Our region is unique and complex, with a polycentric urban pattern that includes several sizeable downtowns, four major universities, three major medical centers and many satellite communities, with travel and economic patterns that link them to the region's core counties of Durham, Orange and Wake. Our airport and our major economic engine, the Research Triangle Park (RTP), draw traffic to the center of our region.

Overall, our region is the result of three urban areas growing together around a central, yet low-density, core. At the same time, rapid population growth in the outlying areas provides a high-quality labor supply for firms at the center of the region. These patterns result in complex commuting flows that crisscross the Triangle. Although the complex nature of our region presents challenges to planning a regional transit system, there are physical connections between these places that have promise as major transit corridors and hubs. This section presents the corridors evaluated for regional transit investments and the technical process that analyzed those corridors.

Transit Components

Transit has three components:

- ***A route:*** The pathway followed to go from one place to another
- ***A service concept:*** How passengers are served, including characteristics such as distance between stops, hours of operation and frequency of vehicles
- ***A technology:*** The type of vehicle used to transport passengers.

This section focuses on the first component, transit routes. Section 5 discusses service concepts and technologies.

This section describes the places and corridors in the Triangle where transit investments are recommended. It also explains the data-driven, technical analysis of these places and corridors.

Building a successful transit system begins with identifying where the most promising transit markets are located, the places that can be served most effectively and efficiently. The Special Transit Advisory Commission (STAC) began its consideration of where to make investments by reviewing travel market and land use data for 16 "corridors" between places. These corridors had been analyzed in previous studies or plans for potential major transit investments. The 16 corridors also represent the most heavily traveled and congested routes serving our most intensely developed activity centers as well as areas emerging as new high-activity places. The deliberations of the STAC were not limited to these 16 corridors, however. Based on its judgment, the Commission added two corridors to the Vision Plan. The 18 corridors are listed below. Additional information on the configuration of the corridors is available in Appendix C.

- Apex to Raleigh
- Durham to Apex
- Durham to Burlington
- Durham to Carolina North
- Durham to North Durham
- Durham to Raleigh via RDU
- Durham to Raleigh via RTP
- Durham to Raleigh via US-70
- I-40 Corridor from Wake/Johnston County to NC-86

- Northern Arc I-540
- Pittsboro to Carolina North
- Raleigh to Franklinton
- Raleigh to Fuquay-Varina
- Raleigh to Selma
- Raleigh to Zebulon
- RDU to Carolina North
- UNC Hospitals to Burlington
- Southern Arc NC-540 (Triangle Expressway Turnpike)

Technical Analysis of Transit Corridors
Based on the considerable data already available for the corridors, more detailed study and analysis was undertaken through the Regional Transit Infrastructure Blueprint Technical Analysis Project, a cooperative effort by the region's two Metropolitan Planning Organizations (MPOs), the North Carolina Department of Transportation (NCDOT), Triangle J Council of Governments (TJCOG), and Triangle Transit. The Technical Analysis Project was designed to improve the analysis of potential transit investments and provided the technical information used by the STAC. It included three major components:

- ***Land use analysis:*** Uses 2005 land use and anticipated changes in land use for 2035 developed by the region's planners to show existing conditions and the anticipated changes over time. The analysis forecasts residential and non-residential densities to evaluate how many, what type and at what intensity jobs and housing will be located in the region.

- ***Travel Analysis:*** Uses the latest information on travel patterns in the region, generated by the current version of the Triangle Regional Model, the computer model that generates projections used by the two MPOs to identify transportation system needs. The model projects the number of trips, where trips begin and end and the time of day trips are made, combined with demographic measures and data on type of trips. This allows the comparison of corridors by measures that are important for transit including density of trips per acre, travel by lower income households, and trip volumes during the peak commute hours.

- ***Cost Analysis:*** Uses a cost estimating methodology for transit investments which includes capital and operating costs for a range of potential transit technologies.

Additional background on the Technical Analysis Project and a table of the statistics for the corridors analyzed are available in Appendix C.

