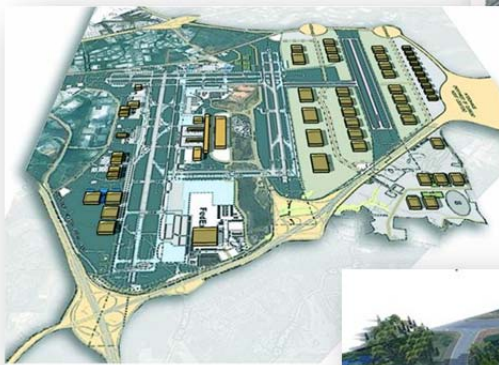


# SEVEN PORTALS STUDY

*An Investigation of Economic Development in  
North Carolina Through Logistics Villages*

Research Triangle Region

Final Report



December 31, 2011

Cover illustrations by Sherman Architect, PLLC  
Used with permission from the Piedmont Triad Partnership

## TECHNICAL REPORT DOCUMENTATION PAGE

Report No. <b>FHWA/NC/2010-34-4</b>	Government Accession No.	Recipient's Catalog No.	
4. Title and Subtitle <b>Seven Portals Study: An Investigation of Economic Development in North Carolina Through Logistics Villages – Triangle Region Report</b>		Report Date <b>December 31, 2011</b>	
		Performing Organization Code	
Author(s) <b>Robert S. Foyle and Alixandra Demers</b>		Performing Organization Report No.	
Performing Organization Name and Address <b>North Carolina State University Institute for Transportation Research and Education Campus Box 8601 Raleigh, NC 27695-8601</b>		Work Unit No. (TRAIS)	
		Contract or Grant No.	
Sponsoring Agency Name and Address <b>North Carolina Department of Transportation Research and Analysis Unit 104 Fayetteville Street, Room 268 Raleigh, NC 27601</b>		Type of Report and Period Covered  <b>Final Report July 1, 2010 – December 31, 2011</b>	
		Sponsoring Agency Code <b>2010-34</b>	
Supplementary Notes:			
<p>Abstract</p> <p>The goal of this study was investigating potential logistics villages within one of the seven economic development regions across the state, specifically the Research Triangle Region. The initial focus was proximity for air, rail, and highway connectivity at potential sites, but the study discovered other possibilities for successful villages. Each village is evaluated for strengths, weaknesses, and needs, with emphasis on identifying what infrastructure improvements are needed to support such a village at that location. The study does not recommend specific sites above others. The major findings from this study are incorporated into a master report covering the entire state titled <i>Seven Portals Study – An Investigation of How Economic Development Can be Encouraged in North Carolina Through Infrastructure Investment</i>.</p> <p>Through research, data analyses, and outreach efforts to businesses, economic development offices, local officials, and planning offices, seven potential logistics villages, including the Raleigh-Durham International Airport area, were investigated for their strengths, weaknesses and needs in support of major shipment activity. The region is focusing business development in these areas: advanced medical care, agricultural biotechnology, analytical instrumentation, biological agents and infectious diseases, interactive gaming and e-learning, cleantech, defense technologies, informatics, nanoscale technologies, pervasive computing, pharmaceuticals, and sustainability.</p>			
Key Words <b>Logistics, Freight Shipments, Land Development, Cargo, Commodity, Infrastructure, Logistics Village, Distribution Center</b>		Distribution Statement	
Security Classif. (of this report) Unclassified	Security Classif. (of this page) Unclassified	No. of Pages 75	Price

---

# **Seven Portals Study**

*An Investigation of Economic Development in North Carolina  
Through Logistics Villages*

## **RESEARCH TRIANGLE REGIONAL PARTNERSHIP REPORT**

**By**

**Robert S. Foyle, P.E.**

Associate Director

Institute for Transportation Research and Education

**Alixandra Demers, Ph.D., P.E.**

Research Assistant Professor

North Carolina State University

**For the**

**Governor's Logistics Task Force**

**and**

**The North Carolina Department of Transportation**

**Final Report**

**December 31, 2011**

---

---

## **Disclaimer**

The contents of this report reflect the views of the authors and not necessarily the views of the University. The authors are responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the North Carolina Governor's Office, the North Carolina Department of Transportation, the North Carolina Department of Commerce, nor any other state agency or state authority at the time of publication. This report does not constitute a standard, specification, or regulation.

---

## Acknowledgements

This regional study was accomplished through the dedicated efforts of a small study team which is part of a much larger study team looking at both statewide issues and other commerce regions. The study team members for this region included:

### **NCSU Team**

**Dr. Alixandra Demers, P.E.** – Steering Group member, assistant project manager, lead writer, recorder of meeting minutes, report formatter and editor, and Research Triangle Region team member.

### **ITRE Team**

**Mr. Robert Foyle, P.E.** – Co-Principal Investigator responsible for and involved in all aspects of the entire project, lead writer, editor, and Research Triangle Region team member.

The study team greatly appreciates all the support given to the team from Mr. Charles Diehl and Mr. Roberto Canales, P.E., with the Department of Transportation, and Mr. Joseph “Jed” McMillan, DOT/Commerce Advisor. These individuals provided significant support and participation in meetings, visioning sessions, and presentations. Additionally, the team expresses appreciation to all individuals contacted for input and feedback on this study, including members of the Regional Hub Design Subcommittee under the Governor’s Logistics Task Force. The information shared with the study team members was critical to our understanding of the issues facing the state and possible actions for the state to address these issues. Lastly, the team appreciates the guidance and input from Dr. George List, Principal Investigator for the project, and Dr. Larry Goode, consultant and Steering Group member in helping shape the overall approach for data collection, analysis, and reporting results.

---

---

# Table of Contents

<b>LIST OF FIGURES .....</b>	<b>v</b>
<b>LIST OF TABLES .....</b>	<b>vi</b>
<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
<b>1 INTRODUCTION.....</b>	<b>6</b>
<b>1.1 OVERVIEW OF THE REGION .....</b>	<b>7</b>
1.1.1 TRANSPORTATION IMPROVEMENT PROGRAM (TIP) .....	19
1.1.2 REGIONAL TRAVEL TIMES .....	20
1.1.1 RAIL FACILITIES AND SERVICES.....	22
1.1.2 COORDINATION WITH OTHER REGIONS .....	28
1.1.3 RESEARCH TRIANGLE PARK.....	29
<b>1.2 GOALS OF THE REGION .....</b>	<b>30</b>
<b>2 POTENTIAL LOGISTICS VILLAGES .....</b>	<b>33</b>
<b>2.1 LOGISTICS VILLAGE 1 – RALEIGH-DURHAM INTERNATIONAL AIRPORT AREA .....</b>	<b>33</b>
2.1.1 STRENGTHS.....	37
2.1.2 WEAKNESSES.....	38
2.1.3 NEEDS.....	39
<b>2.2 LOGISTICS VILLAGE 2 – TRIANGLE NORTH PROPERTIES .....</b>	<b>39</b>
2.2.1 STRENGTHS, WEAKNESSES AND NEEDS .....	41
<b>2.3 LOGISTICS VILLAGE 3 – JOHNSTON COUNTY.....</b>	<b>43</b>
2.3.1 STRENGTHS, WEAKNESSES, AND NEEDS .....	46
<b>2.4 LOGISTICS VILLAGE 4 – SANFORD-LEE COUNTY EXECUTIVE JETPORT AREA .....</b>	<b>47</b>
2.4.1 STRENGTHS.....	50
2.4.2 WEAKNESSES.....	51
2.4.3 NEEDS.....	51
<b>2.5 OTHER POTENTIAL LOGISTICS/DEVELOPMENT SITES .....</b>	<b>52</b>
2.5.1 VERIDEA DEVELOPMENT IN APEX, NC .....	52
2.5.2 FRIENDSHIP SITE IN HOLLY SPRINGS, NC .....	52
2.5.3 PERSON COUNTY AIRPORT, ROXBORO, NC .....	52
<b>3 SUMMARY.....</b>	<b>53</b>
<b>3.1 LOGISTICS VILLAGES SUMMARIZED.....</b>	<b>53</b>
<b>4 OUTREACH .....</b>	<b>56</b>
<b>5 REFERENCES.....</b>	<b>58</b>

<b>6 APPENDIX.....</b>	<b>59</b>
------------------------	-----------

<b>6.1 PRESENTATION TO THE GLTF ON DECEMBER 15, 2010 .....</b>	<b>59</b>
--	-----------

## List of Figures

FIGURE 1-1: THE RESEARCH TRIANGLE COMMERCE REGION .....	6
FIGURE 1-2: GENERAL FEATURES WITHIN THE RESEARCH TRIANGLE REGION .....	8
FIGURE 1-3: RAIL NETWORK WITHIN THE RESEARCH TRIANGLE REGION .....	9
FIGURE 1-4: UNEMPLOYMENT RATE 2009 .....	11
FIGURE 1-5: NET MIGRATION RATE 2000 – 2009 .....	12
FIGURE 1-6: ECONOMIC DEPENDENCE BY COUNTY.....	17
FIGURE 1-7: PERCENT CHANGE IN EMPLOYMENT 2008-2009 .....	18
FIGURE 1-8: CREATIVE CLASS 2000.....	19
FIGURE 1-9: TRAVEL TIMES TO WORK IN 1990 FROM EACH COUNTY.....	20
FIGURE 1-10: TRAVEL TIMES TO WORK IN 2000 FROM EACH COUNTY.....	21
FIGURE 1-11: NORTH CAROLINA RAILROAD SYSTEM .....	22
FIGURE 1-12: PASSENGER RAIL SERVICE ON THE NCRR SYSTEM .....	26
FIGURE 1-13: SOUTHEAST HIGH SPEED RAIL CORRIDOR .....	27
FIGURE 1-14: FUTURE BUS AND RAIL CORRIDOR STUDY MAP .....	28
FIGURE 2-1: AERIAL VIEW OF LOGISTICS VILLAGE 1 SITE.....	33
FIGURE 2-2: HIGHWAY NETWORK AND STATE PARK SURROUNDING RDU AIRPORT.....	34
FIGURE 2-3: 60-MILE RADIUS CENTERED ON RDU AIRPORT .....	35
FIGURE 2-4: 30-MINUTE DRIVE TIME WITHIN RDU AIRPORT .....	36
FIGURE 2-5: AVAILABLE SITES (★) AND BUILDINGS (■) NEAR RDU AIRPORT .....	37
FIGURE 2-6: VIEW OF LOGISTICS VILLAGE 2 SITES .....	40
FIGURE 2-7: AERIAL VIEW OF LOGISTICS VILLAGE 3 SITE.....	43
FIGURE 2-8: 10-MILE RADIUS CENTERED ON JOHNSTON COUNTY AIRPORT.....	44
FIGURE 2-9: 30-MINUTE DRIVE TIME WITHIN JOHNSTON COUNTY AIRPORT .....	45
FIGURE 2-10: AVAILABLE SITES (★) AND BUILDINGS (■) NEAR JOHNSTON COUNTY AIRPORT....	45
FIGURE 2-11: AERIAL VIEW OF LOGISTICS VILLAGE 4 SITE.....	48
FIGURE 2-12: 10-MILE RADIUS CENTERED ON SANFORD-LEE COUNTY AIRPORT .....	49
FIGURE 2-13: AVAILABLE SITES (★) AND BUILDINGS (■) NEAR SANFORD-LEE COUNTY AIRPORT .....	50
FIGURE 2-14: 30-MINUTE DRIVE TIME WITHIN SANFORD.....	51



---

---

## List of Tables

TABLE ES-1: SUMMARY OF POTENTIAL LOGISTICS VILLAGES.....	3
TABLE ES-2: ASSESSMENT MATRIX .....	4
TABLE 1-1: POPULATION AND UNADJUSTED EMPLOYMENT BY COUNTY .....	10
TABLE 1-2: INDUSTRY OVERVIEW FOR THE REGION .....	13
TABLE 1-3: NUMBER OF TOP 25 COMPANIES BY EMPLOYER CATEGORY AND SIZE.....	14
TABLE 1-4: TOP FOUR EMPLOYER CATEGORIES .....	15
TABLE 1-5: COMPANY SIZE BY EMPLOYER CATEGORY.....	16
TABLE 1-6: WORKER TRAVEL TIME FOR THE REGION .....	21
TABLE 1-7: SHORTLINES IN THE RESEARCH TRIANGLE REGION.....	24
TABLE 2-1: STRENGTHS, WEAKNESSES, AND NEEDS FOR TRIANGLE NORTH PROPERTIES .....	41
TABLE 3-1: SUMMARY OF POTENTIAL LOGISTICS VILLAGES .....	54
TABLE 3-2: ASSESSMENT MATRIX .....	55

## Executive Summary

This report presents an investigation and analysis of some potential logistics villages for the Research Triangle Commerce Region of North Carolina.<sup>1</sup> It responds to a request from the Governor's Logistics Task Force to explore infrastructure needs associated with possible logistics villages across the state. This part of the study only discusses possibilities within the Research Triangle Region, one of the seven commerce regions in the state.

The initial focus for a logistics village was available land (+500 acres) with proximity for air, rail, and highway connectivity at potential sites, but the study discovered other possibilities for successful villages. Each village is evaluated for strengths, weaknesses, and needs, with emphasis on identifying what infrastructure improvements are needed to support such a village at that location. The study does not recommend specific sites above others. The major findings from this study are incorporated into a master report covering the entire state titled *Seven Portals Study – An Investigation of How Economic Development Can be Encouraged in North Carolina Through Infrastructure Investment*.

The Research Triangle Region enjoys a very strong climate for business growth. There are many reasons for this, with the foremost being excellent leadership from the Research Triangle Regional Partnership (RTRP). The RTRP brings together the region's business executives and government managers to focus on actions that lead to continued economic prosperity for the region. Several completed studies and reports document the successes that RTRP has achieved in attracting jobs to the region. Part of this success comes from targeted actions around the "clusters of innovation" concept, where the region's virtues are marketed to companies in one of these 12 target clusters:

- Advanced medical care
- Agricultural biotechnology
- Analytical instrumentation
- Biological agents and infectious diseases
- Interactive gaming and e-learning
- Cleantech
- Defense technologies
- Informatics
- Nanoscale technologies
- Pervasive computing
- Pharmaceuticals
- Sustainability

The region includes the highly successful Research Triangle Park, a major job generator at +50,000 workers. But with limited nearby residential development, long commutes are prevalent, often from employees living in other counties besides Wake, Durham and Orange. There are also world-class medical facilities and medical research hospitals, international firms employing thousands, and high-tech start-up companies hoping to grow into larger companies. The region is clearly focused on innovation as a key driving force in future job growth and economic prosperity.

---

<sup>1</sup> Logistics, originally a military term, is the efficient and effective planning, implementation, and control of the flow of goods, services, people, and related information between points of origin and points of consumption to meet customer requirements. (Paraphrased from the Council of Logistics Management Professionals)

Transportation services needed to support individual business activity could involve highway, rail, air, water, pipeline, or internet connectivity. The region has ample transportation services in all of these areas along with close proximity to the Ports of Wilmington and Morehead City for maritime import/export, plus the Port of Norfolk to the northeast. The major infrastructure needs for the region involve increased highway capacity, including new freeways like the Western Wake Freeway, to support the high traffic demands (with some relief if regional BRT or LRT services were available), and connection of water, sewer, power, and IT to current or planned sites to facilitate business growth and the quick decisions made by business executives. Relieving highway congestion has the added benefit of providing better trucking services for on-time pickup and delivery.

Improvement of rail capacity through the Southeast High Speed Rail Corridor initiative will provide for parallel tracks along the corridor from Charlotte to Raleigh to Richmond, VA and on to Washington, D.C., along with improved curvature and reduced at-grade crossings. These significant improvements will enhance both rail freight and passenger services along this corridor.

Again, the initial concept was to identify potential logistics villages with proximity access to highway, rail, and air services. This took the form of first identifying the major airports in the region, and then checking on land availability plus highway and rail connectivity to the airport and adjacent land. Discussions with economic development offices, urban and rural planners, airport managers and others helped identify four major villages for study.

1. Raleigh-Durham (RDU) International Airport Area
2. Triangle North Properties (4 sites)
3. Johnston County
4. Sanford-Lee County Executive Jetport Area

Table ES-1 summarizes the strengths, weaknesses and needs for each of the potential logistics villages. The table focuses on major components within each category. Specific details are described in the section write-up for each of the villages.

Following Table ES-1 is Table ES-2, a brief comparison of the villages. Together, the tables provide the reader with a quick assessment of the ease or difficulty of developing a site into a major logistics village. The reader should be aware that the list does not include all sites available in the region. There are many smaller sites (50 to 150 acres) being developed or planned for development, plus some larger multi-use sites (up to 1,000 acres) that will certainly have local and regional impact if enough jobs are created by the business, office, and retail services planned for these sites.

**Table ES-1: Summary of Potential Logistics Villages**

	<b>STRENGTHS</b>	<b>WEAKNESSES</b>	<b>NEEDS</b>
<b>RDU</b> <b>Aviation-related</b> <b>(Tier 3)</b>	Proximity to RTP. I-40, I-540, US 70 access is excellent. FTZ #93 nearby. Relationship with RTRP.	Rail inaccessible. Site constrained, but 3 <sup>rd</sup> runway can fit.	Transit service to/from RTP if internal loop system built within RTP.
<b>TRIANGLE NORTH</b>			
<b>Franklin:</b> <b>Technology &amp; aviation</b> <b>(Tier 2)</b>	250 ac. site. Development ready. US 401 access. Adjacent to GA airport.	CSX rail 8 mi. away	US 401 to be multilane to I-540.
<b>Granville:</b> <b>Life science &amp; technology</b> <b>(Tier 2)</b>	Certified 527 ac. site with 1 mi. road & utilities in-place. I-85 access & frontage. GA airport 3 mi. away. CSX rail 2 mi. (open).	RDU 40 mi. away.	None.
<b>Vance:</b> <b>Technology &amp; manufacturing</b> <b>(Tier 1)</b>	Certified 422 ac. site. Vance-Granville CC. I-85 access & frontage. GA airport 5 mi. away. CSX rail 3 mi away (open).	RDU 45 mi. away.	None.
<b>Warren:</b> <b>Logistics, distribution, manufacturing</b> <b>(Tier 1)</b>	1,000 ac. site. Re-certification in process. US 1/158 access (I-85 3 mi. away); CSX rail ½ mi. (open).	GA airport 16 mi. away. RDU 60 mi. away.	Rail connection for major logistics/ distribution/ intermodal activity.
<b>SANFORD-LEE COUNTY</b> <b>(Tier 2)</b>	Relationship between GA airport & LCEDC is excellent. Good highway and rail connectivity.	No sewer line to airport.	Sewer line to airport. US 421 bypass connectors on east and west ends.
<b>JOHNSTON COUNTY</b> <b>(Tier 3)</b>	350 ac. certified Four Oaks site. 250+ ac. site in Selma with rail access. I-40 & I-95 cross. NS & CSX rail cross. Proximity to military installations. Johnston County CC.	GA airport seems isolated from county economic development efforts.	Strengthen GA airport operations as gateway to the county for new business.

**Table ES-2: Assessment Matrix**

Measure	Village 1 RDU	Village 2 Triangle North Properties ***	Village 3 Johnston County	Village 4 Lee County
Facility Type*	Air-truck hub.	F: air-truck hub. V & W: truck-rail hubs. G: air-truck-rail hub.	Truck-rail intermodal facility.	Truck-rail-air hub.
Target Industries	Aviation-related.	F: tech & aviation. G: life science & tech. V: tech & manufacturing. W: logistics, distribution, & manufacturing.	Aviation-related. Manufacturing. Logistics, distribution.	Pharmaceuticals. Aviation-related. Manufacturing.
Speed of Implementation	Ongoing.	Next 5-10 years.	Next 10-20 years.	Next 5-10 years.
Infrastructure - Transport				
Highway	I-40, I-540, US 70	I-85, US 1, US 401	I-40 & I-95 cross, US 70	US 1, US 64, I-95
Rail	NS in vicinity but direct access not sought.	CSX near all but Franklin.	NS & CSX cross, CSX parallels I-95. 3.5 miles from JNX but direct access requires grade separation.	NS & CSX cross, also a short line.
Air	RDU – commercial av.	LHZ, HNZ – general av.	JNX – general av.	TTA – general av.
Existing runways (ft)	10,000/ 7,500/ 3,500	F: 5,500/	5,500	6,500
Can runways be extended?	Not needed, but a 3 <sup>rd</sup> parallel runway can be added.	F: Yes, could go to 7,000 ft. with purchase of property.	Already extended twice; none planned – watershed issues.	Yes, plan is extend to 8,000 ft. and strengthen to 100K lbs.
Maritime (ship/barge)	Wilmington 2 hours by highway.	Norfolk, possibly. Morehead City.	Wilmington & Morehead City 2 hours by highway.	Wilmington & Morehead City 2 hours by highway.
Infrastructure - Other				
Communications	High speed internet.	High speed internet.	High speed internet.	High speed internet.
Power	Electricity, gas.	Elec. & gas available except no gas at Franklin site.	Electricity, gas.	Electricity, gas.
Water	Cary, Raleigh.	G: Oxford. V: Henderson. W: Warren Co. F: Franklin Co.	Smithfield, Selma, Clayton.	Sanford.
Sewer	Cary, Raleigh.	G: Oxford. V: Henderson. W: Warren Co. F: Franklin Co.	Smithfield, Selma, Clayton.	Sanford.
Land Available (acreage)	Limited on-site.	G: 527 ac. V: 422 ac. W: 1,000 ac. F: 250 ac.	Several, esp. along I-95; Four Oaks = 350 ac. site; Selma = 250 ac. site.	Sites from 5-50 ac. at TTA and 100-800 ac. in the county. Lee Co. Industrial Park at 167 ac.
Labor Force Availability	Excellent.	Fair to good, since rural.	Good; some ex-military with logistics skills.	Good.
Education Programs to Support Local Industry	Multiple universities and community colleges.	Vance-Granville CC.	Johnston County CC and Workforce Development Center programs include: BioWork, pharma, CDL training.	Central Carolina CC.
Specialty Criteria**	Foreign Trade Zone #93			

\* Facility type = major business practice at this location (intermodal facility, warehouse, distribution center, light manufacturing, and so forth).

\*\* Specialty Criteria = foreign trade zone, customs, high-security, and so forth.

\*\*\* F = Franklin Co. site; V = Vance Co. site; W = Warren Co. site; G = Granville Co. site.

