

# WHY DO WE NEED A TRANSIT PLAN?

## Overview

Raleigh and Wake County—indeed, the entire Triangle region—often rank tops or very high on “best places” lists. We are frequently cited as the best place to live, to work, to do business, to be single, to raise a family—you name it.

But we also make some other lists. For instance, in the May 10, 2011 issue of *Forbes*, the Raleigh-Durham-Chapel Hill region was given the “booby prize” for being America’s biggest gas guzzler. Christopher Helman of *Forbes* wrote:

“The cities and suburbs of ‘The Triangle’ are close enough that people don’t think twice about driving from one to the other. Yet in doing so, the average household racks up 21,800 miles per year. Assuming an average 20.3 miles per gallon, that means burning through 1,074 gallons per year, about \$4,200 at current prices.”

With growth projections showing that Wake County will continue to attract employers and citizens, we can be assured that traffic and mobility issues will continue to grow as well. Citizens want and expect to have more transportation options that are clean, safe and reliable.

In order to invest in transit, a plan is needed to address the many complex pieces: Projecting growth in terms of numbers as well as where it’s likely to occur, determining the best use of public transportation to serve those areas (i.e., bus or train or both), and deciding on projects to build.

Once a community decides a project is needed, many detailed steps follow: Identify funding, conduct analysis to minimize environmental and social impacts, evaluate and select engineering designs, involve the public in the decisions, purchase right-of-way if needed, and finally, contract out the construction and monitor it to completion.

All of this takes time, and we must make decisions now about how we want our county to look and operate 20 years from now, and what kind of transit choices we want today and tomorrow.

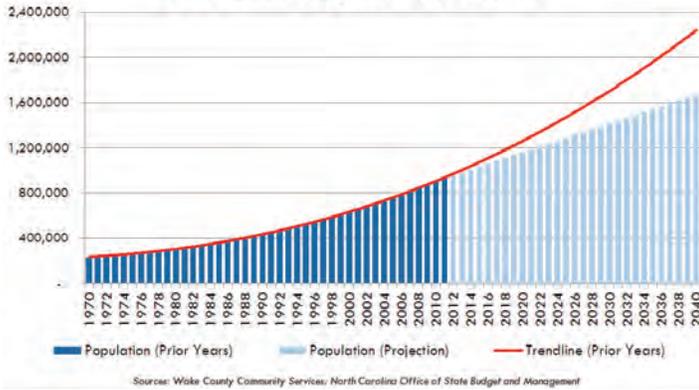
## Growth and a Changing Population

Wake County’s projected growth shows the population increasing from nearly 900,000 in 2010 to about 1.1 million in 2015, and more than 1.5 million in 2035.

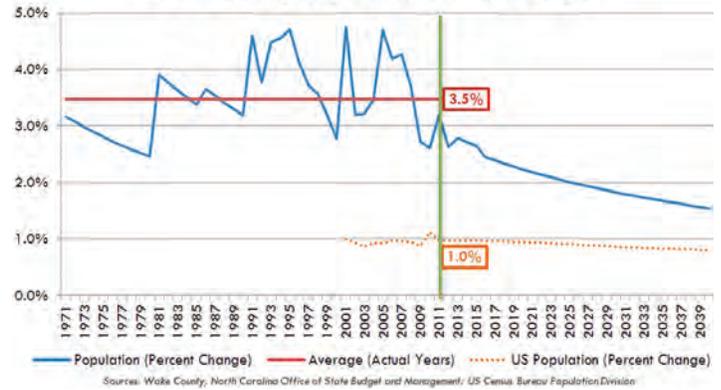
**Wake County Population**

Jurisdiction	2000	2005	2010	2015	2020	2025	2035
Apex	20,212	27,203	37,476	47,646	58,690	70,870	98,638
Cary	94,536	115,967	133,812	148,281	160,512	171,446	189,419
Fuquay-Varina	7,898	12,207	17,937	25,254	33,590	43,070	65,463
Garner	17,787	22,406	25,745	35,386	46,278	58,602	87,543
Holly Springs	9,192	15,190	24,661	29,685	34,875	40,404	52,478
Knightdale	5,958	6,938	11,401	18,979	27,922	38,310	63,422
Morrisville	5,208	12,829	18,576	20,733	22,615	24,354	27,400
Raleigh	276,094	338,357	402,825	449,846	490,982	529,060	596,038
Rolesville	907	1,742	3,786	5,985	8,560	11,536	18,696
Wake Forest	12,588	19,792	29,218	35,674	42,450	49,751	65,927
Wendell	4,247	5,042	5,845	9,103	12,908	17,300	27,845
Zebulon	4,046	4,606	4,433	6,750	9,444	12,545	19,970
Angier	—	—	103	672	1,375	2,214	4,299
Clayton	—	—	—	81	181	301	600
Unincorporated Wake County	169,173	176,514	185,175	199,995	210,441	217,816	223,350
<b>Total Wake County</b>	<b>627,846</b>	<b>758,793</b>	<b>900,993</b>	<b>1,034,069</b>	<b>1,160,823</b>	<b>1,287,579</b>	<b>1,541,088</b>

Wake County Population Projections



Wake County Population Percent Change



The reason this projection is important is because transit projects—particularly rail—tend to take at least eight to 10 years to plan, build and become operational. That’s why Wake County needs to plan now for the additional 600,000 people we’re expecting to add over the next 25 years.

The two graphs above show how the Transit Plan’s projections compare to our historic population growth. The first graph shows the future projections reflected in the Transit Plan are significantly below the trend line. The second graph shows how the percentage of population growth predicted compares to the past growth rates.

- 32,000 households in the Triangle have no vehicle available, up from 29,000 in 2000 and 27,000 in 1990.
- We are highly mobile: 10 percent of households lived in a different county a year ago and another 10 percent changed houses within their home county.
- 370,000 households—62 percent of the total—are households with only one or two people, and another 51,000 people live in group quarters such as university dormitories.



