessemer City, Gastonia, and Gaston County Departments of Planning;
- the Belmont, Cramerton, Dallas, Gastonia, and Mt. Holly City Manager's Offices;
- County-wide public decision-making boards, such as the Gaston County School Board and the Gastonia Planning Board;
- Local private manufacturers and service providers, such as Pharr Yarns and the Sun Drop Corporation;
- Civic and advocacy organizations, such as the NAACP;
- Freight companies that operate in the area, such as Wix Corporation and National Gypsum.

The team used prepared survey questions. The results were incorporated into the development of the Plan and used to illustrate the impact that the feedback has had on the progress of the Plan. The interview responses are included in Appendix B.

Public Outreach Program – A series of communication outlets were used to inform citizens of the process and to solicit public participation. The following are tools that were used to ensure communities were informed of the planning process:

Stakeholder database development and maintenance – Consultants worked with staff and Freight Working Group to compile and maintain a mailing list of stakeholders consisting of major employers, transportation-related industries, elected officials and interested individuals.

Public Outreach Plan – The consultant coordinated with MPO staff to identify the best media outlets to publicize the meetings. The following approach was used to inform the citizens and media about the plan progress.

Public Information Materials – Outreach materials were created and used to help the public understand the Freight Plan. These materials were distributed at public meetings, and other geographical locations to establish visible, continuous public feedback (for example: fact sheets, comment forms, newsletters, displays, flyers, press releases, notices, stakeholder database, signs, and other outreach methods).

Conduct Two (2) Community Workshops – The first workshop was an informational meeting held at the Westfield Shopping Town Mall. Over 25 people received infor-

mation on the project, including the purpose and goals. The public was given the opportunity to provide comments on their understanding of the freight issues in the Gaston Urban Area.

The second interactive workshop was held in Cramerton on June 28, 2007. The findings and recommendations of the study were presented to the community.

Open House – Final public meeting and open house presentation of the Draft Freight Plan is scheduled for September 11, 2007.

Monthly Staff/Freight Working Group Meeting - Monthly meetings were scheduled and held to maintain the desired timelines, benchmarks and overall direction of the plan process.

Scheduled Public Involvement

- March 21 Project Team meeting - kick-off meeting
- April 13 Develop freight work group
- April 20 Document public outreach process
- May 17 Stakeholder & Community meeting - needs assessment presentation
- June 28 Work group & Community meeting – Findings and Recommendations

B.0

B.0 Stakeholder Interviews

Stakeholder Interviews

In order to understand the needs of various groups and individuals, one-on-one interviews were conducted with various stakeholders. These individuals were chosen by the MPO project team and included city planners, city managers, and departmental staff, members of the freight community, and neighborhood and business leaders. During the interview, each stakeholder was asked the following questions:

1. How does freight impact your organization? (if applicable)
2. What percentage of your company's finances are spent on freight related issues? (if applicable)
3. How does the existing network of roads, train tracks, bridges, etc. work in terms of the flow of freight? Are there any issues with trucks having to take indirect, inconvenient or bad routes? Are trains having to travel on tracks that are falling apart? If so, where does this happen, and what seems to be the problem?
4. What are your major safety issues?
5. How can the Metropolitan Planning Organization assist with any of your issues related to freight?
6. Finally, would you be at all interested in participating on the Gaston Urban Area Metropolitan Planning Organization freight taskforce? If so, how involved would you like to be?

A number of those interviewed shared concerns about road capacity along a number of routes throughout the region. One example that was provided is Peach Orchard Rd. in Bellmont, which lacks the capacity to carry heavy trucks. The major freight company ABF Freight Systems is located on Peach Orchard Rd. and are forced to send drivers along a less convenient route in order to access I-85. One interview suggested that a study should be initiated to explore the viability of increasing the capacity of Peach Orchard Rd. Two other examples were identified in Cramerton. The under pass linking Cramer Mountain Rd. to 8th Ave in downtown Cramerton is too narrow for the current volume of traffic, which often results in bottlenecks. Similarly, US 74 narrows from three lanes to two lanes in preparation of the South Fort River Bridge in Cramerton, resulting in significantly slowed traffic.

A concern over the structural integrity of at least one bridge was also identified during the interviews. The Davidson Ave. bridge in Gastonia has recently been slated to be rebuilt under the federal bridge reconstruction program. However, there is growing concern over the amount of time it takes to move from planning to construction under the federal system. Gastonia has had experience with this in the past with the Tulip Dr. bridge, which was put under the federal system seven years ago and is just now being put up for construction bids. The US 74 bridge was also identified as being in need of reconstruction. Lanes are quite narrow, and the route will eventually be used to access the yet to be constructed Charlotte multi-modal facility.

Linked to road capacity is perhaps the most pervasive issue to emerge from interviews, the US 321 and I-85 interchange. According to many interviewees, due to the design of the interchange, queues and bottlenecks often occur on both US 321 and I-85, which can be both dangerous and inconvenient. When the interchange was constructed, a full clover leaf design was not possible because of the adjacent P&N railroad line. The line is no longer operational, however, which led many interviewees to suggest that the interchange be redesigned and rebuilt. Another issue related to the interchange is the fact that US 321 is currently not an STAA route. Freight companies such as ABF must therefore take alternate routes to reach I-40. Some interviewed believe that, especially if the interchange is rebuilt, US 321 should be changed to an STAA route.

A safety concern emerged in the interviews regarding at-grade railroad crossings. In Mount Holly, for example, the city recently completed a streetscape improvement initiative to make downtown more pedestrian-friendly. However, there is currently an at-grade rail crossing downtown that pedestrians must walk over, compromising the safety, and therefore vitality, of the pedestrian environment. Similarly, in Gastonia, a study was conducted last year on the possibility of removing four at-grade crossings on the Norfolk Southern line. Three removed, while one still remains. Some suggest that other crossings are dangerous and should perhaps be removed as well.

As for new road construction, a few interviewees expressed interest in the proposed Garden Parkway. Most hope that the MPO will advocate for that project and push for quick implementation. In the mean time, at least one interviewee expressed his hope that an interim short-term solution can be developed for freight while the region awaits the new route. For example, a connection between 279 and I-485 was identified as a useful short-term solution. Also, a bridge crossing north of Mt. Holly would be helpful in opening up access to I-77.

With regard to air freight, at least one interviewee noted that Gaston County is lacking an airport that can handle freight. He mentioned that the county had a plan and funding in place in the 1990s to construct an airport in the northwest corner of Gastonia, but that the initiative was killed by city council. He suggested that, in order for the county to remain competitive in the global economy, an air-industrial park should be constructed in the county that can facilitate just-in-time deliveries.

Finally, way-finding signage was identified in the interviews as an area in need improvement. One example is the intersection of Lakewood Rd. and Eagle Rd. in Cramerton where trucks are missing signs and accidentally ending up in downtown Cramerton. Such occurrences are a nuisance and have implications for safety as well.

While interviewees from different parts of the county identified local concerns, albeit with regional implications, many of the interviewees shared the same concerns. The US 321 and I-85 interchange was by far the most often mentioned issue; however, concerns regarding road capacity, intersections, and at-grade crossing often had many similarities. Many of those interviewed also expressed an interest remaining involved in the issues and participating on the MPO's proposed Freight Task Force.