Assessment criteria evolved as the study progressed and interviews were conducted and, in general, follow the site criteria below<sup>2</sup>:

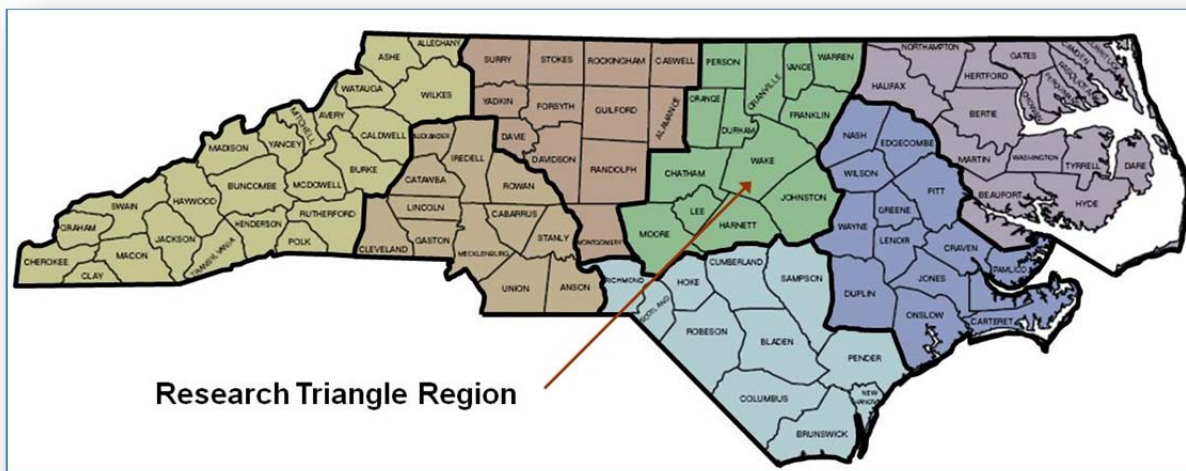
Criteria Investigated	Criteria Outside Study Scope
<ul style="list-style-type: none"> <li>• Sites and/or building suitability <i>[initially +500 acres]</i></li> <li>• Site preparation <i>[to the extent easily captured by documented sources]</i></li> <li>• Utility infrastructure (availability, cost, reliability) <i>[detailed cost estimates not captured within this study]</i></li> <li>• Transportation infrastructure <i>[key focus area for this study]</i></li> <li>• Demographics <i>[general information only]</i></li> <li>• Labor markets (availability, quality, costs) <i>[mostly a regional perspective]</i></li> <li>• Training resources and delivery <i>[general information only]</i></li> <li>• Education (primary, secondary, postsecondary) <i>[general information only]</i></li> <li>• Quality of life (e.g., medical services, housing availability and cost, etc.) <i>[only some items captured; not studied in detail]</i></li> <li>• Leadership and political climate <i>[regional perspective only]</i></li> </ul>	<ul style="list-style-type: none"> <li>• Taxes</li> <li>• Financing opportunities</li> <li>• Incentives</li> </ul>

In summary, the region supports a robust economy overall, especially for Wake, Durham, Orange, and Johnston counties, although there are some counties, like Warren, struggling to hang on to the small number of jobs and residents in that county. Percent unemployment is lower than the state average, population is growing, and there is strong leadership from the business community. Innovation is the key to the region's success, whether for pharmaceuticals, medical care, or gaming. Post-production of agriculture crops could also help support jobs in rural areas. Poultry and pork products could become important export commodities to South America and Africa in refrigerated containers through the ports with expanded refrigeration warehousing at either or both ports.

<sup>2</sup> See [http://www.mccallumsweeney.com/site\\_selection.shtml](http://www.mccallumsweeney.com/site_selection.shtml)

# 1 Introduction

The Research Triangle Commerce Region is centrally located within the state as seen in Figure 1-1. This region has remained fairly stable through some recent transitions and economic turmoil, primarily through the efforts of regional and local economic development staff and business leaders.



**Figure 1-1: The Research Triangle Commerce Region**

(Source: NC Department of Commerce)

The Research Triangle Regional Partnership (RTRP), formed in 1994 after several years as the Raleigh-Durham Association, provides economic development leadership for the region through studies aimed at identifying strategies that offer a competitive advantage in attracting companies to the region. In fact, the region added over 110,000 jobs during the period from 2004-2009<sup>3</sup>. This was not a random occurrence, but the result of dedicated effort, and dollar investment, on the part of government and business leaders to join together in a cohesive and cooperative thrust in marketing and soliciting targeted businesses.

The businesses sought after were to be involved in 10 clusters, called “clusters of innovation,” a term that came from another study in 2004<sup>4</sup> where specific industries were targeted to come to this region of the state. The 10 original clusters have been changed slightly and added onto, resulting in the current listing of 12 targeted industry clusters:

<sup>3</sup> “State of the Research Triangle Region: An in-depth look at the region’s economic health and competitive position.” RTI International and Research Triangle Regional Partnership, May 21, 2009.

<sup>4</sup> “Staying on Top: Winning the Job Wars of the Future.” Research Triangle Regional Partnership, March 2004.

- Advanced medical care
- Agricultural biotechnology
- Analytical instrumentation
- Biological agents and infectious diseases
- Interactive gaming and e-learning
- Cleantech
- Defense technologies
- Informatics
- Nanoscale technologies
- Pervasive computing
- Pharmaceuticals
- Sustainability

Each county within the region has both a vested interest and a commitment from businesses and communities to promote and seek companies that can fit into one of these categories. Obviously, some other manufacturing company or business desiring to set up operations in this region would be welcome. Still, the focus is on creating this niche business environment where innovation feeds into and off of other companies located in the area resulting in the entire region profiting from this synergy with continued prosperity and job growth.

### 1.1 **Overview of the Region**

The region's 13 counties are home to the state capital and government services in Raleigh, the world-renowned Research Triangle Park (RTP), the metro areas of Raleigh, Cary, Durham, Chapel Hill and numerous other towns, three (3) major research universities, eight (8) additional universities and colleges, an extensive community college (7) support network, major cultural and sports venues, excellent interstate and US route connectivity, a major commercial airport at Raleigh-Durham International (RDU) and three reliever business airports, numerous housing options, several top-ranked public and private golf courses, and recreational opportunities via lakes and city/state parks. Some of these features are shown in Figure 1-2, and more details will follow when discussing specific development opportunities within the region.

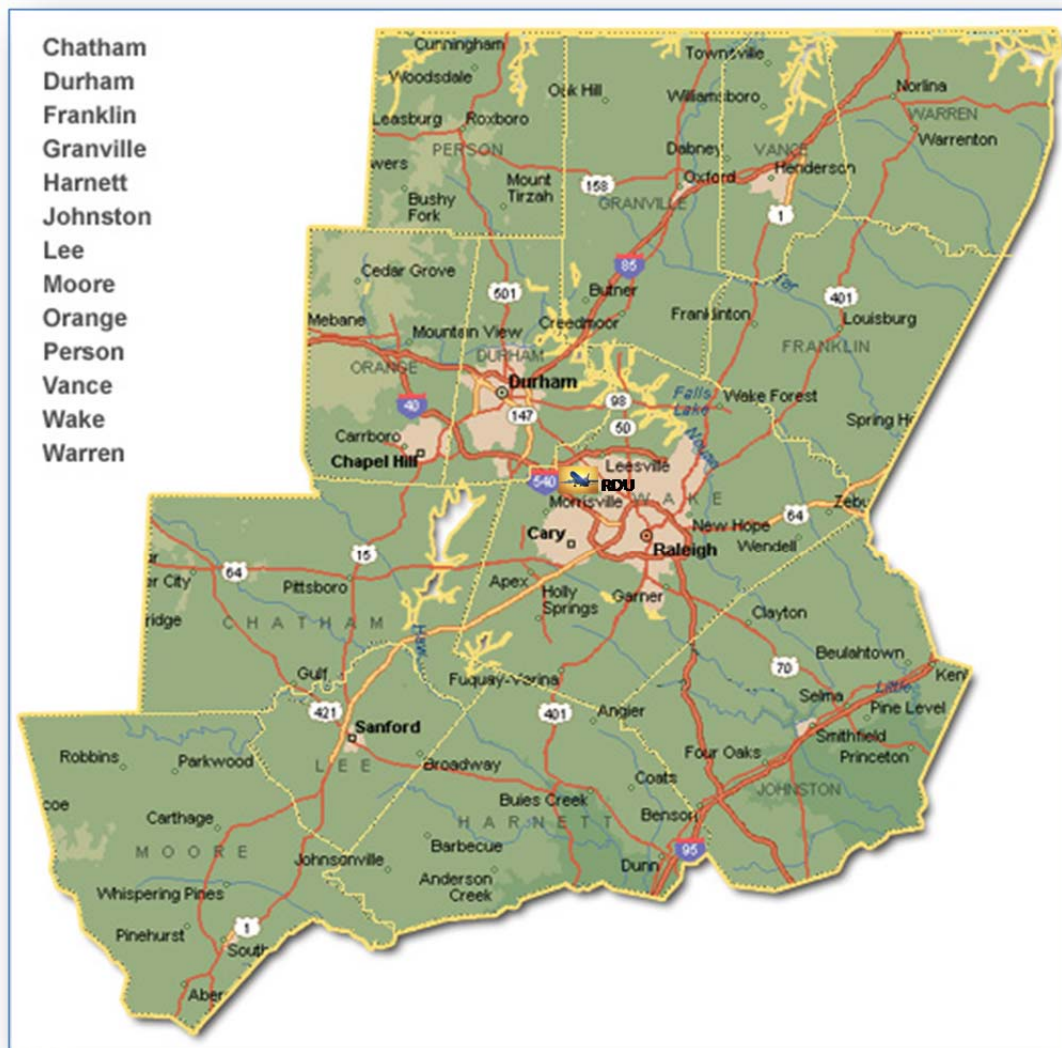
Additional demographic features of the region include the following:

- Land: 6,644 sq. mi.
- Population: 2.00 million
- Labor force: 974,450
- 8.0% unemployment [Dec. 2010] (range is 5.8% to 12.5%)
- \$884 avg. weekly wage
- \$77,100 avg. household income
- \$30,419 per capita income
- 31% commute outside of county they reside in
- Tier 1 counties for CY2011: Vance and Warren
- Tier 2 counties for CY2011: Franklin, Granville, Harnett, Lee, Person
- Tier 3 counties for CY2011: Chatham, Durham, Johnston, Moore, Orange, Wake
- Foreign Trade Zone #93

The breadth of facilities and opportunities makes the region very attractive for companies seeking a high quality of life for their employees. This is a vibrant region with an active business climate that both encourages and spawns innovation and job growth. In fact, RTRP



received a national award for developing, promoting, and implementing the very successful “clusters of innovation” concept as a niche market opportunity. The success of RTP was a strong motivator in this decision, with other companies moving into this area for the skilled workforce, university expertise, and entrepreneurship opportunities available in the region. One success story is that the region is now home to the highest concentration of gaming companies in the world. Clearly the “clusters of innovation” concept is working and will continue being promoted (and adjusted based on business opportunities) by economic development staff and business leaders.



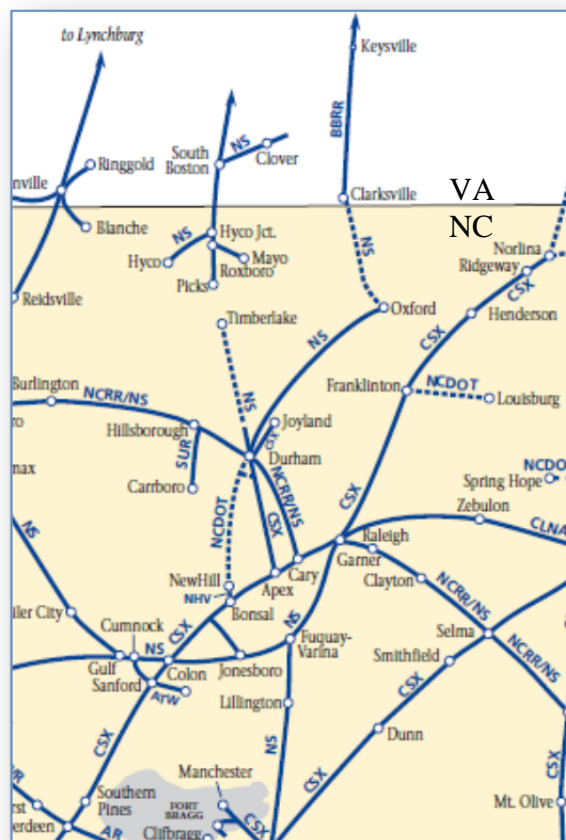
**Figure 1-2: General Features within the Research Triangle Region**

(Source: Research Triangle Regional Partnership)

The major highway network for the region includes portions of interstate routes I-40, I-85, and I-95 (see Figure 1-2) providing extremely good north-south and east-west connectivity with the rest of the state and to adjacent states. The network of US and NC routes complements and

supports highway travel throughout the region with multilane highways and in some cases freeways (US 1, US 64, and NC 147) on these routes. Note that portions of I-540 (the Raleigh Outer Loop) have been completed or are under construction and are not shown on the figure. Specific highway needs are identified when discussing specific logistics villages. Projects listed in the State Transportation Improvement Program are described in Section 1.1.1–Transportation Improvement Program.

Similarly, Figure 1-3 illustrates the strong connectivity of the region by rail. Both Class I railroads (CSX and Norfolk Southern) and Class III short lines (including CLNA – Carolina Coastal Railway Co., AR – Aberdeen & Rockfish Railroad Co., A&W – Atlantic & Western Railway Co., and Aberdeen Carolina & Western Railway Co.) cover the region. CSX and NS cross in both Johnston and Lee counties, making both counties attractive for possible rail distribution locations. The current rail network can support business opportunities for companies needing access to a rail line, although a short spur may be needed to connect into a specific site.



**Figure 1-3: Rail Network within the Research Triangle Region**  
(Source: NC Department of Transportation)

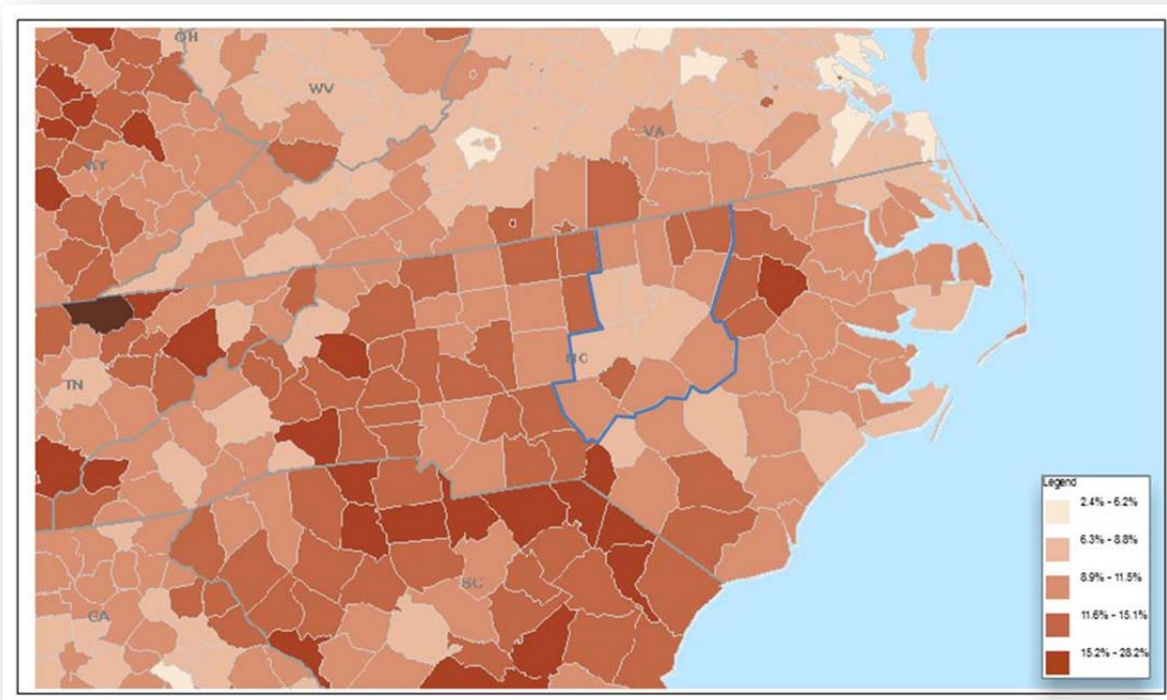
Table 1-1 shows the population and growth rate from April 2000 to July 2009, the unadjusted employed and unemployed workforce (through December 2010), and the unemployed rate for each county. The region as a whole is growing much faster and maintains a lower unemployment rate than the state. Yet, within the region there are counties like Vance and Warren which are struggling to keep people in the county and employ those who remain. Harnett and Lee counties, while having good growth rates, have high unemployment rates. Counties with population growth rates over 20% include Chatham, Franklin, Harnett, Johnston, and Wake. Much of this population growth is from residential developments with job growth predominately in Wake and Durham counties. Wake, Durham, and Orange counties are certainly strong economic engines for the region through state government employment, overall business development, the Research Triangle Park and peripheral business development, and the universities, medical centers, and colleges in the Triangle area.

**Table 1-1: Population and Unadjusted Employment by County**

(Source: NC Employment Security Commission)

	Population [Jul'09]	Growth Rate [Apr'00-Jul'09] (%)	Through December 2010		
			Employed	Unemployed	Unemployed Rate (%)
<b>Chatham</b>	62,480	26.7	31,172	2,117	6.4
<b>Durham</b>	266,130	19.3	130,710	9,959	7.1
<b>Franklin</b>	59,190	25.2	24,724	2,555	9.4
<b>Granville</b>	57,435	18.4	22,768	2,421	9.6
<b>Harnett</b>	112,845	24.0	42,205	4,911	10.4
<b>Johnston</b>	168,220	37.9	69,730	6,748	8.8
<b>Lee</b>	58,560	19.4	23,801	2,721	10.2
<b>Moore</b>	86,945	16.3	32,958	3,083	8.6
<b>Orange</b>	132,270	11.9	64,988	4,003	5.8
<b>Person</b>	38,270	7.5	17,129	1,890	9.9
<b>Vance</b>	43,615	1.5	16,990	2,422	12.5
<b>Wake</b>	892,410	42.1	413,512	33,610	7.5
<b>Warren</b>	19,930	-0.2	6,762	897	11.7
<b>REGION</b>	1,998,300	29.0	896,729	77,724	8.0
<b>STATE</b>	9,382,610	16.6	4,000,315	428,595	9.7

The unemployment rate for 2009 is shown in Figure 1-4 from another source. Based on the figure, the counties with the highest percent unemployment are Lee, Vance, and Warren (brown). The crescent counties of Chatham, Durham, Orange, and Wake have the lowest unemployment rates (beige). The region's remaining counties of Franklin, Granville, Harnett, Johnston, Moore, and Person have moderate unemployment rates (tan). The picture for 2010 data (based on the table) would show improvement (reduced unemployment) for Johnston, Lee, Moore, and Orange Counties, with the other counties remaining in the same bracket.

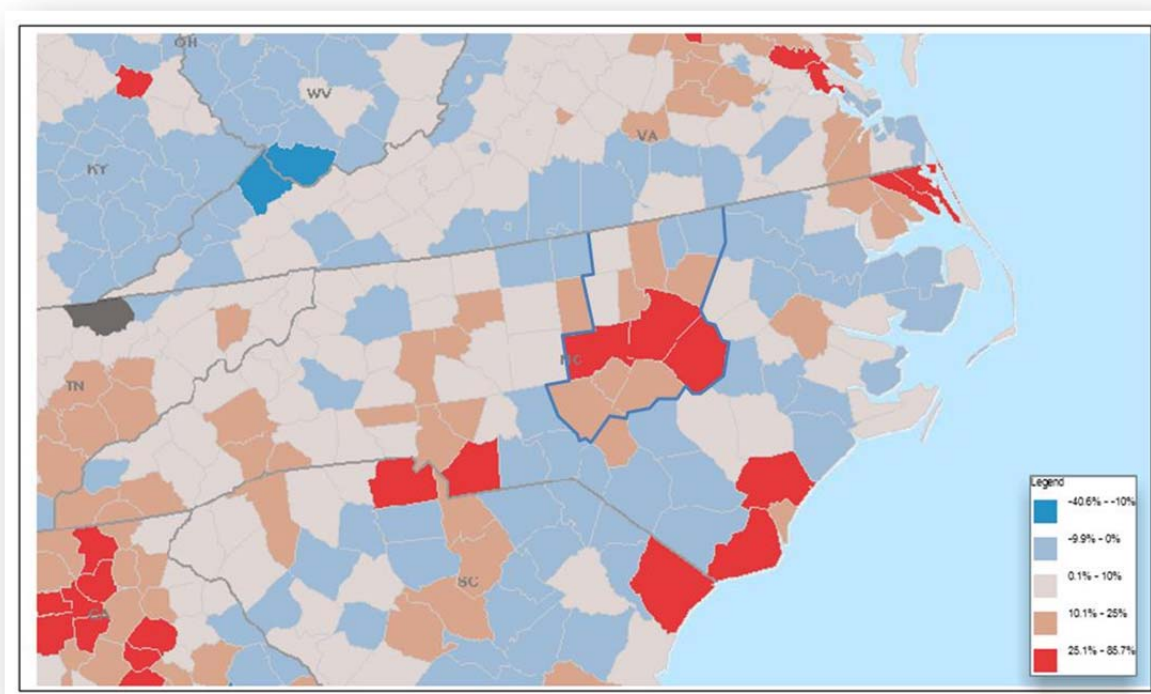


**Figure 1-4: Unemployment Rate 2009**

(Source: *Atlas of Rural and Small Town America*, USDA ERS, <http://www.ers.usda.gov/data/ruralatlas/atlas.htm#map>)

The net migration rate by county is provided as a map in Figure 1-5. The data source for the map covers the same time period (2000 – 2009) as that shown in Table 1-1. Chatham, Johnston, and Wake Counties show the highest net migration rate (red). Durham, Franklin, Granville, Harnett, Lee, and Moore Counties are showing a moderate net migration rate (tan). Orange and Person Counties show a slight net migration rate (grey). Vance and Warren Counties have a slight net departure rate (light blue). There are no counties in the Research Triangle Region with a high net departure rate (medium blue). This figure reinforces the growth patterns of the region, with Chatham and Johnston counties experiencing high population growth, but the new residents are commuting to jobs in Durham, Orange, and Wake Counties.





**Figure 1-5: Net Migration Rate 2000 – 2009**

(Source: *Atlas of Rural and Small Town America*, USDA ERS, <http://www.ers.usda.gov/data/ruralatlas/atlas.htm#map>)

Table 1-2 displays the employment makeup of the region by industry category for the years 2000, 2005, and 2009. Employment data by industry category through December 2010 were not available at the time of this report.

The top part of the table shows employment by federal, state, and local governments and for private industry, along with a total in the gray highlight row. Total employment increased by 0.8% for 2000-2009, with the period 2005-2009 showing a slower growth trend. All sectors are showing an employment increase from 2000-2009, although there appears to have been consolidation of state government agencies during this period by the decline in number of agencies from 446 to 291.

The bottom part of the table shows the number of companies and employment by industry category (NAICS two-digit code) for the three years shown. Industries with >1.0% decline include Mining, Construction, Manufacturing, Transportation and Warehousing, Information, and Administrative and Waste Services. Industries with >1.0% increase include Wholesale Trade, Finance and Insurance, Real Estate and Rental and Leasing, Professional and Technical Services, Educational Services, Health Care and Social Assistance, Arts Entertainment and Recreation, Accommodation and Food Services, and Public Administration. Industry categories with greater than 5,000 jobs growth from 2000-2009 include Finance and Insurance (+6,948), Professional and Technical Services (+12,852), Educational Services (+24,485), Health Care and

Social Assistance (+36,198), Accommodation and Food Services (+13,835), and Public Administration (+9,429).