As our region continues to grow, our population itself is changing in ways that will likely influence our transportation investments. People

are busier than ever, and want to spend less time behind the wheel and have more choices about how to move around. Other factors that may affect public transit choices are the expected aging of our population and the number of households without vehicles available. This plan will prepare us to meet the increased demands of a population that is changing and growing.

According to CAMPO’s 2035 Long-Range Transportation Plan:

- By 2030, 15 percent of Triangle residents will be 65 or older, up from 9.5 percent in 2000.

In addition to a growing (by number) and changing (by age and income) population, the other important factor contributing to the urgency of solid transportation planning now is where the population growth is going to occur. The maps on the next page show a dramatic change in Wake County’s population density from 2010 and the much higher density county we’re expecting to become by 2040.

## Employment Growth & Competitiveness

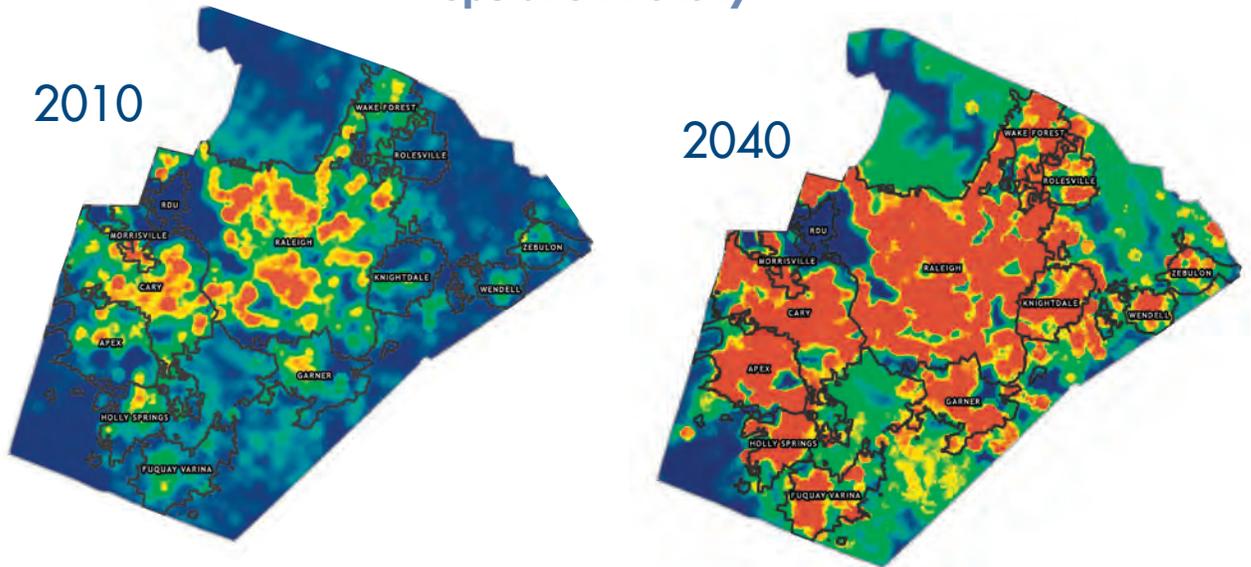
This plan is preparing Wake County to meet the demands of projected job growth, which goes hand-in-hand with population growth. Wake County’s projected growth shows the employment increasing from 480,000 in 2010 to more than 750,000 in 2035. Businesses need to attract a skilled workforce in order to be competitive; if they can continue to attract employees from the entire region, they have a wider labor pool from which to hire workers. Businesses also need to move freight on time in order to stay in business. Like most of the country, Wake County has seen job growth slow considerably during the economic recession, but we are in a very competitive position to attract jobs into the future.

Wake County Employment

	1980	1985	2000	2010	2020	2035	2040
Total jobs	171,946	221,966	426,315	480,279	568,576	718,593	778,610

Source: North Carolina Department of Commerce, Triangle Employment Projections, Wake County Planning

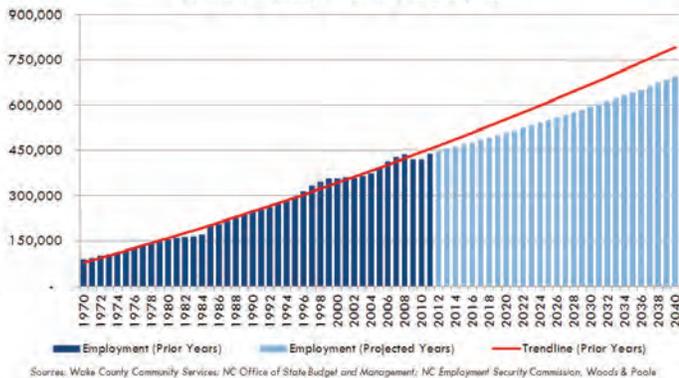
## Population Density



The employment estimates are the same as those used to make other transportation and infrastructure decisions. The graphs below show how the employment projections compare to our historic employment. The first graph illustrates that the employment projections in the Transit Plan are lower than the historical trend. The second graph shows how the percentage employment growth predicted compares to past growth rates.

Transit planning also can support economic development because people and businesses may want to be located next to transportation centers. Multi-modal centers built with businesses (offices, restaurants, retail) and housing (usually condos and apartments) provide employees, customers and tenants with amenities and a high level of access.

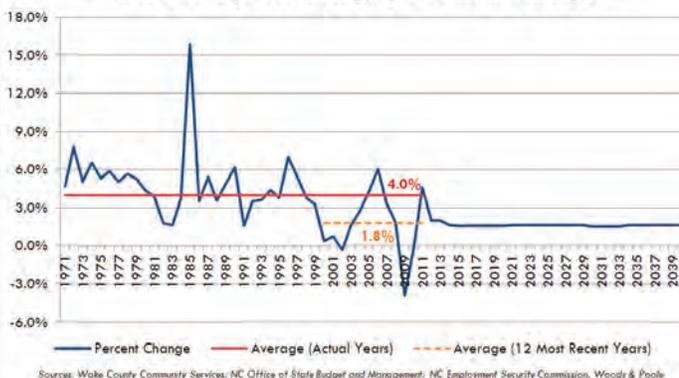
Wake County - Total Employed



## Congestion & Commuting

With increased population comes increased congestion. This has financial and emotional implications for businesses and individuals: businesses need travel time reliability for workers and for freight, and individuals and families must cope with frustration and time lost on a daily basis.