The Technical Analysis Project worked with the MPOs and local planners to group the 2,317 Traffic Analysis Zones in the Triangle Regional Model into 207 Travel Market Places. These market places generally follow potential investment corridors so travel associated with the corridors can be examined for the 2005 (the base year) and 2035 (the time horizon of the current planning effort). The analysis also designated over 70 places where travelers enter or leave the region, so that trips that begin and/or end outside the geographic limits of the Triangle Regional Model could be included.

The level of detail and consistent methodology used in the Technical Analysis Project allows for a data-driven process to identify:

- Appropriate service concepts
- Transit technologies best suited to meet the service concept

The 18 corridors included in the Regional Transit Vision Plan extend transit service to growing satellite communities. In the region's

Where People Work: Major Employment Centers in the Triangle Region

Our universities and their associated medical centers are among our largest employers. In Durham County, Duke University and Medical Center is by far the largest employer with approximately 30,000 employees. North Carolina Central University is also a large employer in Durham County with approximately 1,500 employees. In Orange County, the University of North Carolina at Chapel Hill and UNC Healthcare employ approximately 22,000 employees. Wake County's largest university, North Carolina State University, has approximately 17,575 employees. These universities also have plans to for new or continuing expansion at Duke University's Central Campus, UNC's Carolina North Campus, NCCU's campus and NCSU's Centennial Campus.

The employment opportunities located at these universities in addition to the students taking classes account for significant travel demand. Furthermore, many jobs are concentrated on campuses, creating some of the highest densities of trips in the region. Besides students and employees, the university campuses also attract many other visitors for special events such as sporting events, theater productions, lectures and graduation ceremonies. These special events cause congestion on highways and local streets and consume all available parking on campus. The density of trips and the parking limitations make these campus areas well suited to being served by a major transit investment.

In addition to the region's universities, Wake County has a healthy cross-section of employment in other sectors. The State of North Carolina is the largest employer with approximately 40,000 employees, and the Wake County Public School System employs approximately 15,000. IBM remains the largest private-sector employer in the region with 13,000 employees, most in Research Triangle Park. Strong growth in employment is also expected to occur in Raleigh's downtown as mid- to high-rise mixed-use buildings continue to be permitted and built. The employment and residential density for downtown would be complemented with additional transit investments.

Furthermore, both Johnston County and Granville County are expected to be significant regional employment generators in the coming decade due to expansion in their current base of industrial employment; along with federal and state employment. Transit connections to these satellite communities will be essential for those "reverse" commuters originating from the region's urban core.

core counties of Durham, Orange and Wake, the corridors connect our downtowns, major universities, hospitals and employment centers, and include many of our most congested roadways where transit will provide a welcome alternative for commuters. The corridors also support potential connections beyond our region, leaving open the opportunity for transit connections to other regions in the state.

Although many transit systems focus on serving downtowns and core areas, the travel patterns in the Triangle region require bringing transit service to our outlying communities, too. Providing transit service to the outlying communities is important to build ridership and support for the regional transit system, serves as "feeder lines" to the core of the system, and offers a practical alternative to driving for those with long commutes. Dependable, affordable transit service is a vital lifeline that will strengthen the links between these communities and the region's employment, educational, cultural and health care centers. At the same time, the Vision Plan balances service to outlying communities with the needs of the denser urban core, with its higher ridership potential in order to ensure that provision of transit service does not encourage even more sprawl.

Each corridor has its own land use and travel pattern, and these patterns also vary within the corridors. These differences mean that there will be differences in the service concept and transit technology best suited for each corridor or for segments within individual corridors. The investments included in the Vision Plan reflect the number and type of trips projected for each corridor. This network of corridors can be added to over time, allowing for incremental investment to strengthen and expand the regional transit system.

What About Highway Investments?

In addition to evaluating transit opportunities for each corridor, investments in highway capacity were also considered. For some corridors, major highway projects are projected to meet capacity needs for the coming 30 years.

For these corridors, the most cost-effective transit strategies focus on services that take advantage of the highway investments, rather than making substantial investments in new structures or acquiring new right of way specifically for transit operations.