**Table 1-2: Industry Overview for the Region**

(Source: NC Employment Security Commission, EDIS database)

Employment by NAICS Industry - Research Triangle Region									
NAICS Code	Industry	2000		2005			2009		Annual % Change in Employment from 2000
		Number	Annual Average Employment	Number	Annual Average Employment	Annual % Change in Employment from 2000	Number	Annual Average Employment	Annual % Change in Employment from 2005
	Total Federal Government	287	12,483	279	12,215	-0.4%	283	13,209	2.0%
	Total State Government	446	67,729	342	73,004	1.6%	291	77,260	1.5%
	Total Local Government	566	64,983	595	75,276	3.2%	633	76,648	0.5%
	Total Private Industry	42,997	663,000	45,887	673,570	0.3%	52,437	698,368	0.9%
10	Total All Industries	44,296	808,195	47,499	844,151	0.9%	53,644	865,485	0.6%
11	Agriculture, Forestry, Fishing & Hunting	540	4,339	463	3,991	-1.6%	439	4,002	0.1%
21	Mining	37	1,255	35	507	-11.9%	49	856	17.2%
22	Utilities	*	*	60	3,198	*	59	2,998	-1.6%
23	Construction	6,039	47,695	5,885	50,347	1.1%	5,932	42,793	-3.8%
31	Manufacturing	1,809	121,565	1,589	96,946	-4.1%	1,614	83,204	-3.5%
42	Wholesale Trade	2,801	28,182	2,678	30,871	1.9%	3,095	31,736	0.7%
44	Retail Trade	6,243	92,348	6,026	91,957	-0.1%	6,234	92,195	0.1%
48	Transportation and Warehousing	1,018	21,220	953	18,877	-2.2%	959	18,350	-0.7%
51	Information	902	25,996	860	21,917	-3.1%	1,021	21,912	0.0%
52	Finance and Insurance	2,187	23,009	2,481	24,703	1.5%	2,648	29,957	5.3%
53	Real Estate and Rental and Leasing	1,730	11,149	1,982	12,273	2.0%	2,199	12,262	0.0%
54	Professional and Technical Services	5,776	50,371	6,440	56,345	2.4%	7,519	63,223	3.1%
55	Management of Companies and Enterprises	212	11,881	222	12,544	1.1%	278	12,805	0.5%
56	Administrative and Waste Services	2,753	54,909	2,866	50,109	-1.7%	3,349	49,613	-0.2%
61	Educational Services	750	75,352	903	91,561	4.3%	1,090	99,837	2.3%
62	Health Care and Social Assistance	3,224	89,431	3,782	108,973	4.4%	4,598	125,629	3.8%
71	Arts Entertainment and Recreation	549	10,675	563	10,045	-1.2%	651	13,169	7.8%
72	Accommodation and Food Services	2,771	56,820	3,113	64,087	2.6%	3,635	70,655	2.6%
81	Other Services, Ex. Public Admin	4,231	22,189	3,926	22,824	0.6%	4,127	23,066	0.3%
92	Public Administration	657	55,724	544	59,436	1.3%	512	65,153	2.4%
99	Unclassified	*	*	1,736	2,557	*	3,643	2,079	-4.7%

\* = Data not available.

Additional data analysis for industries by NAICS three-digit code shows the following:

- Manufacturing
  - Continued decline in Textile Mills and Textile Product Mills
  - Decline in Wood Product Manufacturing
  - Large decline in Computer and Electronic Product Manufacturing
  - Increase in Chemical Manufacturing
  - Increase in Merchant Wholesalers (Durable and Nondurable Goods)
- Finance and Insurance
  - Increase in Credit Intermediation & Related Activity
- Health Care and Social Assistance
  - Increases in all sub-sectors of Ambulatory Health Care Services, Hospitals, Nursing and Residential Care Facilities, and Social Assistance
- Accommodation and Food Services
  - Slight decline in Accommodation
  - Large increase in Food Services and Drinking Places
- Public Administration
  - Large increase in Executive, Legislative and General Government

Table 1-3: Number of Top 25 Companies by Employer Category and Size

Employer Category	Size	Chatham	Durham	Franklin	Granville	Hammett	Johnston	Lee	Moore	Orange	Person	Vance	Wake	Warren	Totals	Category Total	% of Total
Education & Health Services	1,000+	1	5	1	1	1	2	1	2	4	1	1	5		24	77	24%
	500-999		1		1	2	1	1	1		1	1			9		
	250-499	2		1				1	3	1	2	1		1	12		
	100-249	5		2	3	5	1	1	3	1	2	4		1	28		
	50-99			2								1		1	4		
	< 50														0		
Manufacturing	1,000+	1	4		1		1	3							10	74	23%
	500-999		2		1		1	2				1			7		
	250-499	2		1	3		3	5		2	1	1			18		
	100-249	6		6	5	3		1	2		2	2		2	29		
	50-99			3							3			1	7		
	< 50												3	3	3		
Trade, Transportation, & Utilities	1,000+		1			1		1		1		1	7		9	68	21%
	500-999		1				1	1							5		
	250-499					2	5	2	1	6	3				19		
	100-249	4		3	4	3	1	2	3	3	3	4			30		
	50-99										1				1		
	< 50													4	4		
Public Administration	1,000+		5		2		1						7		15	47	14%
	500-999		1	1	1	1		1	1	2	1				9		
	250-499	1			1	1	3					2		2	11		
	100-249			1	1	1			3		1				7		
	50-99			2											2		
	< 50												3	3	3		
Leisure & Hospitality	1,000+								1				1		2	27	8%
	500-999														0		
	250-499						1			2					3		
	100-249	1				3	1	1	4	2		2			14		
	50-99										3	1			4		
	< 50												4	4	4		
Professional & Business Services	1,000+		3				1			1		1	1		4	17	5%
	500-999						1								3		
	250-499			2	1	1		1				1			3		
	100-249										1				4		
	50-99														1		
	< 50												2	2	2		
Construction	1,000+														0	6	2%
	500-999														0		
	250-499														0		
	100-249	1					1	1	1		1	1			6		
	50-99														0		
	< 50														0		
Financial Activities	1,000+		2										2		4	4	1%
	500-999														0		
	250-499														0		
	100-249														0		
	50-99														0		
	< 50														0		
Information	1,000+												2		2	3	1%
	500-999														0		
	250-499					1									1		
	100-249														0		
	50-99														0		
	< 50														0		
Natural Resources & Mining	1,000+														0	2	1%
	500-999														0		
	250-499														0		
	100-249	1													1		
	50-99														0		
	< 50												1	1	1		

Another way of analyzing the region's employment base is Table 1-3, which shows the number of companies by employer category and size for the top 25 within each county. Wake and Durham Counties have the highest number of employers with over 1,000 employees each, and in many cases company employees number over ten thousand. Wake County has all top 25 employers with over 1,000 employees each while Warren County has no employer this large with many employers in the top 25 having fewer than 50 employees each.

Of the 325 employers grouped in the table, the top four employer categories are: 1) Education & Health Services, 2) Manufacturing, 3) Trade, Transportation, & Utilities, and 4) Public Administration, representing a combined 82% of the employers tabulated. A closer look at the top employer categories (see Table 1-4) shows employers with 250 or more employees represent a significant portion of the number of employers in each category.

**Table 1-4: Top Four Employer Categories**

Employer Category	No. of Companies with >250 Employees	Percentage Within Employer Category
Education & Health Services	45	58%
Manufacturing	35	47%
Trade, Transportation, & Utilities	33	49%
Public Administration	35	74%

These numbers highlight the significance of these four employer categories in the sustained economic prosperity of the region. It also affirms the significance that education (university, community college, and county school systems), medical facilities (Duke, UNC, and other regional hospitals), major manufacturing companies, and government agencies have in helping keep stable, high paying jobs in the area.

What is not described above is the large number of small companies looking to make their mark in this global economy. Start-up companies able to raise capital may have only 5-10 employees initially. If they can create a marketable product, they can grow into a larger company. Many of the current gaming companies fit this scenario, with the Digital Games Research Center at NC State University formed to support this industry.

The RTRP website contains a wealth of information on the region. One document lists the top 80 employers, by name and number of employees, within the entire region from February 2009 data. Summarizing this information for comparison shows the following:



**Table 1-5: Company Size by Employer Category**

<b>Employer Category</b>	<b>No. of Companies</b>	<b>%</b>	<b>No. of Employees</b>	<b>%</b>
Education & Health Services	23	29%	126,306	38%
Manufacturing	17	21%	37,441	11%
Trade, Transportation, & Utilities	17	21%	39,043	12%
Public Administration	9	11%	97,377	30%
Leisure & Hospitality	2	3%	2,379	1%
Professional & Business Services	4	5%	11,000	3%
Financial Activities	6	8%	10,877	3%
Information	2	3%	5,406	2%
<b>Totals</b>	<b>80</b>	<b>100%</b>	<b>329,829</b>	<b>100%</b>

One important observation from this tabulation is the correlation between Education & Health Services employers and the high number of employees. The top nine (9) individual listings (February 2009 data) show the following:

- Duke University & Medical Center (31,000)
- UNC-Chapel Hill (17,243)
- Wake County Public School System (16,755)
- UNC Healthcare System (7,644)
- NC State University (7,219)
- WakeMed Health and Hospitals (6,893)
- Durham Public School system (5,489)
- Rex Healthcare (4,400)
- FirstHealth Moore Regional Hospital (3,200)

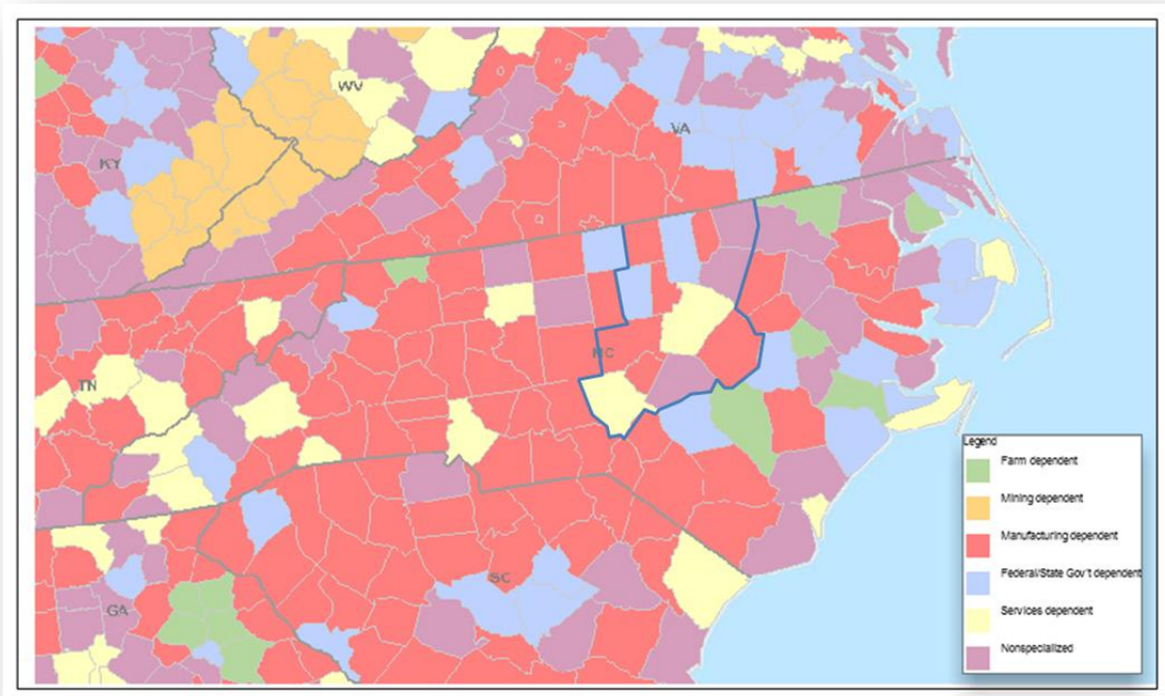
For Public Administration, the number of employees is highly influenced by the State of North Carolina with region-wide employment of 79,549. Other top employers include:

- IBM Corporation (11,530 – Manufacturing)
- Wal-Mart Associates, Inc. (6,786 – Trade, Transportation, & Utilities)
- Food Lion LLC (5,142 – Trade, Transportation, & Utilities)
- Cisco Systems Inc. (4,600 – Manufacturing)
- Securitas Security Systems USA Inc. (4,500 – Professional & Business Services)
- City of Raleigh Government (4,376 – Public Administration)
- SAS Institute (4,206 – Information)
- Blue Cross and Blue Shield of NC (4,033 – Financial Activities)
- Progress Energy (3,600 – Trade, Transportation, & Utilities)
- Wake County Government (3,500 – Public Administration)

Overall, the Research Triangle Region maintains a strong economy through the stability of these large employers. Smaller companies or start-up companies are nurtured by the synergy within

the region and can grow to be substantial companies, with Red Hat being a prime example. The strength of the region allows the “clusters of innovation” concept to thrive in an environment that encourages entrepreneurial companies to start up in this region.

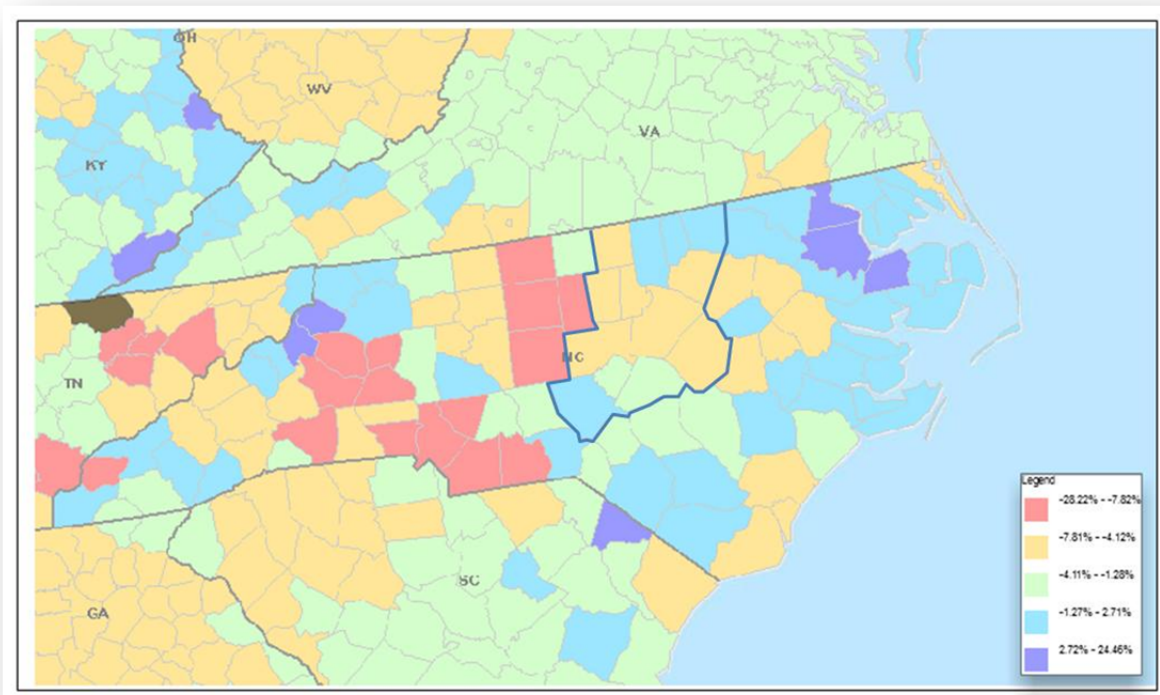
Figure 1-6 displays the primary industry for each county. The predominant theme is Manufacturing for Chatham, Durham, Johnston, Lee, Person and Vance Counties (red). Federal and State Government is the theme identified for Orange and Granville Counties (light blue). The theme of Services marks Moore and Wake counties (light yellow). Lastly, Franklin, Harnett, and Warren Counties are Non-specialized theme counties (purple).



**Figure 1-6: Economic Dependence by County**

(Source: *Atlas of Rural and Small Town America*, USDA ERS, <http://www.ers.usda.gov/data/ruralatlas/atlas.htm#map>)

Figure 1-7 depicts the percent change in employment from 2008-2009, key years in the economic slowdown across the country. The bulk of the counties had a reduction between -7.8% to -4.12% in employment (yellow). Harnett and Lee Counties had a reduction between -4.11% to -1.28% in employment (light green). The remaining four counties overall showed regional stability of employment change between -1.27% to +2.71% (light blue).

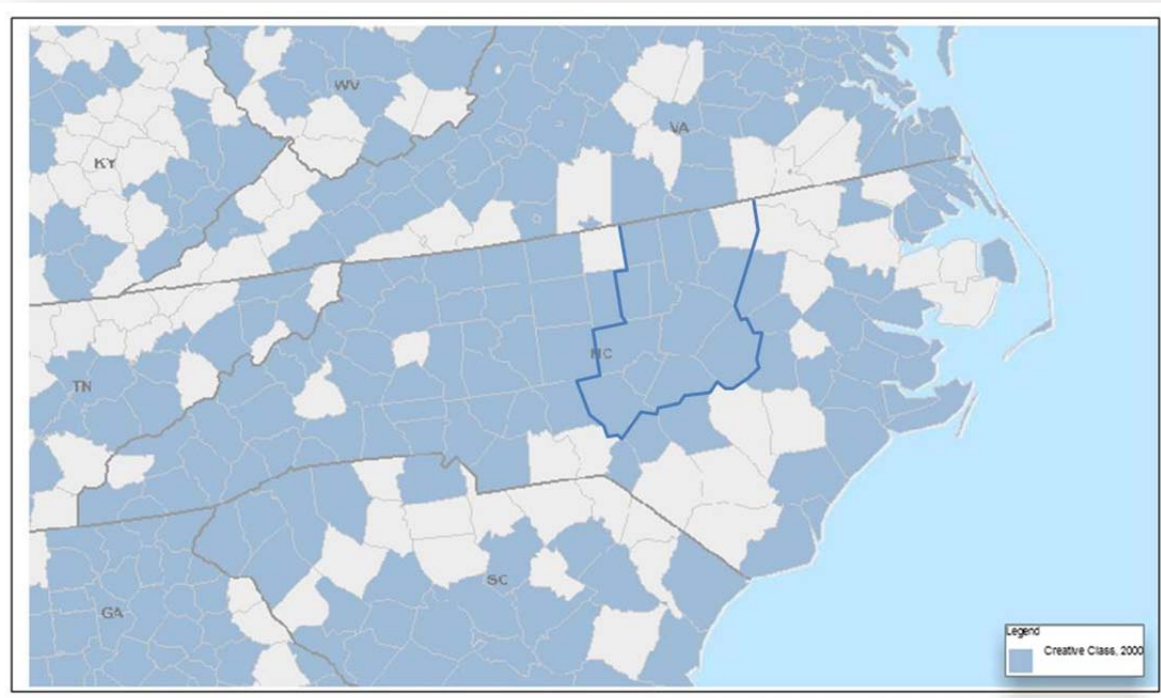


**Figure 1-7: Percent Change in Employment 2008-2009**

(Source: *Atlas of Rural and Small Town America*, USDA ERS, <http://www.ers.usda.gov/data/ruralatlas/atlas.htm#map>)

Figure 1-8 shows the creative class for 2000. The creative class is defined as the “classification of counties by number of people in creative occupations, where 1 = creative class county and 0 = all other counties. A creative class county falls in the top quartile of counties ranked by percent of employed persons 16 years old or older in occupations that involve “thinking creatively.” This skill element is defined as developing, designing, or creating new applications, ideas, relationships, systems, or products, including artistic contributions.”<sup>5</sup> Of special note is that only Warren County falls outside of the creative class distinction. All other counties in the region are considered as creative class counties—this aligns with the RTRP goal of fostering a culture of knowledge and innovation.

<sup>5</sup> Atlas of rural and Small Town America, USDA ERS, <http://www.ers.usda.gov/data/ruralatlas/documentation.htm#creative>



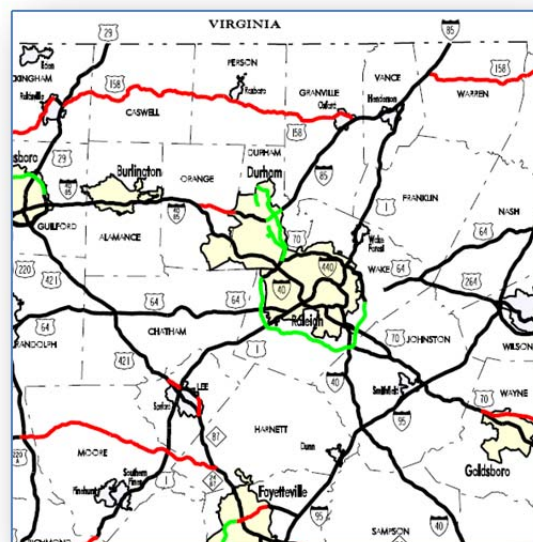
**Figure 1-8: Creative Class 2000**

(Source: *Atlas of Rural and Small Town America*, USDA ERS, <http://www.ers.usda.gov/data/ruralatlas/atlas.htm#map>)

### 1.1.1 Transportation Improvement Program (TIP)

The region has several transportation projects in the current NCDOT TIP. The current projects having a significant impact on business and personal travel within and through the area include:

- Western Wake Freeway under construction
- Southern and Eastern Wake Freeway programmed in TIP
- Widen I-40 from I-440 to NC 42 programmed in TIP
- Widen I-40 from I-85 to NC 147 programmed in TIP
- Widen I-440 from Wade Avenue to Walnut Street programmed in TIP
- Widen I-85 from Hillsborough to NC 147 programmed in TIP
- East End Connector From NC 147 to North of NC 98 programmed in TIP



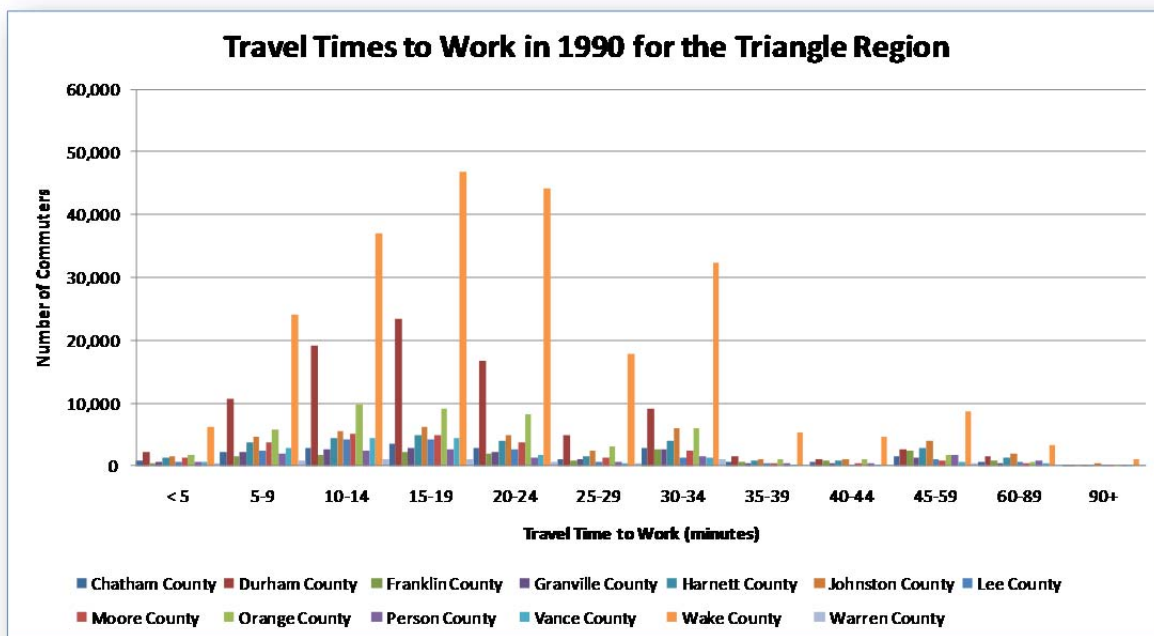


These projects will reduce travel times for both commuters and business users, including truckers, desiring to move within and through the area with minimal congestion. Most goods are shipped by truck within this region, and 31% of workers commute to their jobs outside of the county they live in. Traffic volumes are very large in the central part of the region, and highway locations experiencing capacity constraints resulting in bottlenecks will likely be important issues now and into the future. Construction of additional travel lanes on existing freeways and complete new freeways will provide options for travelers and relieve congestion in the short term.