Wake County - Total Employed Percent Change



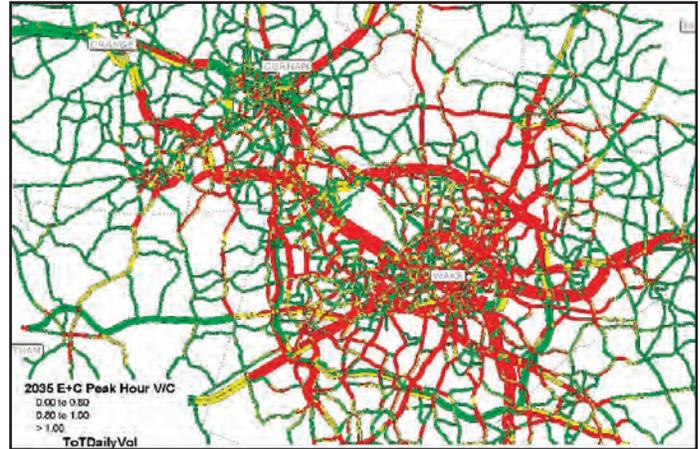
Triangle commuters are spending more time on the road, either because of more traffic or because they are driving farther to work and other activities.



According to US Census figures, our commutes are getting longer. From 1990 to 2000, the average commute time in the Raleigh-Durham-Chapel Hill metropolitan area increased 23 percent. The number of workers who were able to reach their jobs in 20 minutes or less declined, while at the same time, workers reporting one-way commutes of greater than 60 minutes increased. (Source: STAC Report, May 2008)



2005 Congestion



2035 Congestion

The 2005 “base year” map above shows levels of congestion during the afternoon rush hour (the heaviest travel period of the day). Congestion is calculated using a “volume to capacity ratio,” and red indicates areas of higher congestion.

The 2035 map shows the same type of information, but for the population and job levels forecast at that time. It includes all the new road and transit facilities included in the adopted CAMPO 2035 Long-Range Transportation Plan. Congestion is forecast to exceed the levels in the 2005 base year. (Maps provided by CAMPO.)

Congestion and commuting also have financial implications. It is expensive to purchase, insure, maintain and operate a car or truck, and is becoming more so as gas prices rise and remain high.

Transit provides an alternative solution to the increasingly congested roadway network, which is unlikely to improve as travel demand will outpace road construction.

While no transit system can relieve a highly populated area of traffic problems, it can give commuters more choices about how to get places, and gives them choices about using their driving time differently or more productively.

## Additional Benefits of Transit

As outlined above, transit supports economic development, provides alternatives to congestion and serves the existing and growing transit user base.

The STAC report of May 2008 set out the following additional benefits of transit, noting that a multi-modal web of transportation options including expanded regional bus service, city circulators, express routes and rail service to our downtowns, universities and medical centers would provide:

- Practical alternatives for low-income households, the elderly and other households without autos to meet their daily travel needs.
- Reduced risks to the economy and to households when faced with future fuel cost or supply variability.
- Wider use of walking and bicycling as practical modes of travel, bringing health benefits.
- Reduced need to construct or expand major roadways.
- Opportunities for redevelopment and infill development that can increase the overall tax base while providing a greater range of housing types and business sites in highly accessible locations in transit-oriented developments.

(Source: STAC Regional Transit Vision Plan, p. 21)

## HOW WE GOT HERE

Many pieces of this transit puzzle have been in the works for years. Various studies, planning efforts and analyses have been conducted on the local (county), regional (three counties) and statewide levels.

### The Players

The Wake County Transit Plan, which includes bus and rail elements, was developed by Wake County leaders and the staff of municipalities and transportation planning organizations, including:

- Wake County
- Wake County’s Municipalities: Apex, Cary, Fuquay-Varina, Garner, Holly Springs, Knightdale, Morrisville, Raleigh, Rolesville, Wake Forest, Wendell and Zebulon
- Capital Area Metropolitan Planning Organization (CAMPO)
- Regional Transportation Alliance (RTA)
- Triangle Transit

#### Who Does What?

Entity	Who’s In It	What It Does
Wake County Government	Board of Commissioners	Must approve Transit Plan; places transportation sales tax referendum on ballot. Authorizes \$7 increase in vehicle registration fees.
Municipal Government	Mayors and other elected officials (council members, commissioners)	Serve as partners in approving the transit plan and its governance, and supporting the funding mechanisms and transit-oriented development.
Triangle Transit Special Tax Authority	Two commissioners each from Wake, Durham and Orange counties	Consider enacting sales tax if approved by voters.
Capital Area Metropolitan Planning Organization (CAMPO)	Municipal and county elected officials and regional and state transportation partners	In cooperation with NC Department of Transportation, determines regional transportation priorities for the DOT planning region that includes Wake County and parts of four surrounding counties (Franklin, Granville, Harnett and Johnston). Must approve Transit Plan.
Triangle Transit	Board of Trustees	Responsible for regional transit planning and operation of regional bus and shuttle service, paratransit services, ride matching, vanpools, provides commuter resources, and an emergency ride home program for the Raleigh-Durham-Chapel Hill area including Apex, Cary, Chapel Hill, Durham, Garner, Hillsborough, Knightdale, RDU International Airport, Raleigh, The Research Triangle Park, Wendell, Wake Forest and Zebulon. Authorizes \$3 increase in vehicle registration fees.
Regional Transportation Alliance (RTA)	RTA Leadership Team including each Chamber of Commerce in Wake County	Founded by the Cary, Chapel Hill-Carrboro, Durham, and Raleigh chambers, is a regional program of the Greater Raleigh Chamber of Commerce that serves as the recognized regional business voice for transportation initiatives and policy across the Triangle. Focuses on advancing multimodal strategic solutions that will decrease the area’s commuting times, expand mobility options, improve shipping efficiency, and attract and retain top business talent.

## The Process

Briefly, here are the myriad steps taken over the past several years in the process that has produced the Wake County Transit Plan, followed by more in-depth explanations about each step. The committee and commission meetings were open to the public, and the plans invited public comment and involvement along the way.

1. **2006:** Blue Ribbon Committee on the Future of Wake County meets to examine infrastructure needs to meet growth over the next 25 years and recommend ways to pay for them. One of the Committee’s study areas is transportation (mobility choices).
2. **2007:** The 21st Century Transportation Committee studies the transportation infrastructure needs of the state and makes recommendations about funding, which become the basis for legislation giving local governments the authority to use sales tax revenue to fund transportation needs, with voter approval.
3. **2007–08:** Special Transit Advisory Commission (STAC) meets to create a new vision for transit and funding framework in Wake, Orange and Durham counties. Key findings include use of buses, circulators and light rail, with primary funding source a half-cent sales tax.
4. **2008–09:** CAMPO develops long-range transportation plan that addresses regional transit and highway plans.
5. **2009:** General Assembly passes and the governor signs into law legislation that authorizes urban counties to use sales tax, vehicle registration fees and a localized property tax (in the Research Triangle Park) to fund transportation needs, if certain conditions are met.
6. **2010–11:** Triangle Transit conducts a transitional analysis and then an alternatives analysis to examine and recommend the best corridors for light and commuter rail in Wake, Durham and Orange counties.
7. **2010–11:** CAMPO and partners produce bus transit development plan for the CAMPO region, which recommends enhancing the existing bus service system. Each county (Wake, Durham and Orange) develops its own bus service plans that consider transit connections to the rail corridors and service beyond the corridors throughout the individual counties.

**choose  
how you move**



You live in North Raleigh and work in RTP. To get there:  
**Now:** Drive.  
**Transit Plan Options:**

1. Walk or bike to bus stop, connect to regional express bus to regional transit center, take shuttle bus to work, or
2. Drive to park-and-ride, connect to regional express bus to regional transit center, take shuttle bus to work, or
3. Drive.

The bus and rail plans are then to serve as a comprehensive transit plan for the region.

8. **2010–11:** Wake County meets with elected officials and staff in all 12 municipalities to discuss their needs and interests, and ensure they are incorporated in the Wake County Transit Plan.

### Blue Ribbon Committee

In 2006, the Blue Ribbon Committee on the Future of Wake County (BRC) spent six months examining plans to meet the County’s growth over the next 25 years, and recommended how to best pay for those. The committee of 65 business and community leaders was established by Wake County Commissioners, the Greater Raleigh Chamber of Commerce and the Wake County Mayors’ Association.

Transportation, or mobility choices, was one area studied by the BRC. Among the group’s recommendations were to:

- Increase transportation-related user fees (e.g., motor fuels tax, vehicle registration fees, highway use tax).
- Increase sales tax by one-half percent (1/2 percent) for local transportation improvements (roads and transit).
- Coordinate land-use planning and transit investments to promote higher densities in high priority transit corridors.

### Special Transit Advisory Commission (STAC)

The Special Transit Advisory Commission (STAC) is a broad-based citizen group with 38 members from across the Research Triangle Region. The STAC was appointed by CAMPO and DCHC to assist in the joint development of a plan for a regional transit system and to craft recommendations for the transit component of their respective Long-Range Transportation Plans, with a focus on major transit investments.

The STAC met in 2007-08 to create a new vision for transit and a funding framework. The STAC examined the economic, demographic, environmental and social forces that affect transportation in the region, and considered how transit might interact to promote greater mobility and prosperity, stronger communities and higher quality communities. With these benefits

in mind, STAC crafted a number of goals for a regional transit vision plan that serve as a foundation for Wake County’s transit plan.

Some of STAC’s goals for a Regional Transit Vision Plan were to:

- Create a regional transit system that is multi-modal, seamless and interconnected with multiple transit choices for people and commerce.
- Encourage sustainable land use, ranging from compact, mixed-use, walkable and bike-friendly development to allowing for and preserving open space, trails, farmland, and historic, culturally valuable and environmentally sensitive areas.
- Create a regional transit system that reduces air pollution... and our dependence on foreign oil and consumption of fossil fuels.
- Encourage economic development and reduce travel time and make it more productive.
- Improve access to existing and future employment, services, leisure, health, education, cultural and natural resources for everyone, including the mobility impaired and economically disadvantaged.

STAC recommended three major categories of investments: Enhanced region-wide bus network, circulators and rail.

### NC 21st Century Transportation Committee— Statewide Approach

The 21st Century Transportation Committee was established by the General Assembly in 2007 to study the transportation infrastructure needs of the state. The Committee was charged with reporting on several issues, including some that affect local governments in urban areas, such as Wake County. The Committee’s charges were wide ranging, with the following items pertinent to local interests:

1. Local funding options for transportation.
2. Ways to adequately fund road construction to address urban congestion and to improve mobility.
3. The appropriate division of responsibility for transportation infrastructure between state and local government and any federal role in providing transportation infrastructure needs.
4. A review of public transportation needs in urban areas.

The 21st Century Transportation Committee members traveled to several cities across the state in 2007 and 2008, including Raleigh,



Asheville, Charlotte and Wilmington, to gain information on transportation issues facing North Carolina as well as potential mobility solutions.

### Capital Area Metropolitan Planning Organization (CAMPO)

CAMPO developed a Long-Range Transportation Plan (LRTP) that is required by federal law and covers a 25-year planning horizon. Transit alternatives represent approximately 28 percent, or \$2.1 billion, of the LRTP cost. (CAMPO is currently updating its LRTP as required, but has committed to retaining all projects in the Wake County Transit Plan in its updates.)

The LRTP focuses on roads and includes more than 200 road projects and more than 1,500 lane miles of new or widened roads, and assumes that money will be available to complete I-540 and other key roads.

It also emphasizes transit and alternatives, such as express lanes, rail and bicycle lane improvements. The LRTP also includes more

than 300 miles of bicycle improvements, assumes funding for a rail connection from Raleigh to Durham and assumes funding for 21 miles of HOV/express lanes.