### 1.1.2 Regional Travel Times

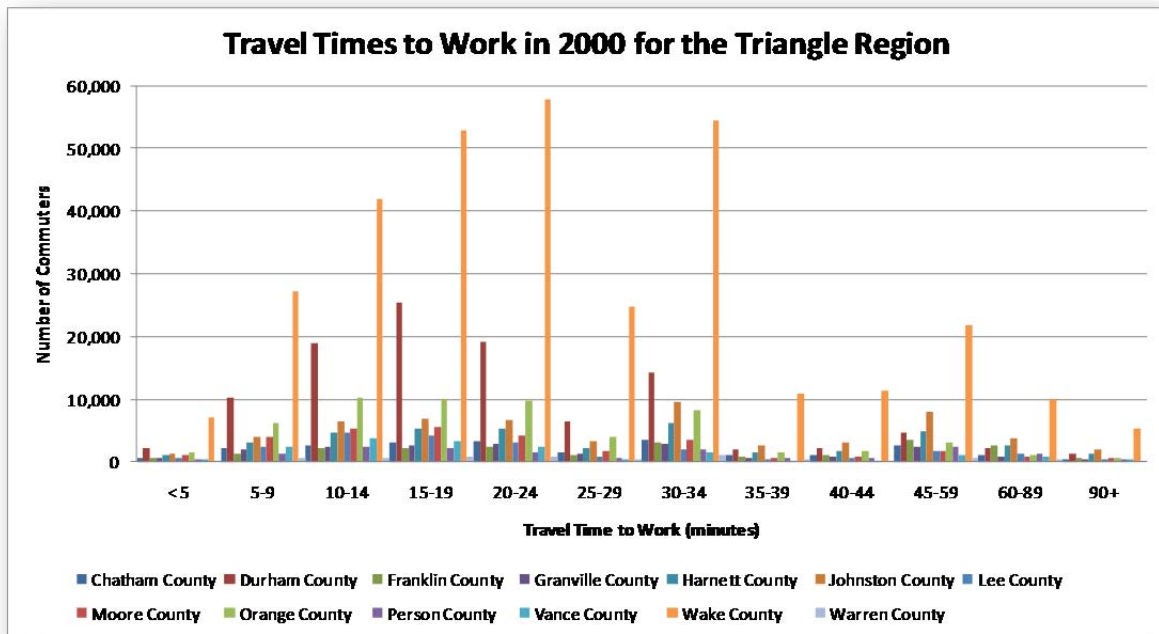
Work commute travel times based on Census data were available in the EDIS database. The data is binned in 5-minute increments from less than 5 minutes to 45 minutes, with three additional larger bins for extensive travel times to/from a county. The travel times of workers from each of the 13 counties to their work sites have been plotted as histograms: Figure 1-9 is for the 1990 Census data and Figure 1-10 is for the 2000 Census data. The average travel times for each county are listed in Table 1-6.

The results show that average travel times increased for all Triangle Region counties from 1990 to 2000. Although most of the average travel times seem quite small and the increases moderate, a closer review of the histograms shows that there were substantial increases in total daily person-hours accrued. For instance, the number of Wake County commuters who traveled at least 45 minutes to work increased by approximately 20,000 people over the 10 years, equating to *at least* an additional 100,000 person-minutes of travel time per workday.



**Figure 1-9: Travel Times to Work in 1990 from Each County**

(Source: EDIS)



**Figure 1-10: Travel Times to Work in 2000 from Each County**  
(Source: EDIS)

**Table 1-6: Worker Travel Time for the Region<sup>6</sup>**

NC County	Avg Travel Time to Work (minutes)		
	Yr 1990	Yr 2000	Percent Change
Chatham	22	27	23%
Durham	18	21	17%
Franklin	27	33	22%
Granville	21	27	29%
Harnett	23	29	26%
Johnston	24	31	29%
Lee	20	24	20%
Moore	18	23	28%
Orange	19	22	16%
Person	24	30	25%
Vance	17	24	41%
Wake	20	25	25%
Warren	21	30	43%

(Source: EDIS)

<sup>6</sup> <https://edis.commerce.state.nc.us/SASPublicStoredProcess/do>

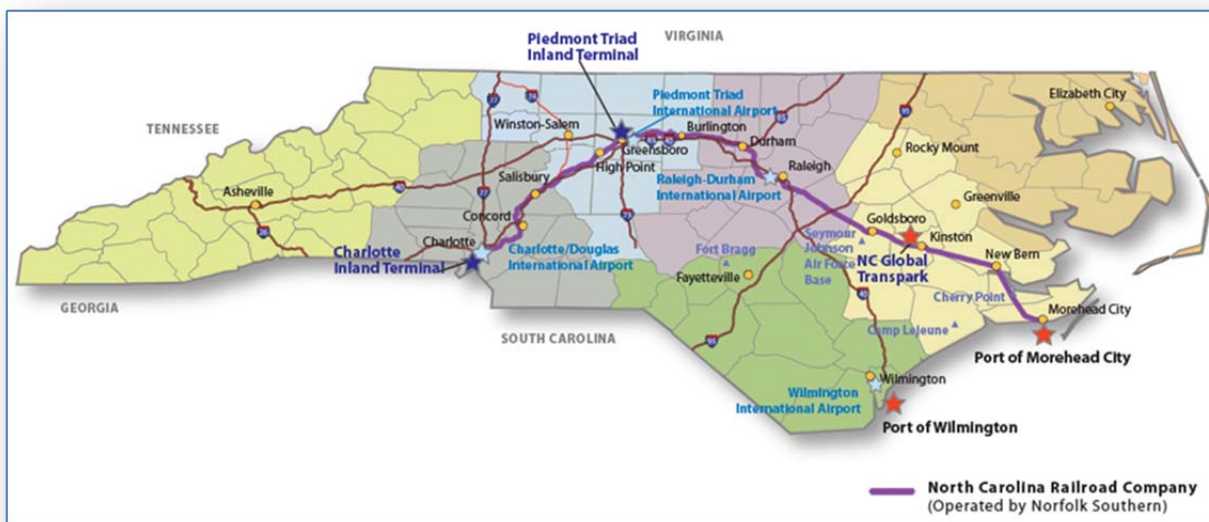
### 1.1.1 Rail Facilities and Services

North Carolina is served by a host of railroad companies with a mix of rail facilities. Freight is accommodated by the Class 1 railroads hauling across the country with the short lines hauling shipments locally. North Carolina is unique among many states in that a large section of track is owned by the North Carolina Railroad Company (NCRR). Within the Research Triangle Region, freight movements are supported by two Class I railroads and four short line railroads. Track also accommodates passenger service both within and through the region.

#### 1.1.1.1 North Carolina Railroad Company (<http://www.ncrr.com/>)

The North Carolina Railroad Company (NCRR) is a private railroad company founded in 1849 whose stock is now owned by the State of North Carolina. The NCRR owns 317 miles of track with a 200 ft wide rail corridor from the Port of Morehead City to Charlotte along the piedmont crescent (see Figure 1-11). The NCRR was the primary means of moving people and goods along this corridor from town to town as goods were sold and traded, along with import and export products going through port stops along the coast. As the state grew in population and services, so too did the towns along the crescent corridor, which now total almost half the population and available jobs in the state.

Today, both freight and passenger trains move along NCRR rail lines daily, hauling import and export goods along with commuters and rail passengers traveling across and through the state. These services are discussed in more detail in the sections that follow.



**Figure 1-11: North Carolina Railroad System**

(Source: <http://www.ncrr.com/corridor-map/index.html> )

### 1.1.1.2 Freight Rail Services


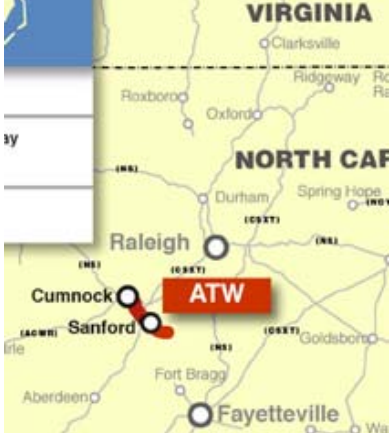

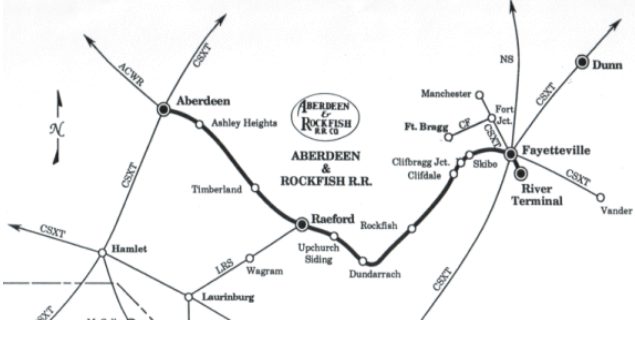


Norfolk Southern (NS) and CSX are the two Class I railroads supporting major freight hauling for the region. Although the predominant hauling for these companies is through North Carolina, NS serves the Port of Morehead City and CSX serves the Port of Wilmington. Through an exclusive trackage rights agreement with NCRR, NS operates about 70 freight trains daily on the NCRR lines, with the segment from Charlotte to Greensboro part of the NS mainline.



There are four short lines that cover the Research Triangle Region of North Carolina: 1) Atlantic & Western Railway Company, 2) Aberdeen & Rockfish Railroad Company, 3) Aberdeen Carolina & Western Railway Company, and 4) Carolina Coastal Railway Company. Some specific details on each company's operations are provided in Table 1-7.

Commodity flows were not modeled as part of this study. However, goods and industries served by these shortlines show a strong relationship with forestry (pulp and paper products), agriculture (fertilizer, chemicals, food and feed products, grain, soybeans), electricity (coal), construction (stone, brick, cement, aggregate), and manufacturing (plastics, steel, bauxite).



Table 1-7: Shortlines in the Research Triangle Region

Basic Information	Map	Quantitative Data
<p></p> <p>Symbol: Name: Atlantic &amp; Western Railway Company Website: <a href="http://www.gwrr.com">www.gwrr.com</a> History: Incorporated in 1896. Property of Rail Management and Consulting Corp.; acquired by Genesee &amp; Wyoming Inc. in 2005. Location: Sanford, NC. Connects to both NS and CSX.</p>		<p>Track Miles: 11 Employees: 3 Equipment: 2 locomotives and 3,000 gondolas, box cars, and covered hoppers Carloads/year: 1,000 Industries Served: 9 - aggregates, brick and cement, food and feed products, steel and scrap.</p>
<p></p> <p>Symbol: Name: Aberdeen &amp; Rockfish Railroad Company Website: History: Incorporated in 1892. Still owned by family of founder John Blue. Location: Connects Aberdeen, NC and Fayetteville, NC. It serves approximately four transload facilities. It serves Hoke, Moore, and Cumberland counties. Additional Information: The A&amp;R website actively markets itself and industrial sites that are available and are served by it (<a href="http://www.aberdeen-rockfish.com/html/industrial_sites.html">http://www.aberdeen-rockfish.com/html/industrial_sites.html</a>).</p>		<p>Track Miles: 47 Employees: 24 Equipment: Carloads: 3,000/yr; 200,000 tons Industries Served: 12</p>
<p></p> <p>Symbol: Name: Aberdeen Carolina &amp; Western Railway Company Website: <a href="http://www.acwr.com/">http://www.acwr.com/</a> History: Incorporated in 1987. Location: Serves Cabarrus, Chatham, Mecklenburg, Montgomery, Moore, and Stanly counties. Connects to the CSX, NS, Aberdeen &amp; Rockfish, and Winston-Salem Southbound rail lines. Additional Information: The ACWR website actively markets itself and industrial sites that are available and are served by it (<a href="http://www.acwr.com/rail-industrial-sites/">http://www.acwr.com/rail-industrial-sites/</a>).</p>		<p>Track Miles: 160 Employees: Equipment: 20 locomotives Carloads: Industries Served: 18 - lumber and forest products, grain and agricultural products, plastics, building materials, propane gas, and solite rock products.</p>

<p>  </p> <p>                     Symbol:                      Name: Carolina Coastal Railway Company                      Website: <a href="http://www.mlrail.com/CLNA.htm">http://www.mlrail.com/CLNA.htm</a>                      History: 1989                      Location: Wilson, NC for operations                 </p>		<p>                         Track Miles: 142                          Employees:                          Equipment:                          Carloads:                          Industries Served: 40 – fertilizers, grains, ties, lumber, paper, pulp, chemicals, corn starch, bauxite, LP gas, meal, pulpboard, shingles, wire, steel, coal, ethanol, woodchips, stone, grass seed, plastic, soybeans.                     </p>
---	--	--

Sources:

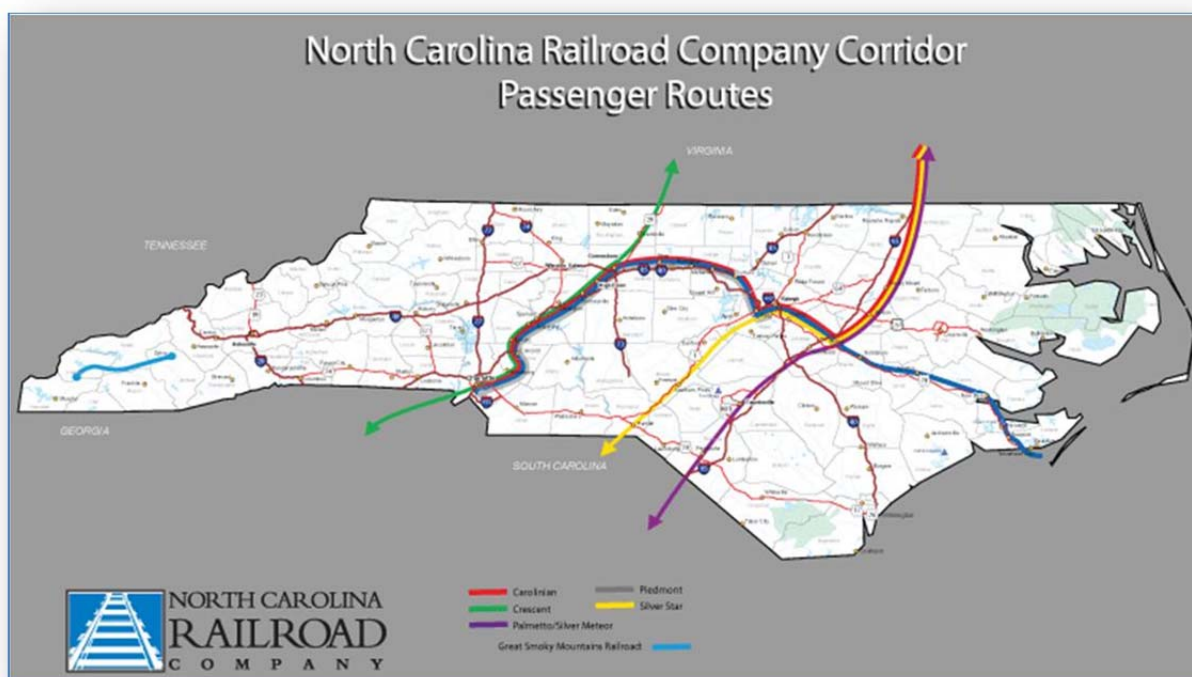
A&W: [http://www.ncrailways.org/index.php?option=com\\_content&view=article&id=4&Itemid=32](http://www.ncrailways.org/index.php?option=com_content&view=article&id=4&Itemid=32)  
[http://www.gwrr.com/operations/railroads/north\\_america/atlantic\\_western\\_railroad](http://www.gwrr.com/operations/railroads/north_america/atlantic_western_railroad)

Article on short line funding:

<http://www.progressiverailroading.com/news/article/North-Carolina-transportation-board-issues-grants-to-nine-short-lines--26459>

### 1.1.1.3 Passenger Rail Services

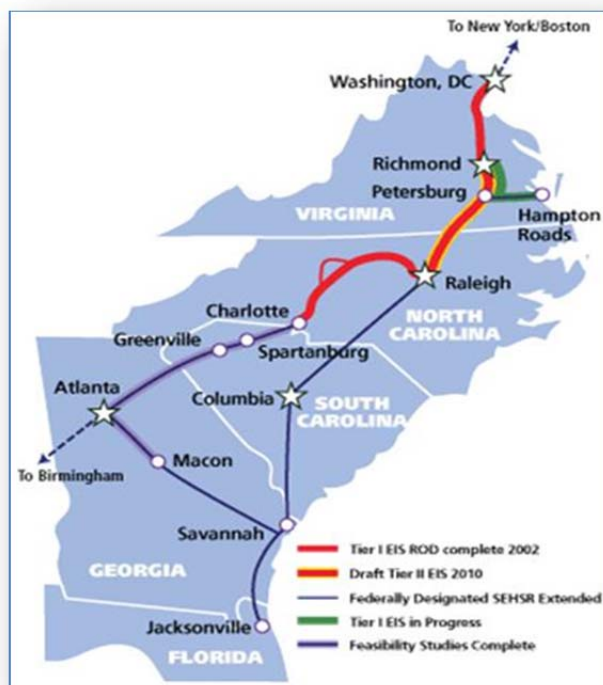
Figure 1-12 shows the passenger rail service routes in the state, with the NCCR rail line highlighted in medium blue. Passenger rail service focuses on three general corridors: 1) Charlotte to Raleigh to Smithfield and then north to Washington, D.C., 2) north-south travel along the Charlotte – Greensboro I-85 corridor, and 3) north-south travel along the I-95 corridor. There is an additional north-south service provided by the Silver Star run (yellow) that is similar to the Carolinian (red) but runs southwest of Raleigh along US 1. Almost 700,000 passengers boarded trains in NC on these routes during 2009.



**Figure 1-12: Passenger Rail Service on the NCCR System**

(Source: <http://www.ncrr.com/ncrr-passenger-map.html> )

The Southeast High Speed Rail (SEHSR) corridor is an ambitious effort to provide significantly improved passenger rail service from Charlotte, NC to Washington, D.C. Figure 1-13 shows the corridor and anticipated timeline for improvements pending federal funding. Charlotte is the largest city between D.C. and Atlanta and is the second largest financial center in the United States after New York City. The plan is to upgrade existing track and build new parallel track enabling passenger trains to travel at speeds between 90 and 110 mph. Significant travel time reductions at these speeds will provide options for travelers making trips along these corridors. At the same time, having parallel track for passenger rail will free up space on current track for additional freight rail movements. Start-up funding of \$545M was authorized in early 2010 for detailed design and enhancements along the Charlotte to Greensboro corridor.



**Figure 1-13: Southeast High Speed Rail Corridor**

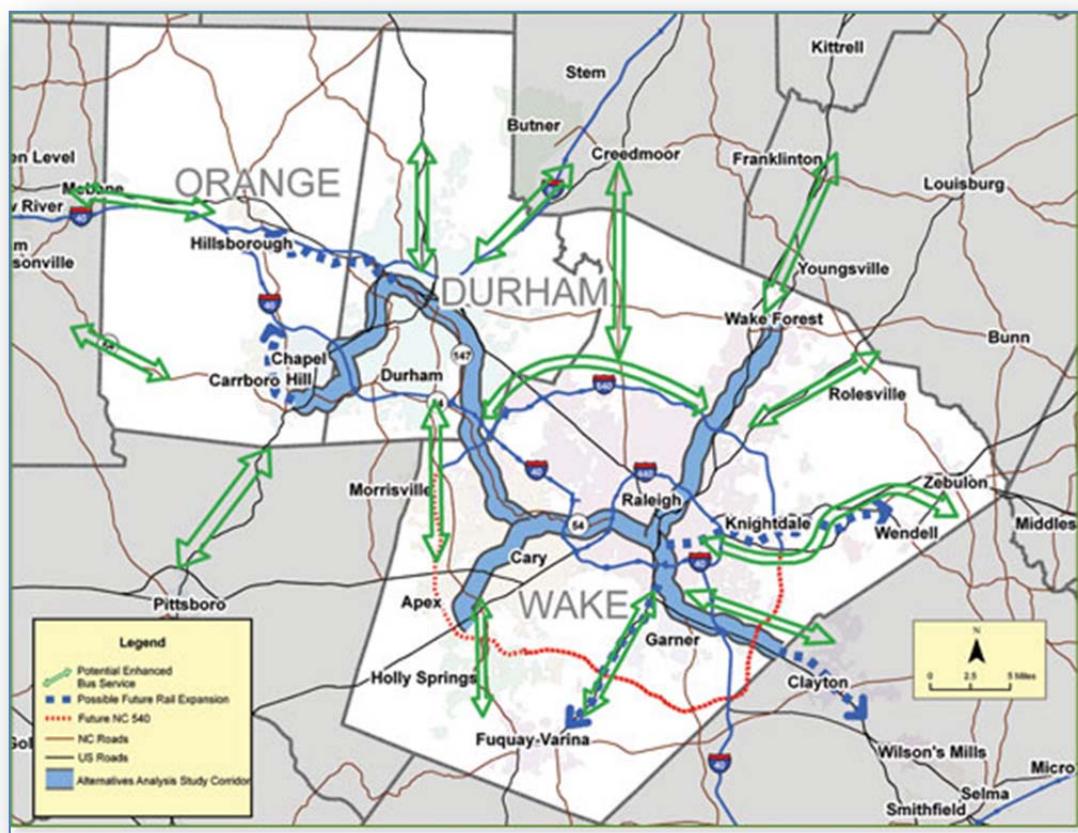
(Source: <http://www.sehsr.org/>)

Within the Triangle Region, Triangle Transit provides bus service for commuters traveling between Raleigh, Durham, and Chapel Hill. With gas prices approaching \$4 per gallon, ridership for March 2011 set a new all-time record of 124,777. This is up 21% from March 2010 ridership. Certainly these riders are helping ease some congestion along the region's major highway routes.

In addition to current services, there have been several initiatives in the last several years that have culminated in studies of the region's major highway corridors for potential bus rapid transit (BRT) services and/or light rail transit (LRT) services. Figure 1-14 shows the major corridors in blue highlight that were evaluated along with potential increased feeder bus service to station locations. The public comment period for the corridor options ended in late April 2011. Planning and further evaluation will continue on these options as both will require capital investment and support throughout the region.