### Triangle Transit (Alternatives Analysis for Rail)

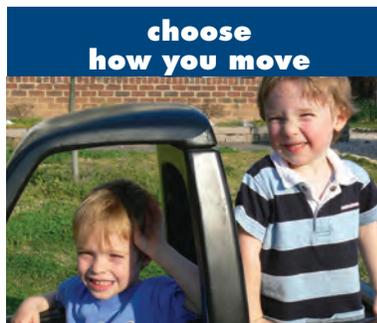
Triangle Transit is governed by a 12-member Board of Trustees. It is responsible for regional transit planning in the Triangle and operates regional bus and shuttle service, paratransit services, ride matching, vanpools and an emergency ride home program for the Raleigh-Durham-Chapel Hill area including Apex, Cary, Chapel Hill, Durham, Garner, Hillsborough, Knightdale, RDU International Airport, Raleigh, Research Triangle Park, Wendell, Wake Forest and Zebulon.

Triangle Transit’s mission is to improve the region’s quality of life by connecting people and places with reliable, safe, and easy-to-use travel choices that reduce congestion and energy use, save money, and promote sustainability, healthier lifestyles, and a more environmentally responsible community. Triangle Transit also works with cities, counties, Metropolitan Planning Organizations and other interested parties in examining transportation corridors, considering land use, economic activity, population patterns, and connections among these three elements and transportation.

Triangle Transit conducted an Alternatives Analysis for future rail investment in Wake, Durham and Orange counties, examining multiple rail corridors both within individual counties and across county borders.

Both commuter rail, using existing or expanded freight tracks, and light rail transit technologies were considered.

The Alternatives Analysis focused on specific rail corridors that were adopted in CAMPO’s LRTP. Each county is developing its own bus service plans to merge into a comprehensive transit plan that will be put before voters to seek approval on dedicating a half-cent sales tax to funding the transit program. Each county must conduct its own referendum.



You live in Wake Forest and want to visit your grandchildren in Holly Springs. To get there:

**Now:** Drive.

**Transit Plan Options:**

1. Drive to park-and-ride, connect to commuter bus to downtown Raleigh, take express bus to Holly Springs, or
2. Drive.

Visit these web sites for more information on the bus and rail plans:

CAMPO—<http://www.raleighnc.gov/services/content/PWksTransit/Articles/ShortRangeTransitPlan.html>

Commuter Rail:

[www.ourtransitfuture.org/index.php/projects/durham-wake/](http://www.ourtransitfuture.org/index.php/projects/durham-wake/)

Light Rail:

[www.ourtransitfuture.org/index.php/projects/wake/](http://www.ourtransitfuture.org/index.php/projects/wake/)

### The Legislation

House Bill 148/Senate Bill 151, which provides transportation funding mechanisms for urban counties, was signed into law on August 27, 2009. Called an act to establish a “Congestion Relief and Intermodal Transportation 21st Century Fund,” the legislation:

- Authorizes 1/2-cent (one-half cent) sales tax in Wake County and other urban counties with voter approval by referendum. (This tax excludes food, medicine, utilities and housing.)
- Authorizes a regional vehicle registration fee increase from \$5 to \$8, with a resolution by the Wake County Board of Commissioners and action by the Triangle Transit Board of Trustees.
- Authorizes a county vehicle registration fee of up to \$7, with Wake County Board of Commissioners action.
- Authorizes the Research Triangle Park to charge a property tax for public transportation projects (10 cents per \$100).
- Requires that each county approve a “financial plan” prior to holding a referendum.
- States that each county sales tax referendum is independent of the referendum results in other counties.

### The Making of the Wake County Transit Plan

The Wake County Transit Plan is a collaborative effort between Wake County, Triangle Transit, CAMPO, City of Raleigh/Capital Area Transit (CAT), Town of Cary C-Tran, North Carolina State University Wolfline and all municipalities in Wake County. The plan is derived from two detailed engineering studies conducted by consulting firms accomplished in the field of bus and rail transit.

The bus element of the Wake County Transit Plan presents a framework for long-range transit service and capital improvements aimed at improving mobility options for the Capital Area region. In September 2010, CAMPO and CAT engaged HDR Engineering, Inc., of the Carolinas (HDR) and its sub-consultants to complete the Capital Area Bus Transit Development Plan for service in the CAMPO jurisdiction.

The study prepared existing demographic, land use and travel pattern analyses to describe the market for transit in the study area. The analysis also generated data regarding ridership propensity, transit-supportive density, passenger boarding and alighting count, ridership survey, relationship to proposed rail investments and travel patterns to help recommend areas for new or improved bus service. Detailed analysis and findings on the proposed bus services can be found in the Capital Area Bus Transit Development Plan dated October 2011. The major findings and recommendations of the plan are summarized as part of the proposed transit services here in the Wake County Transit Plan.

The plan's purpose is to develop a bus system with increased services for the CAMPO region that complements the separately

prepared long-range rail plans. (See **Appendices B and C** for bus service details.)

The rail elements of the Wake County Transit Plan were first identified in the 2035 Long-Range Transportation Plan (LRTP) adopted by the Durham-Chapel Hill-Carrboro and Capital Area Metropolitan Planning Organizations in April 2009. The LRTP identified corridors for major investments in fixed guideway transit over the next 30 years.

In early 2010, Triangle Transit engaged the transportation consulting team of URS and its consultants to conduct an alternatives analysis process to prioritize transit corridors for further study. In order to identify the most appropriate initial investment for each corridor, a broad range of transit technology and alignment alternatives were examined through the conceptual evaluation of alternatives. Detailed analysis and findings on the proposed commuter rail and light rail services can be found in the Alternatives Analysis report dated July 5011. The major findings and recommendations of the report are summarized as part of the proposed transit services here in the Wake County Transit Plan.



## EXISTING TRANSIT SERVICES

### Overview

Transit services today are provided by different agencies that have evolved to serve needs within their respective municipality or area of the county.



### Capital Area Transit (CAT)

The largest transit operator today is Capital Area Transit, known as CAT. CAT was originally formed to provide service in the City of Raleigh, and the majority of its current routes still operate within City limits. CAT buses have the highest ridership of any municipal system in Wake County and most of the services provided are designated as local routes.

CAT's existing local funding comes mostly from the citizens and businesses of Raleigh through a city-wide vehicle registration fee and property taxes. The City Council of Raleigh is the governing body for CAT. Decisions about CAT's routing and service are directed through an appointed citizen board, the Raleigh Transit Authority, prior to review by the City Council. CAT owns its vehicles, stations, and maintenance facility but contracts with a private company to hire drivers and operate service.

Through service demand and a contract with Triangle Transit, CAT services also extend into Garner, Wake Forest, Knightdale, Wendell and Zebulon. Having CAT provide service was found to be the most cost-effective solution because of the location of CAT's maintenance facility in East Raleigh. CAT also contracts with the Town of Wake Forest to provide the Town's existing local bus circulator that connects residential areas, downtown Wake Forest, municipal facilities and retail areas.

### Cary Area Transit (C-Tran)

The newest transit operator today is Cary Area Transit, known as C-Tran. C-Tran was formed in 2005 to provide service in the Town of Cary. The majority of its current routes operate within town limits. As a new system, C-Tran's buses have a lower but growing number of riders and most of the services provided are designated as local routes.

C-Tran's existing local funding comes mostly from the registration fee and property taxes. The Town Council of Cary is the governing body for C-Tran. C-Tran owns its stations and stops but contracts with a private company to provide vehicles, hire drivers and operate service.

Through service demand and a contract with Triangle Transit, C-Tran service has been extended into Raleigh. Having C-Tran provide service was found to be the most cost-effective solution because of the location of C-Tran's maintenance facility in Cary.

### Triangle Transit

Triangle Transit was established in 1995 to provide transit connections in the Research Triangle Region. The majority of Triangle Transit's existing routes are commuter routes. Triangle Transit currently provides transit service to and from Apex, Cary, Chapel Hill, Durham, Garner, Knightdale, Raleigh, Wake Forest, Wendell and Zebulon.

Triangle Transit's existing local funding comes from citizens and businesses of Wake, Durham and Orange counties, and from visitors through a regional vehicle registration fee and tax on rental cars. The Triangle Transit Board of Trustees is the governing body for Triangle Transit. The Board of Trustees is made up of appointed members from Durham, Orange and Wake counties, the cities of Durham and Raleigh, and the towns of Cary and Chapel Hill. Triangle Transit owns its stations and vehicles and its drivers are Triangle Transit employees. Triangle Transit's main facility is located in the Research Triangle Park just west of Morrisville.

### North Carolina State University Wolfline

NC State Transit, known as Wolfline, was formed to meet the needs of NC State students and provide circulation around the

NC State area. The majority of Wofline’s service provides access between the different parts of campus and connects to parking areas. Wofline’s existing local funding comes mostly from a fee paid by all students. The NC State Board of Trustees is the governing body for Wofline. Wofline owns its stations and vehicles but contracts with a private company to hire drivers and operate service.

### Americans with Disabilities Act (ADA) Requirements and Serving Special Needs Populations

Federal regulations require transit agencies to guarantee service to the residences and businesses within 3/4 mile of fixed local route transit line. This guarantee means special accommodation needs to be offered for citizens with true needs. Both the City of Raleigh (ART) and the Town of Cary (C-Van) operate services to meet this requirement. Parallel state and federal programs provide funds to ensure that citizens can get to needed medical services and access food and other necessities. Services contracted by Wake County Human Services (TRACS) and provided by Triangle Transit (T-Linx) have been developed to serve these needs and expand service County- and region-wide.

Because these trips are specialized the cost per rider tends to be higher and only a portion of the costs are covered by user fees. To keep costs as low as possible the providers look for ways to link like trips together and coordinate services.

### Unserved Areas

The communities of Fuquay-Varina, Holly Springs and Rolesville do not have bus service. Many of Triangle Transit’s buses provide access to an area of the Town of Morrisville, but the Town would prefer to see connections to a more central area of its community.

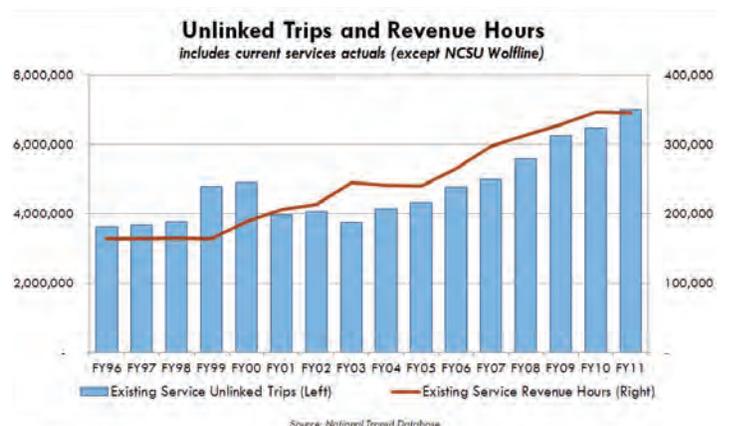
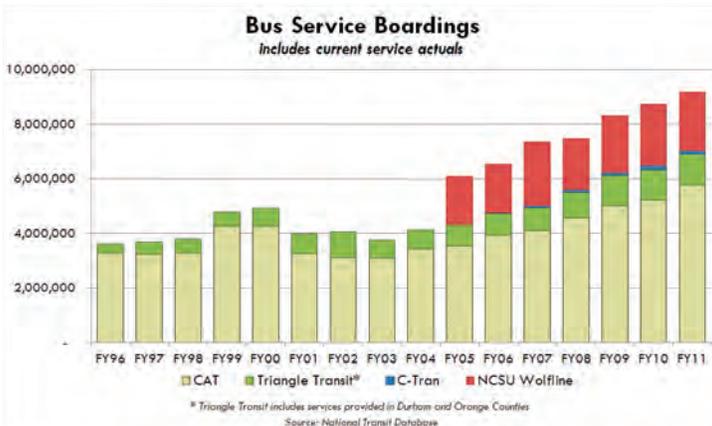
### System-Wide Ridership

Each of the transit providers is required to report annually into the National Transit Database. Based on these reports the number of unlinked trips (one-way trips) on the existing bus network is at record levels. Although many factors affect why people make trips, overall population increases, roadway congestion and rising gas prices are likely among them.