Having a BRT and/or LRT system for the region would provide an alternative transportation service for commuters using the region's major highway routes every day. More efficient travel means less congestion and pollution in the area, enhancing everyone's travel throughout the day. A decrease in congestion also means reduced travel time for truck shipments and improved prediction of delivery times, vital components in our just-in-time shipping culture.





**Figure 1-14: Future Bus and Rail Corridor Study Map**

(Source: <http://www.ourtransitfuture.com/>)

### 1.1.2 Coordination With Other Regions

The Research Triangle Region supports, and in turn receives support from, adjacent economic development regions. Goods move to and from the region to destinations in other regions for agriculture products, materials for manufacturing, building materials, and export of finished products or raw materials. For example, jet engine components are made and shipped from Wilmington to the GE Engine Plant in Durham, assembled, and then completed engines without the external housing are shipped back to Wilmington for final assembly, where they are then shipped to aircraft manufacturers like Boeing.

Textile manufacturers in the Burlington area require yarn and fabric to produce finished clothing, bedding, towels, etc., and in turn they ship these products across the country and overseas by truck and rail.

The Smithfield/Selma area provides significant cold storage facilities for chicken, turkey, and pork products ready for export through Wilmington on refrigerated containers. Morehead City

could also accommodate these products if refrigeration was available and berthing bays and cranes could service container ships.

### 1.1.3 Research Triangle Park

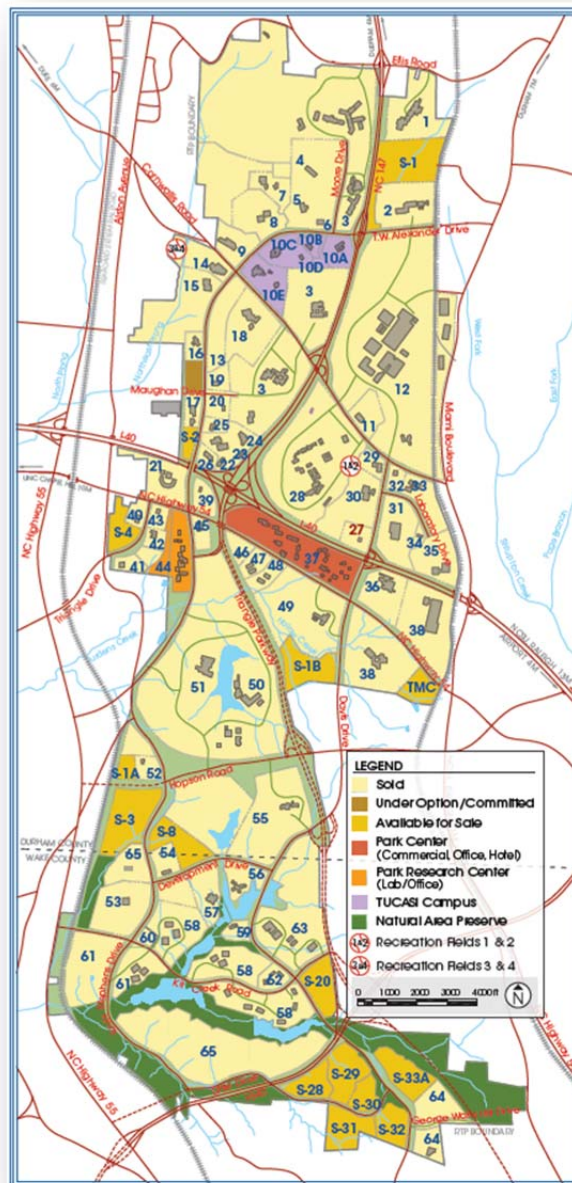
The world-renowned Research Triangle Park, created in 1959, is now a tremendous success story for the region. Over 42,000 people work in the park at more than 170 companies nestled among 7,000-plus acres west of Raleigh Durham International Airport (RDU). An estimated 10,000 contract jobs attract another large population of commuters to the park each day. Within the park, 600 acres on 13 parcels are available for new development. The park itself is an example of a successful logistics village. It is presented here because of its tremendous influence in strategies for future growth within the region.

The Park groups their businesses into the following categories:

- Business and Professional Services (31)
- Environmental Sciences (5)
- Financial & Insurance Activities (3)
- Information Technology (37)
- Life Sciences (54)
- Material Sciences & Engineering (14)
- Retail Amenities & Service Providers (9)
- Scientific Associations, Foundations and Institutes (19)

Many of these categories directly support the clusters of innovation concept currently marketed by the region as discussed in Section 1.2: Goals of the Region.

While RTP continues to attract companies to the region, this creates another problem—which routes will employees use to commute to their job? Commuter-Caused congestion is a major concern for employers in and near RTP and the triangle cities of Raleigh, Cary, Durham, and Chapel Hill.



Key issues identified by the Research Triangle Partnership include the following:

- Moving people and goods in an area lacking one major urban center; instead, people move to and from multiple points in the region.
- Support the manufacturing sector, which employs eight percent of the workforce.
- Build roads to non-urban areas.
- Provide direct global access through RDU airport.
- Asset management must be incorporated as a transportation infrastructure imperative; the focus must be on ensuring effective capacity and reliability.
- Focusing on key business sectors such as advanced medical, agricultural and biotechnology, analytical instrumentation, logistics and distribution, and the already existing vehicle components industry.
- Maintaining environmental quality, and air quality in particular, to enhance and maintain the high quality of life that drives economic growth in the region.
- Continued commitment to infrastructure even in capital scarce times, thus remaining competitive in the global market.

## 1.2 Goals of the Region

The Research Triangle Region is fortunate to have strong support from the business community, local governments, and educational institutions in developing and promoting a niche concept for economic prosperity. The “clusters of innovation” concept is clearly working and is flexible enough to expand and contract as the market(s) change over time. In this regard, the region develops five year action plans. The latest plan<sup>7</sup> is titled “The Shape of Things to Come.” The vision of the region, as stated in the plan, creates a compelling picture of knowledge and innovation at the core of global economic success.

*The Research Triangle Region’s vision is to be a world leader in intellectual capacity, education and innovation to enhance productivity and economic growth and achieve a superior quality of life for all our citizens.*

Each plan targets specific strategies and actions appropriate for market and business health during the life of the plan. Annual status reports and other events then share results of activities and major initiatives undertaken by regional partners during the year in alignment with the plan. The latest status report<sup>8</sup> describes the plan’s three major strategies and specific actions for a five-year “Action Plan: 2009-2014” as follows:

<sup>7</sup> “The Shape of Things to Come: The Economic Development Strategy for the Research Triangle Region, North Carolina.” Research Triangle Regional Partnership, July 2009.

<sup>8</sup> “State of the Research Triangle Region: An in-depth look at the region’s economic health and competitive position.” Research Triangle Regional Partnership and Triangle Community Foundation, May 2010.

### STRATEGY 1: BUSINESS GROWTH

- Attract, grow and support targeted industry clusters in all 13 counties
  1. Develop and implement a marketing plan to attract new businesses in targeted clusters.
  2. Develop and implement an expanded brand recognition campaign that supports recruitment of targeted companies.
  3. Design methods and leverage institutional partners to support entrepreneurs, startups and existing businesses in targeted clusters and industries.
  4. Develop community college and university partnerships to ensure curricular support for targeted clusters.
  5. Collaborate with the BRAC Regional Task Force to leverage military expansion at Fort Bragg to increase business investment and jobs in the region.
  6. Promote Triangle North as a key strategy to extend regional prosperity into rural counties.
  7. Tightly align regional and county-level economic development strategies and provide services and programs for economic development partners, including support for key existing businesses, strategic planning, marketing and research assistance.

### STRATEGY 2: PRODUCT DEVELOPMENT

- Preserve and enhance the region's competitive business climate, infrastructure and quality of life
  8. Collaborate with key partners to improve and promote quality PreK-12 education.
  9. Implement Reality Check recommendations to ensure quality growth through three guiding principles: improved transit, vibrant town centers and preserved green space.
  10. Develop federal and state legislative agendas to ensure public policy and investment support the region's competitiveness plan.
  11. Promote transportation improvements that enhance mobility within the region.
  12. Expand air service to destinations that are priorities for regional businesses.

### STRATEGY 3: REGIONAL COLLABORATION

- Engage regional leaders and partner organizations in ensuring our economic competitiveness (four actions)
  13. Develop a communications plan to promote engagement and support for *The Shape of Things to Come* plan.
  14. Convene business and institutional partners quarterly to report on progress and results of implementing *The Shape of Things to Come* and identify barriers and opportunities that should be addressed.
  15. Host an annual State of the Research Triangle Region event to benchmark the economic health and competitive position of the region and update the community on progress and results of *The Shape of Things to Come* plan.



16. Host a CEO leadership training program to inform new regional leaders about issues and opportunities related to global competitiveness and encourage their engagement.

In addition to the strategies and actions listed above, the report describes some of the supporting initiatives taken during 2009 in the following areas:

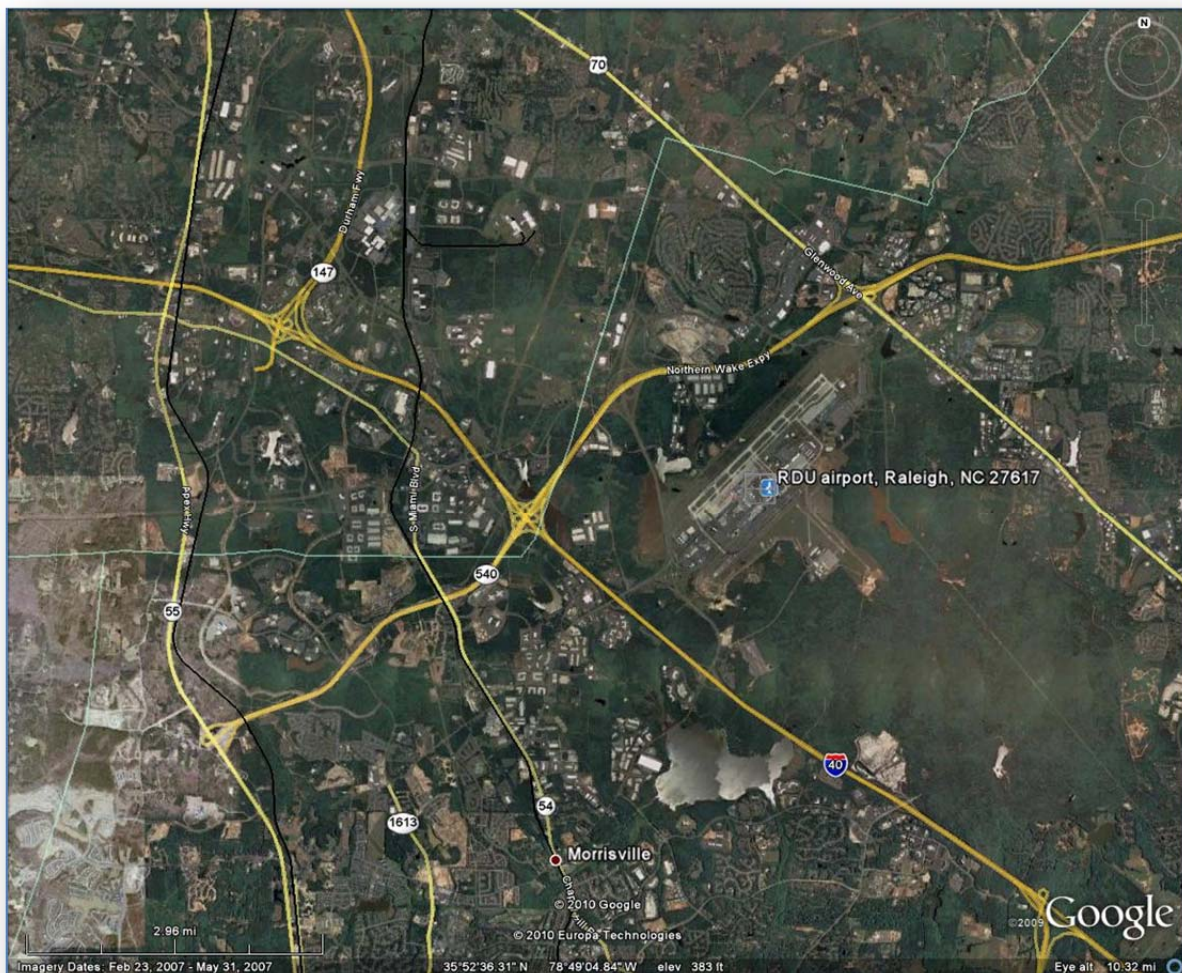
- **Promoting Business Growth** – expand the region’s life sciences and technology clusters as well as key emerging clusters: clean/green technologies, interactive gaming and e-learning, and defense technologies.
- **Ensuring Quality Growth** – business and community leaders have endorsed three guiding principles—improved transit, vibrant centers and green space—developed during the 2009 Reality Check visioning exercise.
- **Linking PreK-12 Education with Business Growth** – develop recommendations on how the state’s early-college high schools can align themselves more closely with the economic development needs of their region.
- **Improving Air Service** – recognize that the terminal expansion at RDU and associated increases in flight destinations not only benefits the region’s business customers but can attract major events like the National Hockey League All-star Game played in the RBC Center in Raleigh on January 30, 2011.
- **Promoting Rural Development** – continue promoting Triangle North for the four northern rural counties and collaborating with the Base Realignment and Closure (BRAC) Regional Task Force to leverage the southern counties’ assets in support of the growth at Fort Bragg and defense-related business growth.

It is clear that the Research Triangle Regional Partnership has actively engaged the business community, local governments, and educational institutions in establishing and marketing the region as being centered on innovation. Companies that are innovative will survive and grow, thereby creating sustained job growth. Strategies and actions are aligned to support job growth in key targeted clusters not only for the core counties of Wake, Durham and Orange, but also for the more rural surrounding counties.

## 2 Potential Logistics Villages

### 2.1 **Logistics Village 1 – Raleigh-Durham International Airport Area**

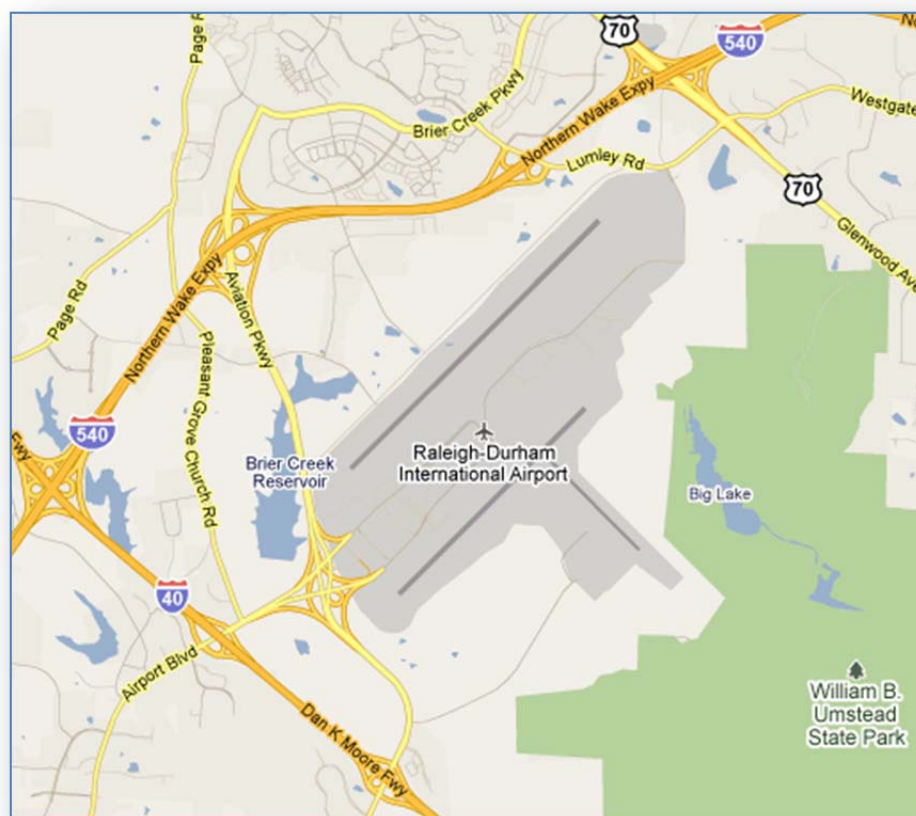
The region's major commercial airport, Raleigh Durham International (RDU) provides significant support for business and leisure travel with easy access to Raleigh, Cary, Durham, Chapel Hill, Research Triangle Park, many other municipalities, businesses and residential areas within 45 minutes to an hour drive. Figure 2-1 below shows an aerial photographic view of RDU and the surrounding highway network.



**Figure 2-1: Aerial View of Logistics Village 1 Site**  
(Source: GoogleEarth, Inc.)

Situated on 5,000 acres, the airport property is located between Raleigh (to the southeast) and Durham (to the northwest) and adjacent to Research Triangle Park (to the west). The airport is constrained on all sides by I-40 (south), I-540 (west), US70 (north) and William B. Umstead State Park (east). Significant expansion of the airport outside of its current property boundaries is not very likely.

Four interchanges provide easy access into and out of the airport, with two interchanges each located along the two adjacent interstates (I-40 and I-540). US70 also provides signalized intersection access into the airport at Lumley Road. A closer look at access is provided in Figure 2-2.



**Figure 2-2: Highway Network and State Park Surrounding RDU Airport**

(Source: GoogleEarth, Inc.)

The airport has two parallel runways of 10,000' and 7,500' for commercial operations and one cross-runway of 3,500' for general aviation operations. There is room for a third parallel runway within the existing property should capacity of the existing parallel runways become an issue.

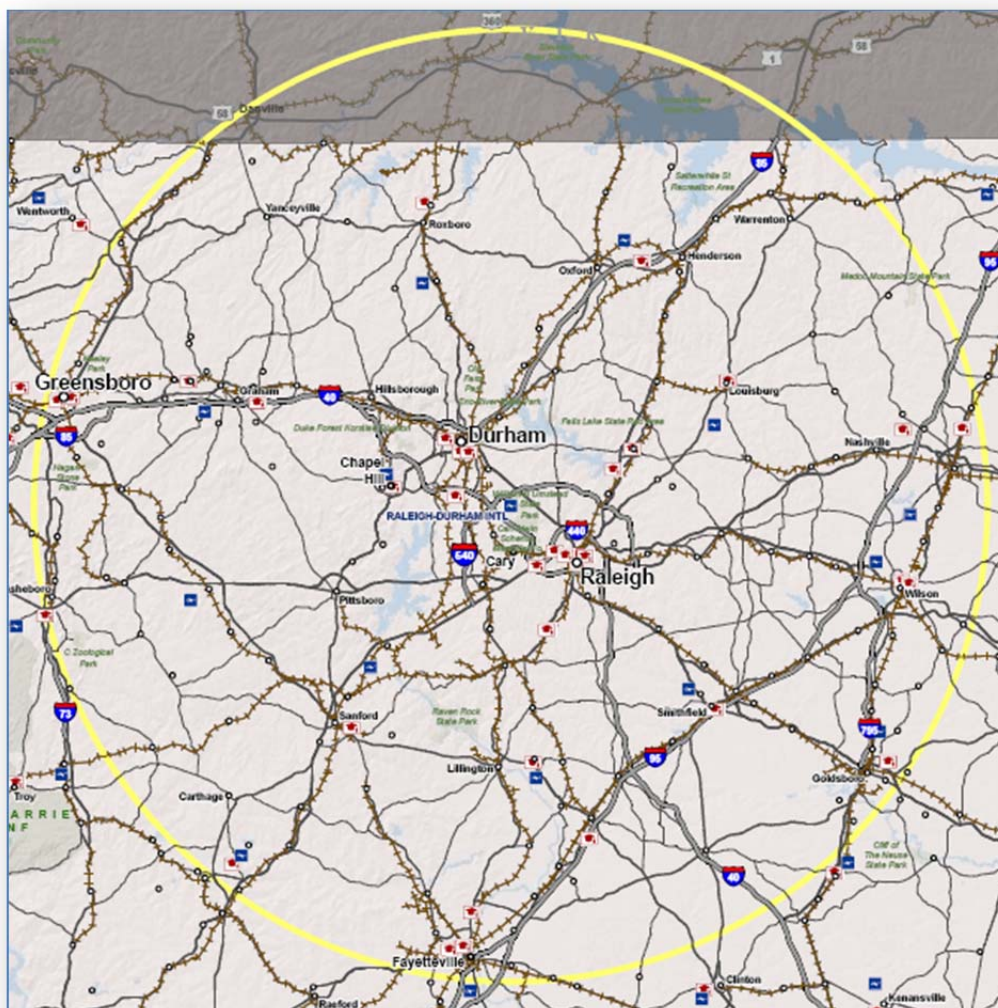
Passenger enplanements were 8.97 million in 2009, ranking it second in the state behind Charlotte-Douglas International. The economic recession plays a significant role in both



business and leisure travel through the airport. As the economy recovers and money is available for travel, passenger traffic will increase.

Supporting businesses on airport property desiring to move materials or goods by rail is not currently possible. Rail lines exist to the southwest, across I-40 and NC54 and are currently operated by Norfolk Southern (NS). Another rail line also operated by NS is across I-540 to the west. It does not appear feasible to bring rail service to the airport at this time, nor is the airport looking to add rail capability for current or future tenants.

Of special note is that RDU has three official reliever airports in the region: 1) Triangle North Executive Airport (LHZ) in Franklin County, 2) Johnston County Airport (JNX), and 3) Raleigh Executive Jetport (TTA) at Sanford-Lee County. Each of these airports is part of the site analyses documented for logistics villages in those counties.