### Projecting and Predicting Ridership

Surveys of existing riders and non-riders were conducted as part of the planning process for the Wake County Transit Plan. These surveys identified market demands that were not being met by the existing system. This includes a demand for service in unserved and underserved areas, for more frequent service, for faster routes, for connections to major destinations and for increased operating hours. The results of the surveys did not come as a surprise to the transit providers who have been expanding service and adding revenue hours over the past 4–5 years to meet this demand and have seen ridership increase as a result. CAT, C-Tran, Triangle Transit, and Wofline provide about 350,000 bus service hours annually. (As point of reference about 3,000 hours represents one local bus running all day, all year.) This service level is the highest ever provided in the County. The chart below, detailing CAT, C-Tran and Triangle Transit Service (Wofline is not shown since ridership is specialized), shows that there is a relationship between the number of trips and the service level.

Because the elements of the plan were developed to address existing deficiencies and meet the service demand, it is anticipated that the addition of new services will see a similar relationship to ridership as previous service increases. This relationship is also similar to those seen nationally with similar sized transit systems.



## Continuing Existing Service into the Future

A core principle of the Wake County Transit Plan is that new services will build from and augment existing services. To make this possible, the services themselves (or similar services) and the existing funding for the services must continue. With the Transit Plan, the existing providers are expected to fund only the cost of existing services and some inflation associated with those services. If the plan were not enacted, the existing providers would be expected to fund the cost of existing services plus all inflation, as well as new services. So although the expectation of future funding with the Transit Plan is significant, it is actually less than expectations today. (See The Financial Model section of this Plan for a detailed summary of the funding required to continue existing services.)

The Wake County Transit Plan relies on the following factors to ensure that existing services will continue:

- 1) The Plan relies on continued contributions only from the existing service providers, including: The City of Raleigh, the Town of Cary and Triangle Transit.
- 2) Each of these transit providers uses dedicated tax sources (in some cases supplemented with discretionary funds) to at least partially fund transit. These tax sources can and will likely grow with inflation, population and employment.
- 3) Both Raleigh and Cary started their transit systems independently and have shown multiple-year commitments to funding.
- 4) Transit expenditures for Raleigh and Cary currently represent less than 3 percent of each municipality's annual budget.

## Transit Terms

The transit industry uses specific terms to define service. Some of these are shared with transportation planning overall while others are specific to transit.

### Service Time

- **Peak** (also sometimes designated as AM Peak and PM Peak): The period typically from 7 to 9 a.m. and 4 to 7 p.m. This is when the most number of trips are made, and usually are round trips that people make regularly, such as to and from work or school.
- **Off-peak:** All other hours during the service period, including early morning, midday and evening. Although a smaller number of trips are made during these times, these trips are equally valuable and can include things like doctor's appointments, shopping, movies or other entertainment, and trips to work for employees who work other than 8 a.m. to 5 p.m.
- **Non-service hours:** Transit does not run during these hours, typically from 9 p.m. to 5 a.m. Although fewer trips occur during this time frame, riders needing to get home or to

work during this time would either have no service options or very limited service options.

### Service Descriptions

- **Local:** These services typically travel on local roads and make frequent stops, their goal being to provide access along a specific corridor or route. These services operate all day.
- **Local Circulators:** These services typically travel on local roads and make frequent stops, with the goal of providing access to different parts of a specific area or community. These services operate all day.
- **Local Express:** These services typically travel on local roads but make limited stops, with the goal of providing connections between major destinations and attractions. These services operate during peak periods.
- **Commuter:** These services typically travel on higher speed roadways and make limited stops, with the purpose of providing connections between communities. These services operate during peak periods.

## Goals for Future Service:

*More Bus Service to More Places, More Often*



# PROPOSED TRANSIT SERVICES: Bus and Commuter Rail

## Overview

As proposed, transit services would expand to unserved areas, and increase to add more services that run more frequently. Physical improvements would be made, such as adding bus shelters, stations, benches and sidewalks. Technology would be used to keep riders up-to-date on the status of vehicles. Finally, an entirely new service—commuter rail—would be introduced, providing a different option for employees to get to work.



## Service Expansion

The Wake County Transit Plan is intended to link cities and towns, particularly those currently without service. Service would expand to serve the towns of Fuquay-Varina, Holly Springs and Rolesville, as well as unincorporated portions of Wake County.

Wake’s municipalities will be linked in the short term, using local buses and commuter buses in the next five years, and commuter rail in about eight years.

## Increased Service

Service would expand in Apex, Cary, Garner, Knightdale, Morrisville, Raleigh, Wake Forest, Wendell and Zebulon.

More frequent service would have buses running every 15-30 minutes during rush hour (currently, buses run about every 30-60 minutes during rush hour). Service also would expand to add evening and weekend hours on selected routes.

The current bus system, which includes CAT, C-Tran and Triangle Transit, provides about 350,000 bus service hours. That would nearly double by adding another 320,000 service hours in the first five years, creating more choices for citizens all around Wake County.

## Capital Improvements

The Plan commits resources to construct the physical structures needed to support operations and make it easier for passengers to find, wait for and ride transit. These capital items include new vehicles, shelters, benches, stations, and other structures, sidewalks and signage. The plan also includes investments for bus lanes or priority signalization for buses that will increase speeds and reduce the number of stops as well investing in rail improvements for commuter rail. (See **Appendices A and D** for capital projects related to bus and commuter rail.)

## New Technology

Technology applications such as satellite tracking of vehicles will allow for real-time schedule information through the Internet and cell phones, allowing riders more convenience and better planning capabilities. (Note: Triangle Transit already has some infrastructure associated with the new technology so not all of the technology will require up-front costs.)