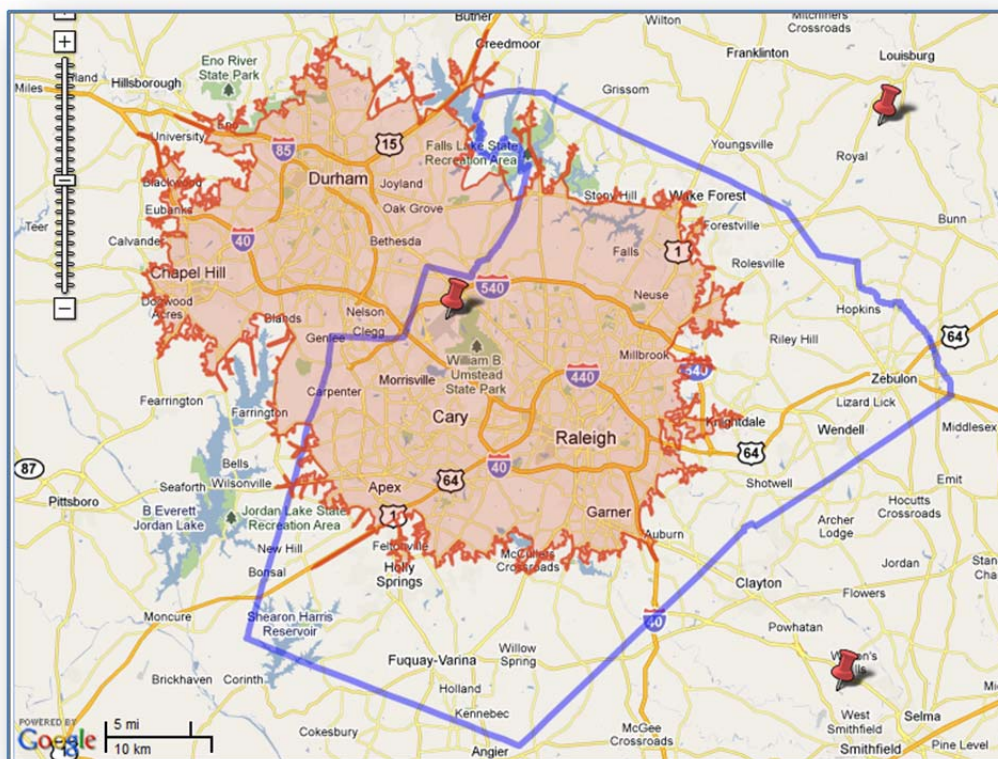
**Figure 2-3: 60-Mile Radius Centered on RDU Airport**

(Source: ITRE GIS Group)

Figure 2-3 shows the 60-mile radius around RDU airport. This circle extends west to Greensboro, east to Goldsboro, north past Henderson, and south to Fayetteville. Based on the year 2000 travel time histogram in Figure 1-10, approximately 37,000 people drive 45 minutes to more than 90 minutes to work from their Wake County dwellings. Therefore, employees working at RDU (i.e. the reverse of this commute) certainly come from areas within this radius, and perhaps beyond. The red cap and gown symbols indicate universities, colleges, and community colleges within the map boundaries.

This radius also represents the outer boundary for companies desiring to locate within a 45-60 minute travel time to RDU, recognizing that both Fayetteville and Greensboro have scheduled air carrier service at their major airports. This circle also shows that the three reliever GA airports for RDU (Franklin, Johnston, and Sanford-Lee) are well within 45 minutes travel time to major employment and business hubs in the region.

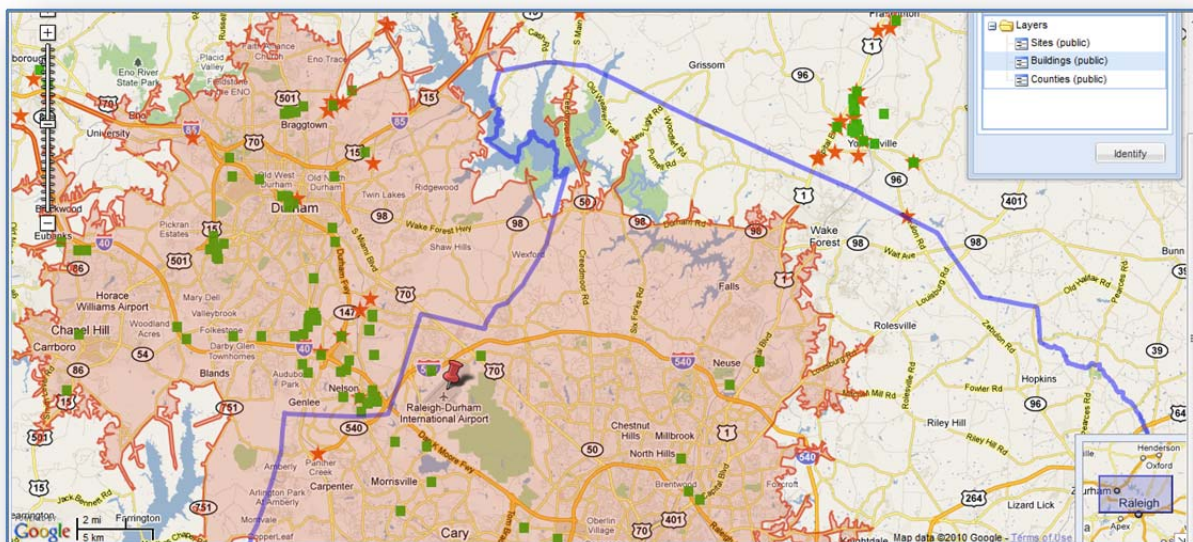
The area within a 30-minute drive time to RDU is shown in Figure 2-4. For consistency, the 30-minute drive time was chosen for all logistics sites to represent the outer boundaries of potential daily commuters to a company located within the logistics village site. The highway connectivity with I-40, I-540, I-85, US1, US64, and US70 clearly allows individuals to live where they choose and still have a reasonable commute to a job at this site.



**Figure 2-4: 30-Minute Drive Time Within RDU Airport**  
(Source: EDIS Database)



Figure 2-5 shows the available buildings and sites within close proximity to RDU. While these facilities and land options are available, none of them are at the large scale being thought of as a logistics village. Certainly the sites within RTP become part of that logistics village, but the focus there is for people movement and not goods movement.



**Figure 2-5: Available Sites (★) and Buildings (■) Near RDU Airport**  
(Source: EDIS Database)

### 2.1.1 Strengths

A major commercial airport is a significant economic contributor to the region. One recent study estimated the impact from operations and business use of RDU to be over \$2.7 billion supporting over 18,000 jobs<sup>9</sup>. Once population densities reach a level where a commercial airport is viable, new businesses look for sites within reasonable proximity to a commercial airport. A rule of thumb heard in discussions with county economic development staff is proximity within 45 minutes travel time of a commercial airport. Business travelers are looking for access to an airport that can take them anywhere they need to be on any given day. General aviation airports can serve many local and regional needs for business travelers, but international flights and longer domestic flights are mostly serviced through commercial airports.

Having four interchanges providing access into airport property is clearly a strength of the site. Interstate 540 (I-540) was re-aligned to accommodate a future parallel runway, and an interchange at Lumley Road was constructed to provide access into the northeast corner of the property for future business development. There are land parcels throughout the airport property available for the right type of business. RDU is very selective on which businesses they want on

<sup>9</sup> “2006 Economic Impact of Airports in North Carolina.” Institute for Transportation Research and Education, North Carolina State University, 2006.

their property, recognizing that their foremost goal is providing exceptional service to all of their customers.

The RDU property is served by public water and sewer, with the Town of Cary as the primary provider and the City of Raleigh as the backup. High speed telecommunications is readily available, along with electricity and natural gas. Virtually any type of business could move into the area with available access to all utility services.

Freight shipping is a component of total operations at a commercial airport. During 2009, airplanes carried 92,459 tons of freight, with BAX Global, DHL Worldwide Express, Federal Express, and United Parcel Service being the main carriers and shippers. Thus, the airport could serve as a major freight shipper should a large distribution facility be located nearby or on airport property. The FedEx distribution center at Piedmont Triad International is an example of a great partnership between the airport and a major air freight operation. Interestingly, FedEx first approached RDU with their proposal, but RDU decided that they wanted to serve other types of business operations and travel versus a major freight operation.

Both RDU and RTP are located very close to Foreign Trade Zone #93 (FTZ). Companies desiring to utilize the economic duty tax advantages of this FTZ will have access to rail, air, and highway facilities for easy shipment of raw materials or goods. According to the Triangle J Council of Governments web site<sup>10</sup>, the FTZ is defined as follows:

A Foreign Trade Zone, or “**FTZ**”, is a neutral, secured area in or near a port of entry that is legally outside of US Customs & Border Protection Territory. Domestic and foreign merchandise may enter this enclave without a formal Customs entry. Goods entering the Zone may be stored, sorted, manipulated, used in manufacturing, inspected, combined with other domestic or foreign materials, displayed for sale, and re-exported without payment of duty. If the final product is exported from the US, no duty or excise tax is levied. If the final product is imported into the US, customs duty and excise taxes are due only at the time of transfer from the foreign trade zone into US commerce. Spoiled, damaged or waste goods may be disposed of or re-exported without payment of duty.

Thus, the FTZ is a secured duty import and export site established to spur economic development for those companies which can take advantage of this arrangement.

### 2.1.2 Weaknesses

Rail access is a major challenge for the airport should any businesses need rail service to ship materials or goods. However, RDU does not see a need to secure rail service for any current or future tenants.

While airport property is constrained on all sides, RDU has diligently worked to secure enough land for a third parallel runway. Expansion beyond the third runway is not likely, plus construction of the third runway is many years away.

<sup>10</sup> <http://www.tjcog.dst.nc.us/econdev/ftz.shtml>

### 2.1.3 Needs

RDU is certainly in a prime location, with abundant interchange access to serve current and future traffic volumes. One aspect that could be addressed is establishing convenient access to Research Triangle Park. Yet, RTP does not have a central core to connect to from RDU. Discussions are taking place on creating some kind of bus circulating loop within RTP. Should this be constructed, RDU envisions a dedicated bus connector road from the airport to a transfer station within the park. This would provide an option for business travelers within RTP to get to and from RDU without the need to park at the airport or rent a car or use a taxi from the airport.

## 2.2 ***Logistics Village 2 – Triangle North Properties***

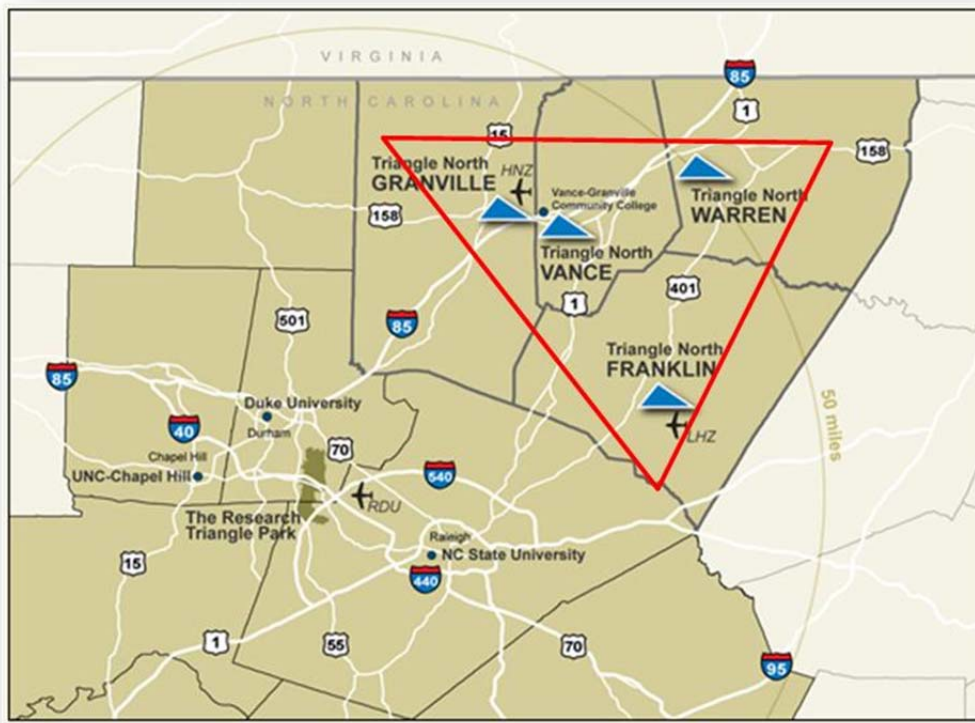
In researching the materials available from the Research Triangle Regional Partnership website, the team noticed a link to the Triangle North properties website. The Triangle North properties are not one property but four properties, or sites, with one site located in each of the northern counties of Granville, Vance, Warren, and Franklin of the region. The Triangle North properties are included in this study because of their parcel size and the marketing of the sites to serve specific businesses supporting the region’s cluster development strategy.

The Triangle North properties spawned out of a study by the Kenan Institute<sup>11</sup> in 2003 that explored the feasibility of creating a “hub” or cluster of companies supporting the work and business activity in the Research Triangle Park. The study concluded that the concept was feasible and that one hub each in the northern and southern parts of the region could work. The final outcome was four sites identified in the northern counties of the region. Figure 2-6 shows the general location for each of the sites in the four northern counties.

---

<sup>11</sup> “The Feasibility of Mini-Hub Development in the Research Triangle Regional Partnership Region,” Michael Luger, Kenan Institute, The University of North Carolina at Chapel Hill, February 2003.





**Figure 2-6: View of Logistics Village 2 Sites**

(Source: Regional Triangle Regional Partnership)

All of the sites are within a 50-mile radius from Research Triangle Park, which also places them within 60 minutes of travel time to RDU. The three most northern sites are located adjacent or very near to I-85, with the sites in Granville and Vance counties having frontage visibility from I-85. The Granville, Vance and Warren sites all have an interchange access point nearby with I-85. The Vance site is also located across I-85 from Vance-Granville Community College. Businesses located at any of these three sites will have proximity for their employees to receive specialized training developed at the community college for their needs.

Rail service is provided by CSX and is nearby for the Granville and Vance sites (2-3 miles away) and almost within the Warren site ( $\frac{1}{2}$  mile away). Rail service to the Franklin site is 8 miles away through rural residential development and would be challenging to build. Rail access to the other three sites is through rural farm land or wooded terrain and would be easier to build, especially for the Warren site.

It should be mentioned here that the Warren site, at 1,000 acres, is being promoted for logistics, distribution, and manufacturing. Both the theme and size of the site make it stand out among the Triangle North properties for a large logistics village within this study region.

The site in Franklin County is across the access road from the general aviation airport. This site could be very attractive to a company desiring to locate near a GA airport for use of a company

business plane. The Granville and Vance sites are located further away (3 and 5 miles, respectively) from their nearest GA airport at Henderson-Oxford (HNZ), while the Warren site is located 16 miles away from the Henderson-Oxford airport.

All four of the sites are or have been certified ready for development by the NC Department of Commerce. Extensive information is available on the web for site maps, master plan concepts, terrain, flood levels, infrastructure, preliminary environmental assessment, etc. Commitment letters are in place for all utilities, including high speed fiber optic for telecommunications, a major need of innovative companies where information is readily shared and acquired over the internet.

### 2.2.1 Strengths, Weaknesses and Needs

Table 2-1 identifies the major strengths, weaknesses and needs for each of the Triangle North properties. The four sites are in the left column, with some descriptors for strengths, weaknesses, and needs associated with each site in the adjacent columns. In the left column under the site name are the target industries and the Tier designation for that site. A Tier 1 county would provide the most financial incentives for a new company, with decreasing incentives for a Tier 2 county, and the least incentives for a Tier 3 county.

**Table 2-1: Strengths, Weaknesses, and Needs for Triangle North Properties**

	STRENGTHS	WEAKNESSES	NEEDS
<b>GRANVILLE</b> <i>Life science &amp; technology</i> (Tier 2)	<ul style="list-style-type: none"> <li>• Certified 527 ac. site w/ 1 mi. road &amp; utilities in- place</li> <li>• I-85 access &amp; frontage; GA airport 3 mi.; CSX rail 2 mi. (open)</li> </ul>	<ul style="list-style-type: none"> <li>• RDU 40 mi.</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>VANCE</b> <i>Technology &amp; manufacturing</i> (Tier 1)	<ul style="list-style-type: none"> <li>• Certified 422 ac. site</li> <li>• Vance-Granville Community College</li> <li>• I-85 access &amp; frontage; GA airport 5 mi.; CSX rail 3 mi. (open)</li> </ul>	<ul style="list-style-type: none"> <li>• RDU 45 mi.</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
<b>WARREN</b> <i>Logistics, distribution, manufacturing</i> (Tier 1)	<ul style="list-style-type: none"> <li>• Certified 1,000 ac. site</li> <li>• US 1/158 access (I-85 3 mi. away); CSX rail ½ mi. (open)</li> </ul>	<ul style="list-style-type: none"> <li>• GA airport 16 mi. away</li> <li>• RDU 60 mi.</li> </ul>	<ul style="list-style-type: none"> <li>• Rail connection for major logistics/ distribution activity</li> </ul>
<b>FRANKLIN</b> <i>Technology &amp; aviation</i> (Tier 2)	<ul style="list-style-type: none"> <li>• Certified 252 ac. site</li> <li>• US 401 access</li> <li>• Adjacent to GA airport</li> </ul>	<ul style="list-style-type: none"> <li>• CSX rail 8 mi. away</li> </ul>	<ul style="list-style-type: none"> <li>• US 401 to be multilane to I-540</li> </ul>

Certified status does not remain in place forever. Options to purchase land and provide rail access have finite periods, with the Warren site no exception. Negotiations are underway to renew the options in place for the Warren site to rejoin the “certified ready for development” status. The Franklin site is listed as “development-ready,” with Louisburg being the closest town.

Note that each site has a theme suitable for that site and one that fits within the clusters of innovation concept for the region. Also note that aviation is clearly an appropriate theme for the Franklin site, and supports the strong aviation business activities throughout many parts of the state including the Triangle region, such as the GE Engine Plant in Durham.

The Warren site is especially attractive because of its large size, 1,000 acres, and its proximity to rail and a major interstate. Interstate 85, just 3 miles away, enables rapid access to I-95, the East Coast’s major truck commerce freeway. Providing the rail connection onto the site could initiate business development for major logistics or distribution activities with the possibility of intermodal facilities. Access to the site would involve construction of a rail crossing, which would need coordination with the high speed rail corridor from Raleigh to Richmond.

The Warren site is somewhat remote from major population centers and is on the fringe for convenient access to a commercial airport with RDU being about 60 minutes away. Should a distribution center be established at the site, import and export traffic would likely go through the Norfolk ports via I-85 to US 58 in Virginia. (This is likely for import/export shipments from the Granville and Vance sites as well.) Although not as direct, the Warren site could also support import/export movements through Morehead City if that port could accommodate containers on a bigger scale than currently available.

The Franklin site does not have any interstate or freeway access. A major infrastructure improvement for that site would be widening US 401 as a multilane highway toward Raleigh. This would provide improved travel time both into Raleigh and also to I-540 (the outer loop) providing quick access to I-40 for westbound movements. I-540 to US 64 bypass to I-440 and then I-40 eastbound is also possible, with shorter travel once I-540 is completed beyond US 64 bypass to I-40 eastbound. Widening of US 401 is programmed in the 2016-2020 STIP from north of SR 2044 (Ligon Mill Road) to NC 39 in Louisburg, NC. Also programmed is a bypass for Rolesville.

It was announced on October 12, 2010 that the US Department of Commerce Economic Development Administration has awarded a \$1.7M grant to build a 1.3 mile access road directly linking the Franklin business park and airport to US 401. The Kerr-Tar Regional Economic Development Corporation also leveraged \$900K in NCDOT funds for the project.

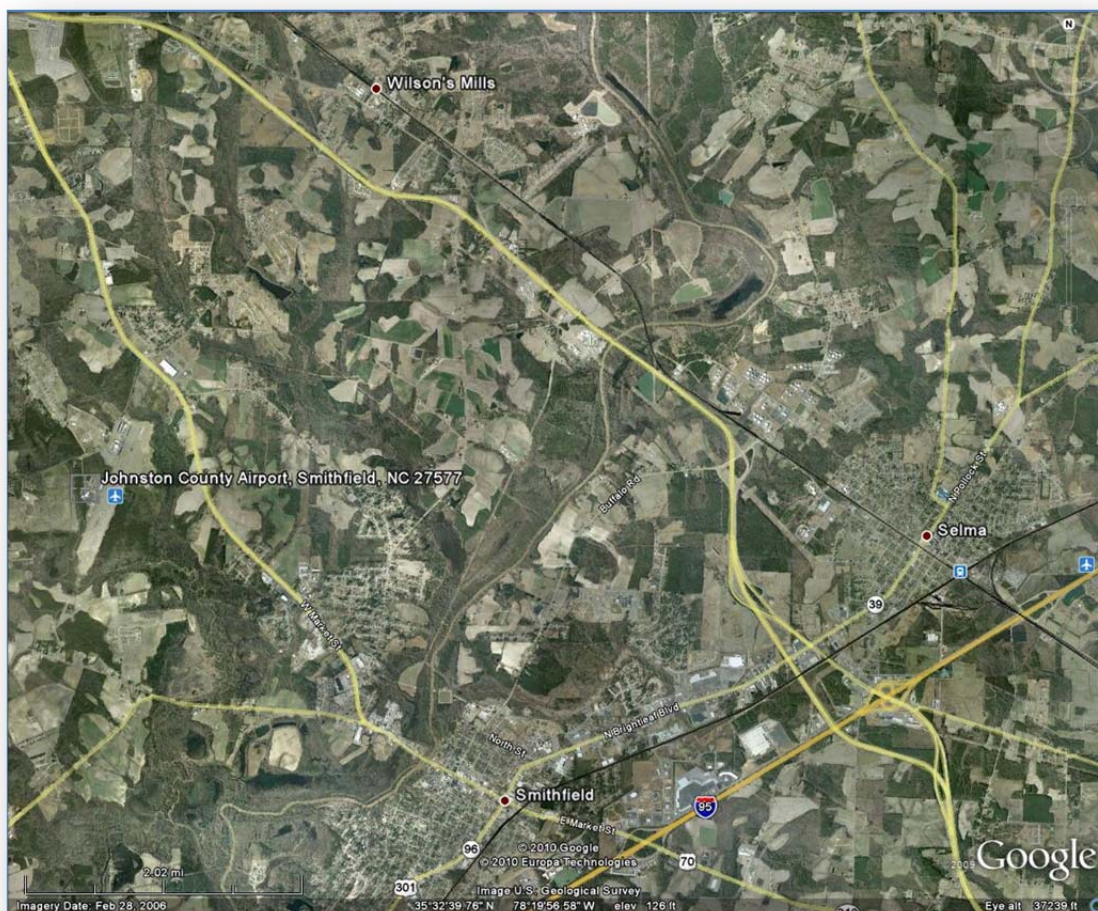
The Franklin site does have a 33,900 SF shell building ready for occupancy, with 3,900 SF for office use and 30,000 SF for manufacturing/warehouse use.

The Granville and Vance sites do not have any major infrastructure needs at this time.



### 2.3 **Logistics Village 3 – Johnston County**

In the southeast of the Triangle Region is Johnston County. It is a predominantly rural county with the most notable towns being Clayton, Selma, and Smithfield. It has an official RDU-reliever airport northwest of Smithfield off of Business US 70, Johnston County Airport (JNX). The airport location in relation to the major towns and highways is seen in Figure 2-7.

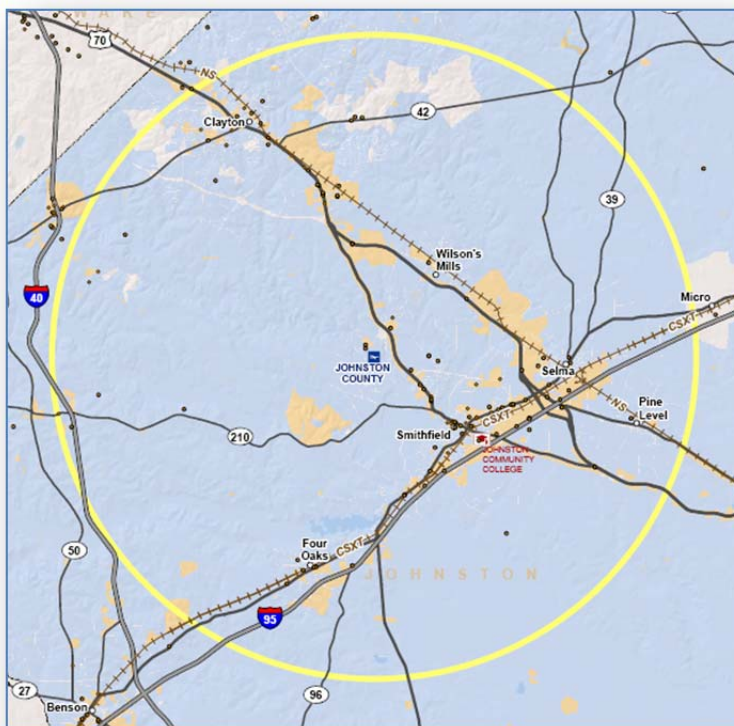


**Figure 2-7: Aerial View of Logistics Village 3 Site**

(Source: GoogleEarth, Inc.)

Johnston County has unique transportation opportunities compared to many other counties. It is a natural transportation hub because of the major highways and rail lines that cross within it. For example as is evident in Figure 2-8, Interstates 40 and 95 cross on the southwest side of the county, providing an excellent opportunity for trucking East/ West along I-40 and North/ South along I-95. Plus, I-95 crosses US 70 further east in Smithfield with direct access to Raleigh. Likewise in rail, CSX crosses NS in Selma. Any company relying on rail for either raw material imports or heavy product exports would certainly have some advantages locating close to this intersection point. Additionally, the CSX line generally parallels I-95 in Johnston County offering potential intermodal opportunities with direct access to major national transportation

facilities whether rail or road. However, a major challenge for companies desiring to locate near some of these significant crossroads is the limited availability of water and sewer. New businesses desire properties that are ready for building construction without having to wait for utilities to be brought in. This is a major challenge for many municipalities because construction costs are significant and payback may not happen for several years.

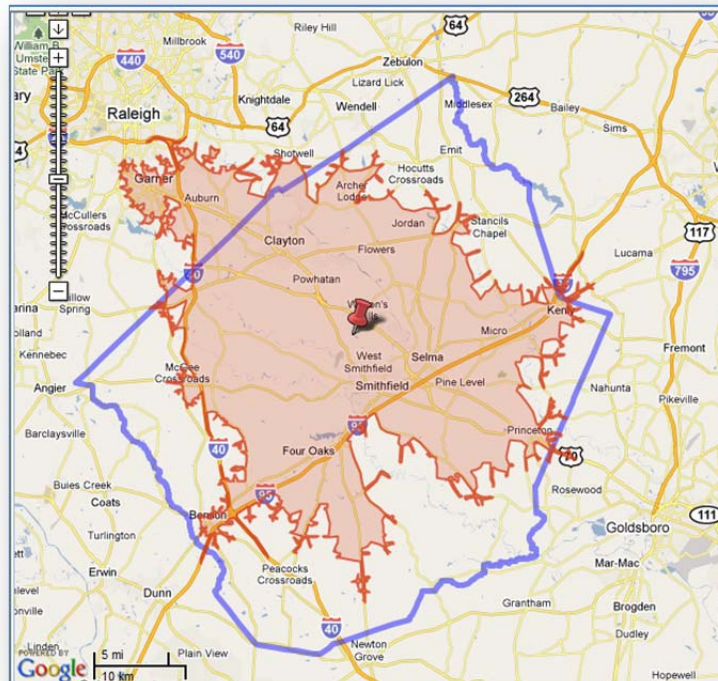


**Figure 2-8: 10-Mile Radius Centered on Johnston County Airport**

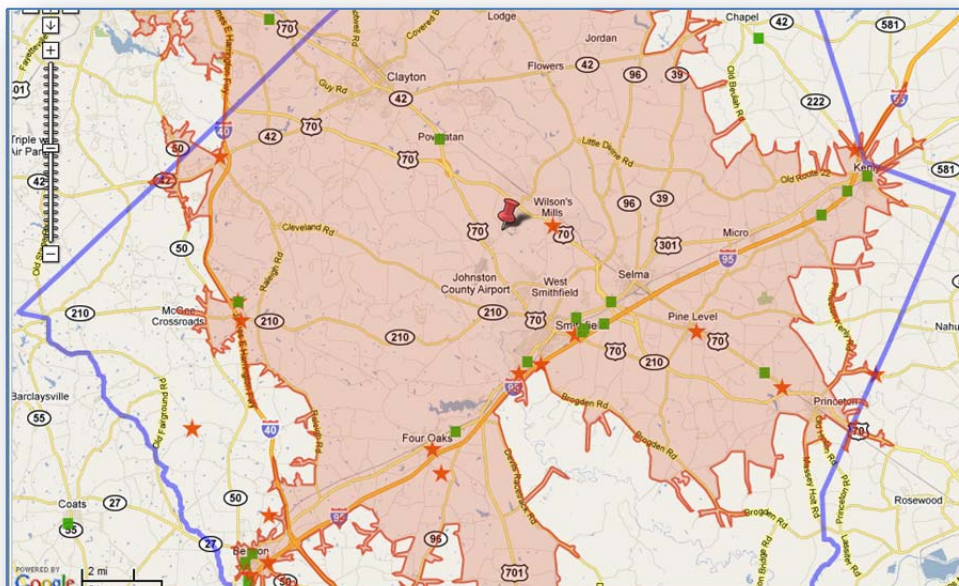
(Source: ITRE GIS Group)

As can be seen in Figure 2-9, the half-hour, drive-time catchment area encompasses most of the county and reaches the southwestern edge of Raleigh. In the future, there are two highway TIP projects programmed. First, I-40 from I-440 to NC 42 (ending in the west of Johnston County) shall be widened which will allow more traffic to flow between Raleigh and Johnston County with potentially less congestion. Second, I-95 will undergo widening from I-95 Business to I-40 north of Benson (which is in the southwest of the county, see Figure 2-10). This expansion could have a big effect on Johnston County in terms of travel times, traffic flows, and development. Of key interest is the large number of sites and buildings available for development along this corridor. With widening, businesses along I-95 shall enjoy higher levels of consumer exposure as well as improved travel times. Hence, trucking and distribution firms, plus support services for the trucking industry could be a good use and match for such sites yielding statewide economic benefits.





**Figure 2-9: 30-Minute Drive Time within Johnston County Airport**  
(Source: EDIS Database)



**Figure 2-10: Available Sites (★) and Buildings (■) Near Johnston County Airport**  
(Source: EDIS Database)



In terms of air travel, the Johnston County Airport is a 32-year old, general aviation airport. The runway has been lengthened twice and is currently 5,500 feet long. There is a 20-year master plan by WK Dickson on file with NCDOT that includes a new terminal building in 3 to 4 years (pending funding) at an estimated cost of \$2M; the facility has been designed and includes leasable space and a top-notch conference room. In the near-term, and to fulfill an FAA requirement, JNX is starting work on a runway safety area (grass for overshoot landings). This area will bring JNX up to FAA standards for a 5,500-foot runway. JNX is conducive to corporate travel and that of growing businesses. Companies that have used JNX in the past include: OPW Fueling Containment Systems (in Clayton), Gates Concrete (in Smithfield), and Carolina Electronic Assemblers (in Smithfield).

A key distinction from many of the GA airports in the state is that JNX is a self-sustaining airport. There are no tax breaks associated with using it, but the airport manager has negotiated with the county to give corporations an incentive to come here and buy fuel (one-half of the property taxes back for 5 years).

National rail access to the county is good, but providing rail to the airport does not appear feasible. Connection with NS to the north is within 3.5 miles from the airport, but the rail connection would need grade separation crossings with Business US 70 and US 70 as the rail line is north of US 70. To the east, the CSX rail line is also within 3.5 miles, but major crossings would need to be constructed for US 301 and NC 210. While this is feasible, access directly to the airport is extremely limited. The airport itself is surrounded by watershed issues (creeks and wetlands), limiting access to land immediately adjacent to the airport.

Water transportation is accessible via intermodal links. Both of NC's ports are approximately 2 hours by road from Johnston County—Wilmington via I-40 and Morehead City via US 70. Out-of-state ports are significantly further, again by driving: Norfolk, VA is 3 hours and Savannah, GA is about 5 hours.

### 2.3.1 Strengths, Weaknesses, and Needs

One of the biggest economic development strengths in Johnston County is the national highway and national railway connections that exist within the county so goods can be moved efficiently and with intermodal options possible. Moreover, Johnston County's proximity to NC military installations (primarily Fort Bragg in Fayetteville via I-95) gives the area access to military personnel that are skilled in logistics as well as other tasks. When these service people retire from the military they may desire to start new careers while staying in the area, thereby giving the area direct access to a skilled labor force. Furthermore, there is a strong Workforce Development Center in Clayton for new industries/ product lines and retraining opportunities. It is associated with Johnston County Community College which is located in Smithfield. Key avenues of study include BioWork, pharmaceutical programs, commercial driver's license courses, and courses tailored to specific industry needs as they arise.

In terms of current sites for a logistics village, the Four Oaks Business Park site southeast of Smithfield between I-95 and US 96 is a NC certified industrial site with about 350 total acres. Phase I infrastructure is complete; the county put the first \$1M into the park for roads and utilities with Phase II to be funded with grants. This site has the East Coast distribution facility

(approx. 720,000 square feet on 120 acres) of one large medical supply company, Becton, Dickinson, and Company (BD). BD plans to truck product to/from this new facility. And there is another certified site in Selma that is 250+ acres which the county hopes is developed with a rail-centric focus.

The rural, less-developed nature of Johnston County means there are fewer local private dollars as compared to the RTP area that can be poured into economic development activities. Recent population growth has come from residential development with residents commuting outside of the county to jobs in Wake and other counties. The county has an attractive website with information marketing the area for future business growth, with both available land and office space identified. Therefore, local economic development leaders should continue generating a strong marketing presence and coordinating closely with the local airport. In addition, to enhance the marketability of the Four Oaks Business Park, widening of Allandale Road in the vicinity of it should be considered.

#### 2.4 **Logistics Village 4 – Sanford-Lee County Executive Jetport Area**

Southwest of Wake County is the second smallest county in the state, Lee County, commonly referred to as a "micropolitan"<sup>12</sup> in planning parlance drawing upwards of 5,000 workers daily from Harnett, Chatham, and Wake Counties. Within its borders is one of the reliever airports for RDU, Raleigh Executive Jetport at Sanford-Lee County (TTA). The airport is on the north side of the main town in the county, Sanford, which is approximately 45 minutes drive-time from the Raleigh-Durham area. Figure 2-11 is an aerial photograph of TTA and the surrounding transport network can be clearly seen in Figure 2-12 for a 10-mile radius around TTA. As is evident, this area is accessible most directly via US 1 or via CSX Railroad and is considerably more rural than the Raleigh-Durham area, but not as much as Johnston County. Alternate highway routes from the Raleigh-Durham area include: (1) US 401 to US 421, (2) US 401 to NC 42, and (3) US 64 to US 15/501.

The airport is located to the east of US 1, with a CSX rail line located adjacent to the airport. This certainly provides ready marketing of potential industry/rail activity at or near the airport. However, access to the airport is also across this same rail line. Lee County is another area in NC where CSX and NS lines cross, moreover, a short line exists. The NS line runs to the south of the airport. Freight rail traffic on the CSX line is once per day, Amtrak is two times per day, and the short line typically operates one to two times a day.

The jetport is on approximately 700 acres. There are 130 planes currently based at the airport and no scheduled air carrier service exists or is planned. The current runway is 6,500 feet with a long-term plan to expand it to 8,000 feet and strengthen it from 80,000 pounds to accommodate 100,000 pound aircraft. The terminal building is being upgraded and additional corporate hangar space is planned. A tower is likely in the next 10 years. The area worked carefully on zoning so

<sup>12</sup> Definition: "counties containing one or more urban areas containing 10,000-49,999 people; micro areas also include outlying counties that are economically tied to the central counties, as measured by the share of workers commuting on a daily basis to the central counties." Source: Office of Management and Budget, Statistical Programs and Standards

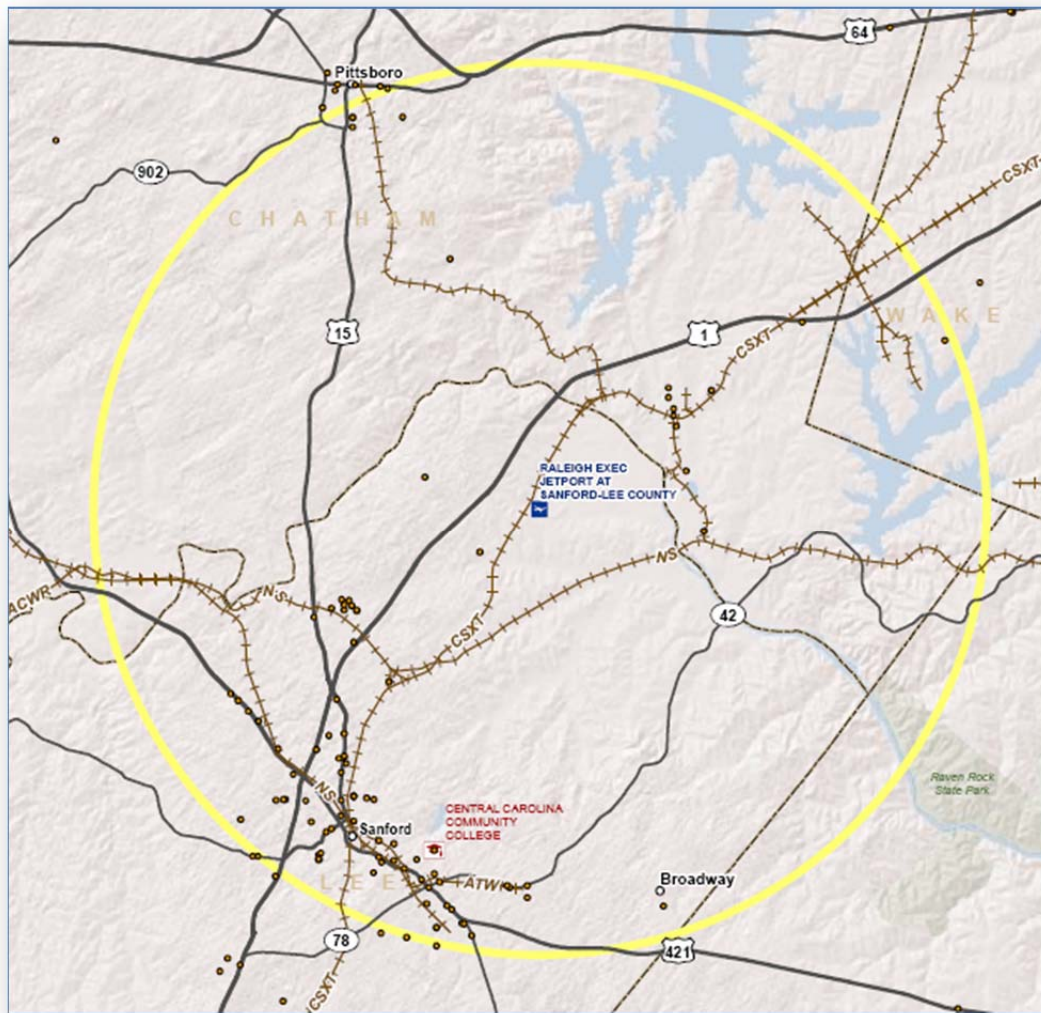
residences are not near the airport. Most businesses are using the airport for corporate travelers (executives, sales people, to bring potential buyers to a company headquarters). There are some small cargo trips—mainly for keeping just-in-time production going or delivering time-sensitive materials.



**Figure 2-11: Aerial View of Logistics Village 4 Site**

(Source: GoogleEarth, Inc.)

The county has sites up to approximately 800 acres that are available for industrial development as shown in Figure 2-13. Just north of Sanford is a 167-acre development off of US 1 across from the jetport that is served by various utilities. For example, there is a sewer line to the park and a power sub-station there. A fiber ring for communications and water lines will be added to the park soon, as will sewer collection lines.

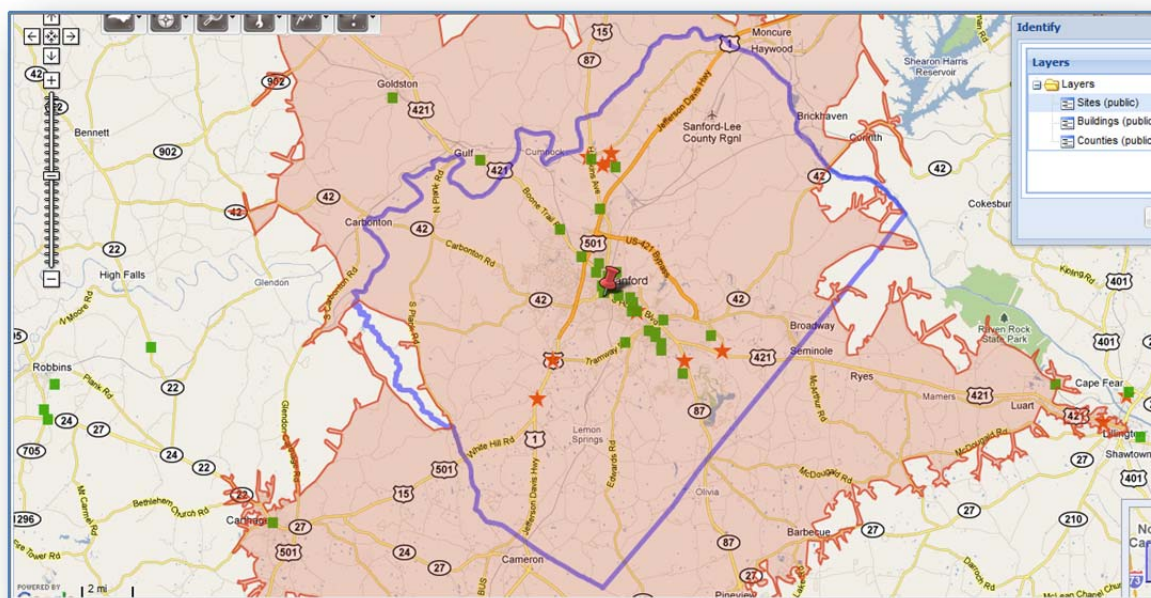


**Figure 2-12: 10-Mile Radius Centered on Sanford-Lee County Airport**

(Source: GoogleEarth, Inc.)

According to the STIP, a US 421 bypass around Sanford is programmed for Lee County. In addition, there are plans for changes to NC 87 associated with BRAC.





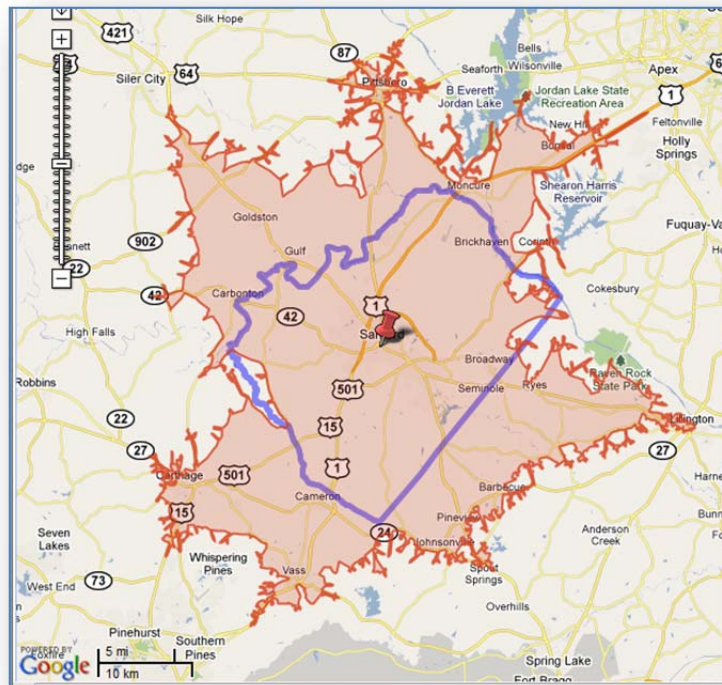
**Figure 2-13: Available Sites (★) and Buildings (■) Near Sanford-Lee County Airport**  
(Source: EDIS Database)

### 2.4.1 Strengths

For potential development, Lee County is following the RTRP clusters of innovation with the pharmaceutical industry well-represented by Pfizer and Wyeth. The county has a critical mass of jobs in this cluster that workers commute to from outside of the county. Within Lee County, there is a talented labor pool particularly in metal working, machining, and tool and die (GKN, Caterpillar, Moen, Moretti). The county is already a demand-pull site with businesses wanting to locate here so the private sector is spending the money to come.

Moreover, the Lee County Economic Development Corporation (LCEDC) and the airport work closely together to promote the region and its opportunities. The LCEDC is being very proactive in marketing the airport as a major reliever of RDU business aircraft. The group has developed a very slick website for Sanford-Lee County airport, along with marketing a connection with a nearby industrial park, to the west of US 1, available for development. There is a large amount of adjacent land available (e.g., woods to the east that could be developed) and the county is strongly promoting it for industrial development.

There is a big labor draw from Cary, Greensboro, and Fayetteville (4th largest urban area in the state). Lee County has access to a talent pool of approximately 700,000 to 800,000 people within a 30-minute drive along several safe, well-connected roads as shown in Figure 2-14. Plus, there is the Central Carolina Community College-Lee County campus for training local talent.



**Figure 2-14: 30-Minute Drive Time within Sanford**

(Source: EDIS Database)

Rail connectivity is excellent in Lee County and highway connectivity is good, offering an interstate quality 4-lane highway on US 1 (no signals for miles, making it an attractive route for commuting between Raleigh and Sanford). Additionally, there are some container trucks from Lee County that are shipping to the ports in Wilmington, NC and Charleston, SC.

## 2.4.2 Weaknesses

Commuting between Pittsboro and Sanford can be time-consuming because of US 15/501. If widened to four lanes from Sanford to Pittsboro, US 15/501 could become another attractive route for travel and commerce, especially since it connects directly with US 64 and Chapel Hill further north.

The airport is served by two septic systems with extensive piping from the buildings, under the runways, to the septic fields on the east side of the property (tree line). A sewer line is a few miles from the airport and would require a lift station to tie into the airport. There is a wastewater treatment line tie-in on Colon Road.

## 2.4.3 Needs

The biggest need is for sewer to be connected to the airport. This would allow for future growth and expansion on airport property and on land adjacent to the property.



The US 421 bypass should be completed on each end. This would provide better traffic flow west to Greensboro and east to Lillington and then Dunn and I-95. As an eastern alternative, NC 87 could provide quicker access to markets along I-95 when the future I-295 northern bypass of Fayetteville is completed. This would also allow the county to support BRAC expansion initiatives and the growth expected from the relocation of troops to Fort Bragg.

## 2.5 **Other Potential Logistics/Development Sites**

There are numerous other sites ready for development within the 13 county research triangle region. Many are much smaller in size than what this study was focused on, and there are both buildings and office space available for rent to companies. The following brief descriptions of some of these sites mentioned during outreach efforts highlight the varied purposes and readiness for business development within the Research Triangle Region.

### 2.5.1 **Veridea Development in Apex, NC**

The Veridea development is planned for a 1,000-acre tract in Apex. It is bounded by the major thoroughfares of US 1, NC 55 and the future Western Wake Freeway. The goal is creating a sustainable, mixed-use, urban community over the next 10 to 15 years. It could provide more than 30,000 jobs in a “live-work-play” environment that demonstrates the principles of sustainable design and construction. Some specifics include plans for 10 million SF of office development, 3.5 million SF of mixed-use retail and commercial space, 2 million SF of high-tech manufacturing, and 8,000 residential units. While not a freight logistics village, the scale of the project will certainly require shipping support in the forms of construction materials for buildings and infrastructure, consumable goods once buildings and residences become occupied, office and home furnishings, materials for high-tech manufacturing operations, building and landscaping maintenance, etc.

### 2.5.2 **Friendship Site in Holly Springs, NC**

The Friendship Site is a 130-acre “shovel ready site” situated adjacent to US 1 and about 1.5 miles northeast of the interchange of US 1 and New Hill Holleman Road (Exit 89). It is zoned light industrial and is one of the premier sites being marketed by the Holly Springs Economic Development Office.

### 2.5.3 **Person County Airport, Roxboro, NC**

What makes this location attractive is the proximity to I-85 south and I-40 west/east (via US 501 to Durham) and I-85 north (via US 158 to Oxford). The airport has a 6,005’ runway with land available adjacent to the airport, although no large parcels are currently put together for marketing to potential businesses. Rail access via CSX can accommodate manufacturing needs in moving heavy freight. It is also in close proximity to RTP and the businesses both within and near the park.

### 3 Summary

This summary pulls together the overall results from site investigations and outreach efforts with results primarily displayed in two tables. Details for this information are contained in the body of the report for each logistics village site.

#### 3.1 ***Logistics Villages Summarized***

The seven major logistics villages investigated in this region cover seven of the 13 counties. The initial focus was locating sites with good or excellent highway, rail and air access, and determining any infrastructure needs to make a site highly attractive for major business development or logistics services. Table 3-1 provides a quick summary of the strengths, weaknesses, and needs of the seven logistics villages studied.

In addition to the summary in Table 3-1 on the following page, a more detailed comparison is presented in Table 3-2. Together, the tables provide the reader with a quick assessment of the ease or difficulty of developing a site into a major logistics village. The reader should be aware that the list does not include all sites available in the region. There are many smaller sites (50 to 150 acres) being developed or planned for development, plus some larger multi-use sites (up to 1,000 acres) that will certainly have local and regional impact if enough jobs are created by the business, office, and retail services planned for these sites.

In summary, the region supports a robust economy overall, especially for Wake, Durham, Orange, and Johnston counties, although there are some counties, like Warren, struggling to hang on to the small number of jobs and residents in that county. Percent unemployment is lower than the state average, population is growing, and there is strong leadership from the business community. Innovation is key to the success of the region, whether for pharmaceuticals, medical care, or gaming. Post-production of agriculture crops could also help support jobs in rural areas. Poultry and pork products could become important export commodities to South America and Africa in refrigerated containers through the ports with expanded refrigeration warehousing at either or both ports.

**Table 3-1: Summary of Potential Logistics Villages**

	STRENGTHS	WEAKNESSES	NEEDS
<b>RDU Aviation-related (Tier 3)</b>	Proximity to RTP. I-40, I-540, US 70 access is excellent. FTZ #93 nearby. Relationship with RTRP.	Rail inaccessible. Site constrained, but 3 <sup>rd</sup> runway can fit.	Transit service to/from RTP if internal loop system built within RTP.
<b>TRIANGLE NORTH</b>			
<b>Franklin: Technology &amp; aviation (Tier 2)</b>	250 ac. Site. Development ready. US 401 access. Adjacent to GA airport.	CSX rail 8 mi. away	US 401 to be multilane to I-540.
<b>Granville: Life science &amp; technology (Tier 2)</b>	Certified 527 ac. site with 1 mi. road & utilities in-place. I-85 access & frontage. GA airport 3 mi. away. CSX rail 2 mi. (open).	RDU 40 mi. away.	None.
<b>Vance: Technology &amp; manufacturing (Tier 1)</b>	Certified 422 ac. site. Vance-Granville CC. I-85 access & frontage. GA airport 5 mi. away. CSX rail 3 mi away (open).	RDU 45 mi. away.	None.
<b>Warren: Logistics, distribution, manufacturing (Tier 1)</b>	1,000 ac. site. Re-certification in process. US 1/158 access (I-85 3 mi. away); CSX rail ½ mi. (open).	GA airport 16 mi. away. RDU 60 mi. away.	Rail connection for major logistics/ distribution/ intermodal activity.
<b>SANFORD-LEE COUNTY (Tier 2)</b>	Relationship between GA airport & LCEDC is excellent. Good highway and rail connectivity.	No sewer line to airport.	Sewer line to airport. US 421 bypass connectors on east and west ends.
<b>JOHNSTON COUNTY (Tier 3)</b>	350 ac. certified Four Oaks site. 250+ ac. site in Selma with rail access. I-40 & I-95 cross. NS & CSX rail cross. Proximity to military installations. Johnston County CC.	GA airport seems isolated from county economic development efforts.	Strengthen GA airport operations as gateway to the county for new business.

Table 3-2: Assessment Matrix

Measure	Village 1 RDU	Village 2 Triangle North Properties ***	Village 3 Johnston County	Village 4 Lee County
Facility Type*	Air-truck hub.	F: air-truck hub. V & W: truck-rail hubs. G: air-truck-rail hub.	Truck-rail intermodal facility.	Truck-rail-air hub.
Target Industries	Aviation-related.	F: tech & aviation. G: life science & tech. V: tech & manufacturing. W: logistics, distribution, & manufacturing.	Aviation-related. Manufacturing. Logistics, distribution.	Pharmaceuticals. Aviation-related. Manufacturing.
Speed of Implementation	Ongoing.	Next 5-10 years.	Next 10-20 years.	Next 5-10 years.
Infrastructure - Transport				
Highway	I-40, I-540, US 70	I-85, US 1, US 401	I-40 & I-95 cross, US 70	US 1, US 64, I-95
Rail	NS in vicinity but direct access not sought.	CSX near all but Franklin.	NS & CSX cross, CSX parallels I-95. 3.5 miles from JNX but direct access requires grade separation.	NS & CSX cross, also a short line.
Air	RDU – commercial av.	LHZ, HNZ – general av.	JNX – general av.	TTA – general av.
Existing runways (ft)	10,000/ 7,500/ 3,500	F: 5,500/	5,500	6,500
Can runways be extended?	Not needed, but a 3 <sup>rd</sup> parallel runway can be added.	F: Yes, could go to 7,000 ft. with purchase of property.	Already extended twice; none planned – watershed issues.	Yes, plan is extend to 8,000 ft. and strengthen to 100K lbs.
Maritime (ship/barge)	Wilmington 2 hours by highway.	Norfolk, possibly. Morehead City.	Wilmington & Morehead City 2 hours by highway.	Wilmington & Morehead City 2 hours by highway.
Infrastructure - Other				
Communications	High speed internet.	High speed internet.	High speed internet.	High speed internet.
Power	Electricity, gas.	Elec. & gas available except no gas at Franklin site.	Electricity, gas.	Electricity, gas.
Water	Cary, Raleigh.	G: Oxford. V: Henderson. W: Warren Co. F: Franklin Co.	Smithfield, Selma, Clayton.	Sanford.
Sewer	Cary, Raleigh.	G: Oxford. V: Henderson. W: Warren Co. F: Franklin Co.	Smithfield, Selma, Clayton.	Sanford.
Land Available (acreage)	Limited on-site.	G: 527 ac. V: 422 ac. W: 1,000 ac. F: 250 ac.	Several, esp. along I-95; Four Oaks = 350 ac. site; Selma = 250 ac. site.	Sites from 5-50 ac. at TTA and 100-800 ac. in the county. Lee Co. Industrial Park at 167 ac.
Labor Force				
Availability	Excellent.	Fair to good, since rural.	Good; some ex-military with logistics skills.	Good.
Education Programs to Support Local Industry	Multiple universities and community colleges.	Vance-Granville CC.	Johnston County CC and Workforce Development Center programs include: BioWork, pharma, CDL training.	Central Carolina CC.
Specialty Criteria**	Foreign Trade Zone #93			

\* Facility type = major business practice at this location (intermodal facility, warehouse, distribution center, light manufacturing, and so forth).

\*\* Specialty Criteria = foreign trade zone, customs, high-security, and so forth.

\*\*\* F = Franklin Co. site; V = Vance Co. site; W = Warren Co. site; G = Granville Co. site.

## 4 Outreach

The individuals responsible for economic development and land use planning at the state and local levels are key individuals in helping facilitate new businesses moving into the state and in accommodating job growth by planning for future infrastructure needs. This region is no exception.

Our team has reached out to important regional leaders in a three stage process: 1) for initial information gathering, 2) for commentary on preliminary results, and 3) for review of the draft region report. Information and feedback we have received from the following individuals has been invaluable in allowing us to share the business successes in this region.

- Research Triangle Regional Partnership
  - Bo Carson
  - Lee Anne Nance
  - Charles Hayes
  - Pam Wall
- Triangle J Council of Governments (TJCOG)
  - John Hodges-Copple, Regional Planning Director
- Regional Transportation Alliance
  - Joe Milazzo II, Executive Director
- Johnston County
  - Peggy Anderson, Director, Johnston Co. Economic Development
  - Ray Blackmon, JNX Airport Manager
  - Berry Gray, Planner
- Lee County
  - Robert ‘Bob’ Heuts, Director, Lee Co. Economic Development Corporation
  - Dan Swanson, TTA Airport Manager
  - Robert Bridwell, Planner
- Durham County
  - Edward ‘Ted’ Conner, Vice President of Economic Development & Community Sustainability
- Wake County
  - John Brantley, RDU Airport Director
  - Casey Croonce, Research Manager, Wake Co. Economic Development, Raleigh Chamber
  - Joe Bryan, Growth, Land Use & Environment Committee
  - Durwood Stephenson, Director, US 70 Corridor Commission

- Triangle Transit
  - David King, CEO and General Manager
  - Patrick McDonough, Senior Transportation Planner
- North Carolina Railroad Company
  - Scott Saylor, President
- MPOs/RPOs
  - CAMPO [Raleigh, Cary, Garner, etc.] – Ed Johnson, Kyle Ward
  - DCHC-MPO [Durham, Chapel Hill, Carboro] – Felix Nwoko, Mark Ahrendsen, Leta Huntsinger
  - Kerr-Tar RPO – Mike Ciriello
  - Mid-Carolina RPO – Joel Strickland
  - Triangle Area RPO – John Hodges-Copple
  - Upper Coastal Plain RPO – Daniel Van Liere
- NCDOT Division Engineers
  - Bobby Lewis, Division 4 Engineer
  - Wally Bowman, Division 5 Engineer
  - Greg Burns, Division 6 Engineer
  - Mike Mills, Division 7 Engineer
  - Tim Johnson, Division 8 Engineer



## 5 References

1. *“State of the Research Triangle Region: An in-depth look at the region’s economic health and competitive position.”* RTI International and Research Triangle Regional Partnership, May 21, 2009.
2. *“Staying on Top: Winning the Job Wars of the Future.”* Research Triangle Regional Partnership, March 2004.
3. The Employment Security Commission of North Carolina, EDIS database. <http://www.ncesc1.com/LMI/industry/industryMain-NEW.asp>
4. Atlas of Rural and Small Town America, USDA ERS. <http://www.ers.usda.gov/data/ruralatlas/atlas.htm#map>
5. North Carolina Department of Transportation. <http://www.ncdot.gov/>
6. Research Triangle Regional Partnership. <http://www.researchtriangle.org/>
7. Triangle North Properties. <http://www.trianglenorthnc.org/>
8. Triangle Transit. <http://triangletransit.org/news/>
9. Southeast High Speed Rail Corridor. <http://www.sehsr.org/>
10. Research Triangle Park, NC. <http://www.rtp.org/>
11. Johnston County Economic Development. [http://www.johnstonnc.com/mainpage.cfm?category\\_level\\_id=527](http://www.johnstonnc.com/mainpage.cfm?category_level_id=527)
12. Johnston County Airport. [http://www.johnstonnc.com/mainpage.cfm?category\\_level\\_id=792](http://www.johnstonnc.com/mainpage.cfm?category_level_id=792)
13. Lee County Economic Development. <http://www.lcedc.com/>
14. Raleigh Executive Jetport at Sanford-Lee County. <http://www.raleighexec.com/>
15. Raleigh Durham International Airport. <http://www.rdu.com/>

## 6 Appendix

### 6.1 *Presentation to the GLTF on December 15, 2010*

# SEVEN PORTALS STUDY RESULTS: RESEARCH TRIANGLE REGION

Presentation to  
*Governor's Logistics Task Force*

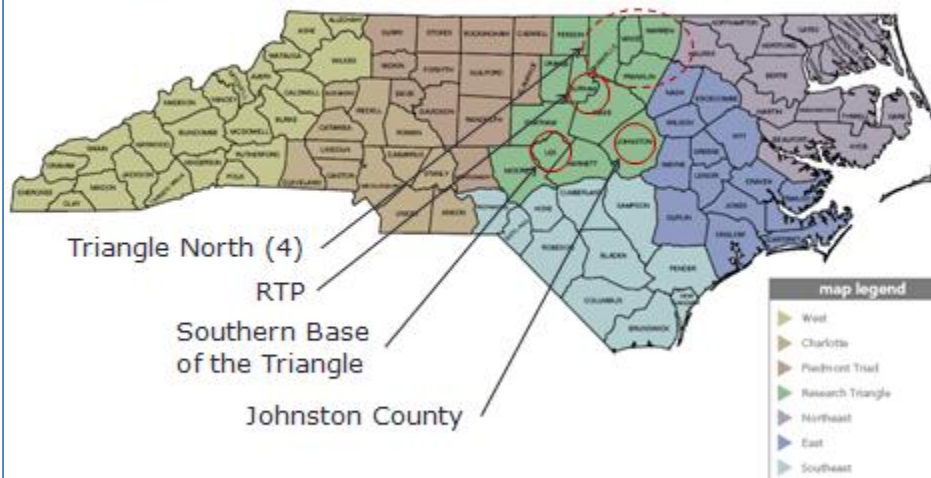
December 15, 2010

By  
Robert Foyle, P.E. and Alixandra Demers, Ph.D.  
Institute for Transportation Research & Education, North Carolina State University



Seven Portals Study Team slide 1

## Triangle Region – Geographical Landscape



Seven Portals Study Team slide 2

## Triangle Region – Demographics

- Land: 6,644 sq. mi.
- Population: 1.98 million
- Labor force: 980,880
- 7.7% unemployment [Oct. 2010] (range is 5.5% to 11.3%)
- \$884 avg. weekly wage
- \$77,100 avg. household income
- \$30,419 per capita income
- 31% commute outside of county they reside in
- Vance & Warren Counties are Tier 1 for CY2011



Seven Portals Study Team slide 3

## Triangle Region Overview

- Research Triangle Regional Partnership (RTRP) provides guidance to the 13 counties on business growth
- Concept is "clusters of innovation", feeding off the success of RTP
- Foreign Trade Zone #93



- Region Features
  - State Government – Capital City (Raleigh)
  - Metro areas of Raleigh, Cary, Durham, Chapel Hill
  - Great highway access with I-40/85/95, US 1/64/70, and more
  - Good rail network
  - International commercial airport plus several excellent GA airports
  - Major universities
  - Community colleges
  - Extensive parks and lakes
  - Major cultural / art opportunities



Seven Portals Study Team slide 4

## Clusters of Innovation

Focus is on 11 business categories:

- Advanced gaming and e-Learning
- Advanced medical care
- Agricultural biotechnology
- Analytical instrumentation
- Bioagents / infectious diseases
- Clean green technologies
- Defense technologies
- Informatics
- Nanoscale technologies
- Pervasive computing
- Pharmaceuticals

*Over 110,000 new jobs created between 2004-2009 through business and community partnerships promoting innovation, focused on these businesses.*



Seven Portals Study Team slide 5

## RTP - Overview

- Now at 7,000 acres (600 acres available for development)
- 42,000+ high-tech jobs and an estimated 10,000 contract jobs
- Over 170 companies
  - Business and Professional Services (31)
  - Environmental Sciences (5)
  - Financial & Insurance Activities (3)
  - Information Technology (37)
  - Life Sciences (54)
  - Material Sciences & Engineering (14)
  - Retail Amenities & Service Providers (9)
  - Scientific Associations, Foundations and Institutes (19)



Seven Portals Study Team slide 6



## Village 1 – RDU International Airport (Tier 3)

- **Strengths:**
  - 5,000 acres (with parcels available for development)
  - A major commercial airport for the state (8.97M passengers in 2009)
  - Water/sewer from two sources
  - Access via multiple interchanges
  - Already shipping air freight (92,459 tons in 2009; BAX Global, DHL Worldwide Express, Federal Express, United Parcel Service)
  - Preserved area for a third parallel runway
  - FTZ#93 close by
- **Weaknesses:**
  - No rail access (need to cross I-40 from the south or I-540 from the west)
  - Constrained on all sides
- **Needs:**
  - Future bus connection to proposed RTP circulating loop road when that gets built



Seven Portals Study Team slide 7

## Village 2 – Triangle North Properties



- Concept of “mini-hub” explored in a 2003 study by the Kenan Institute
- Study suggested one mini-hub in the northern counties and one mini-hub in the southern counties
- 4 sites developed, all in the northeast counties



Seven Portals Study Team slide 8



## Village 2 – Comparison of Triangle North Properties

	STRENGTHS	WEAKNESSES	NEEDS
<b>GRANVILLE</b> <i>Life science &amp; technology</i> (Tier 2)	<ul style="list-style-type: none"> <li>• Certified 527 ac. site w/ 1 mi. road &amp; utilities in- place</li> <li>• I-85 access &amp; frontage; GA airport 3 mi.; CSX rail 2 mi. (open)</li> </ul>	<ul style="list-style-type: none"> <li>• RDU 40 mi.</li> </ul>	<ul style="list-style-type: none"> <li>• Site utilities</li> </ul>
<b>VANCE</b> <i>Technology &amp; manufacturing</i> (Tier 1)	<ul style="list-style-type: none"> <li>• Certified 422 ac. site</li> <li>• Vance-Granville Community College</li> <li>• I-85 access &amp; frontage; GA airport 5 mi.; CSX rail 3 mi. (open)</li> </ul>	<ul style="list-style-type: none"> <li>• RDU 45 mi.</li> </ul>	<ul style="list-style-type: none"> <li>• Site utilities</li> </ul>
<b>WARREN</b> <i>Logistics, distribution, manufacturing</i> (Tier 1)	<ul style="list-style-type: none"> <li>• 1,000 ac. Site (property options being renewed)</li> <li>• US 1/158 access (I-85 3 mi. away); CSX rail ½ mi. (open)</li> <li>• Access to Port of Norfolk</li> </ul>	<ul style="list-style-type: none"> <li>• GA airport 16 mi. away</li> <li>• RDU 60 mi.</li> </ul>	<ul style="list-style-type: none"> <li>• Renew property options</li> <li>• Rail connection for major logistics/ distribution activity</li> </ul>
<b>FRANKLIN</b> <i>Technology &amp; aviation</i> (Tier 2)	<ul style="list-style-type: none"> <li>• 252 ac. site</li> <li>• US 401 access</li> <li>• Adjacent to GA airport</li> </ul>	<ul style="list-style-type: none"> <li>• CSX rail 8 mi. away</li> </ul>	<ul style="list-style-type: none"> <li>• US 401 to be multilane to I-540</li> </ul>



Seven Portals Study Team slide 9

## Village 3 – Johnston County (Tier 3)

- Strengths
  - Excellent transportation access
    - CSX & NS cross in Selma
    - I-40, I-95 near Benson
    - 5,500 ft. runway on 463 ac. GA airport
  - 350-acre site (Four Oaks)
  - Is actively preparing and certifying sites
  - Focus on life science & technology industries
  - GA airport is self-sustaining
  - Community college workforce training program
- Weaknesses
  - Business relationship between county economic development office and the GA airport could be stronger (e.g., Airport Authority position for county economic development officer)
  - Absence of a private sector champion
- Needs
  - Enhance business relationship between economic development and GA airport
  - New terminal at the GA airport



Seven Portals Study Team slide 10

Village 4 – Lee Co.  
(site map)

- 167 ac industrial park



Seven Portals Study Team      slide 11

### Village 4 – Lee County (Tier 2)

- Strengths
  - Branding: "Southern Base of the Research Triangle Region"
  - Excellent transportation access
    - Both Class 1's & a short line in county; NS runs along GA airport frontage
    - Raleigh, Fayetteville, Morehead City highway access
    - Airport has 6,500 ft. runway, can be lengthened to 8,500 ft. (Raleigh Exec Jetport)
  - Over 700,000 workers within 30 minutes of the county
  - Available water/ sewer capacity
  - Workforce experienced in technology, aviation, pharma, life sciences, metal working, machining, tool & die
- Community college & HS with associate degree program
- Current Development:
  - Good working relationship between LCEDC & airport
  - 100-800 acre sites available for development
  - 250 more acres available on airport site; 167 acres are available across from it
- Weaknesses
  - Sewer to airport
  - Some sites certified
- Needs
  - Enhanced utilities (sewer)
  - Improved access to I-95 via NC87 to Fayetteville Loop



Seven Portals Study Team slide 12

## Outreach Efforts

### Initial Outreach Efforts (1 of 2)

- Research Triangle Regional Partnership
  - Bo Carson, Lee Anne Nance, Charles Hayes, Pam Wall
- RDU Airport
  - John Brantley, RDU Airport Director
- Johnston County
  - Peggy Anderson, Director, Johnston Co. Econ. Development
  - Ray Blackmon, JNX Airport Manager
- Lee County
  - Bob Heuts, Director, Lee Co. Economic Development
  - Dan Swanson, TTA Airport Manager



Seven Portals Study Team slide 13

## Outreach Efforts

### Initial Outreach Efforts (2 of 2)

- TJCOG (also operate FTZ #93)
  - John Hodges-Copple, Regional Planning Director
- Regional Transportation Alliance
  - Joe Milazzo II, Executive Director



Seven Portals Study Team slide 14

## Outreach Efforts

### • Latest Outreach Efforts (1 of 2)

- Division Engineers
  - Division 4 – Bobby Lewis
  - Division 5 – Wally Bowman
  - Division 6 – Greg Burns
  - Division 7 – Mike Mills
  - Division 8 – Tim Johnson
- MPOs/RPOs
  - CAMPO – Ed Johnson
  - DCHC-MPO – Felix Nwoko
  - Kerr-Tar RPO – Mike Ciriello
  - Mid-Carolina RPO – Joel Strickland
  - Triangle Area RPO – John Hodges-Copple
  - Upper Coastal Plain RPO – Daniel Van Liere



Seven Portals Study Team slide 15

## Outreach Efforts

### • Latest Outreach Efforts (2 of 2)

- Chambers of Commerce
  - Tanya Blalock, Raleigh Chamber
  - Ted Conner, VP of Econ. Development & Community Sustainability, Durham Chamber
- Others
  - Berry Gray, Planner, Johnston Co.
  - Robert Bridwell, Planner, Lee Co.
  - Joe Bryan, Growth, Land Use & Environ. Committee, Wake Co.



Seven Portals Study Team slide 16