## New Type of Service

The plan specifically calls for commuter rail for several reasons. First, the use of the rail line provides a service that is not dependent on the highway network and can therefore travel the same speed regardless of traffic incidents. Second, the proposed system can be implemented relatively quickly and cost effectively. Additionally, the implementation of commuter rail signals the area’s readiness to seek new solutions for a given need or problem.

## BUS SERVICES



## Local Service Increases

The Wake County local bus network is designed to connect people to important destinations and specific routes and corridors. The listed routes operate all day. The map on the next page shows the local bus routes proposed. (See **Appendix B** for more details.)

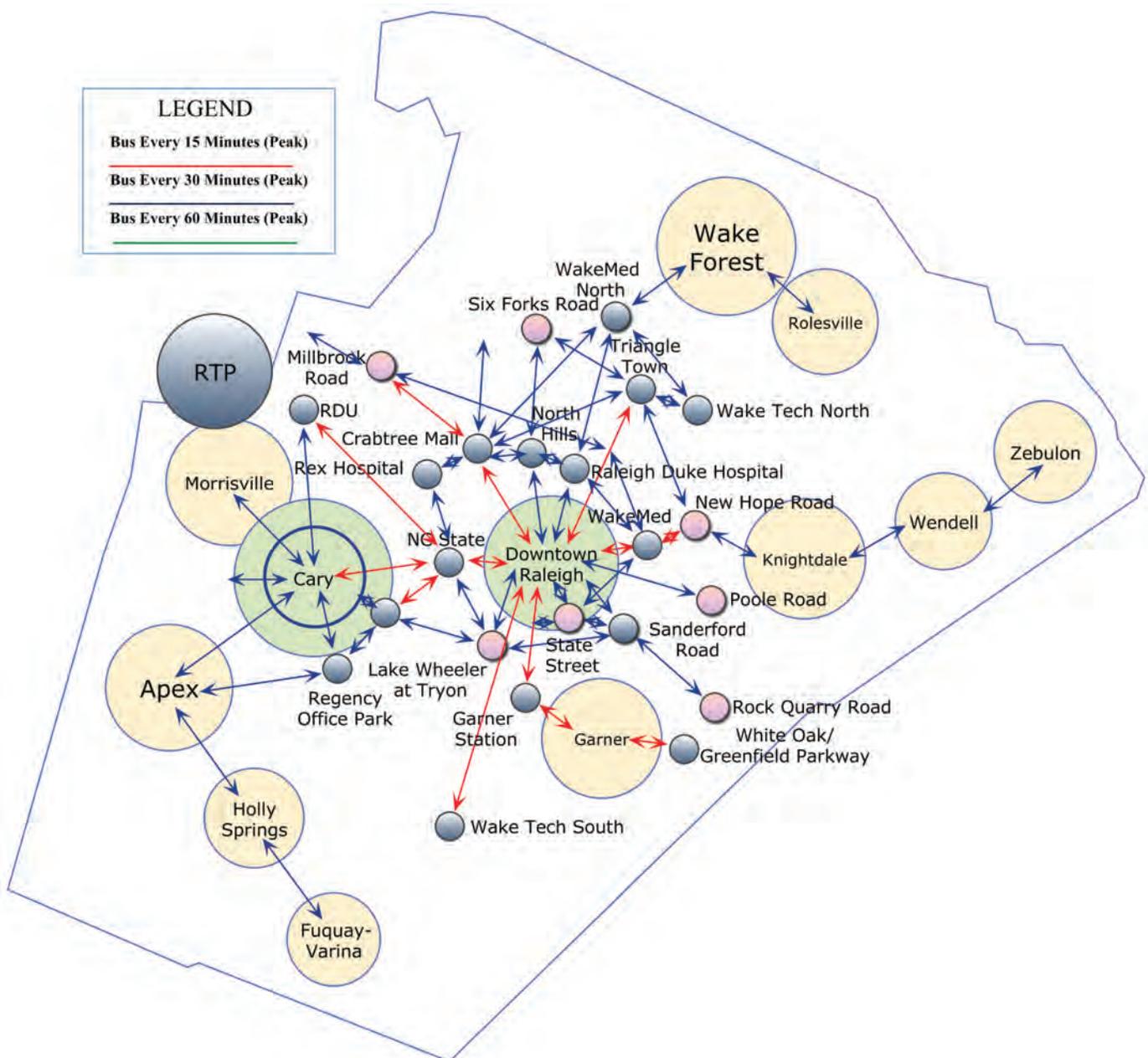
### Extended Services

The bus elements of the plan call for many of the existing local bus routes in the area to be extended past municipal boundaries to the most logical endpoint. These endpoints include major commercial or business areas like Regency Park (Cary), White Oak (Garner), or Triangle Town Center, or municipal centers like Wendell or Morrisville. These connections provide a dual benefit by linking passengers to important destinations and by creating logical locations for transit routes to meet.

### Local Circulator Services

The bus elements of the plan call for bus circulators to be added in several communities, modeled after the successful existing service in the Town of Wake Forest. Circulator services are intended to provide all-day service to connect important generators and attractors within a specific area or community. The frequency of service will start at the system standard (every 30 minutes peak and 60 minutes off peak), but may be increased in future years based on demand.

## Proposed Local Services



### Connection to the Airport

The expanded transit services propose to provide three connections to the Raleigh-Durham International Airport. The first route will expand the service that is in place today running from downtown Raleigh through NC State to the airport. A second route would extend a route in Cary from downtown Cary via Harrison Avenue to the airport. The third route would connect from Triangle Town Center in northeast Raleigh via I-540 to the airport. Each of these routes will run frequently and link with other routes (see **Appendix B** for more details). These routes will be modified when commuter rail service is implemented.

### Serving the Major Corridors Today

The bus elements of the plan incorporate the concept of providing transit service as soon as possible to support development choices and provide a high level of access. The plan proposes high

frequency bus service in the corridors where rail is proposed and in the corridors where it may be considered in the future.

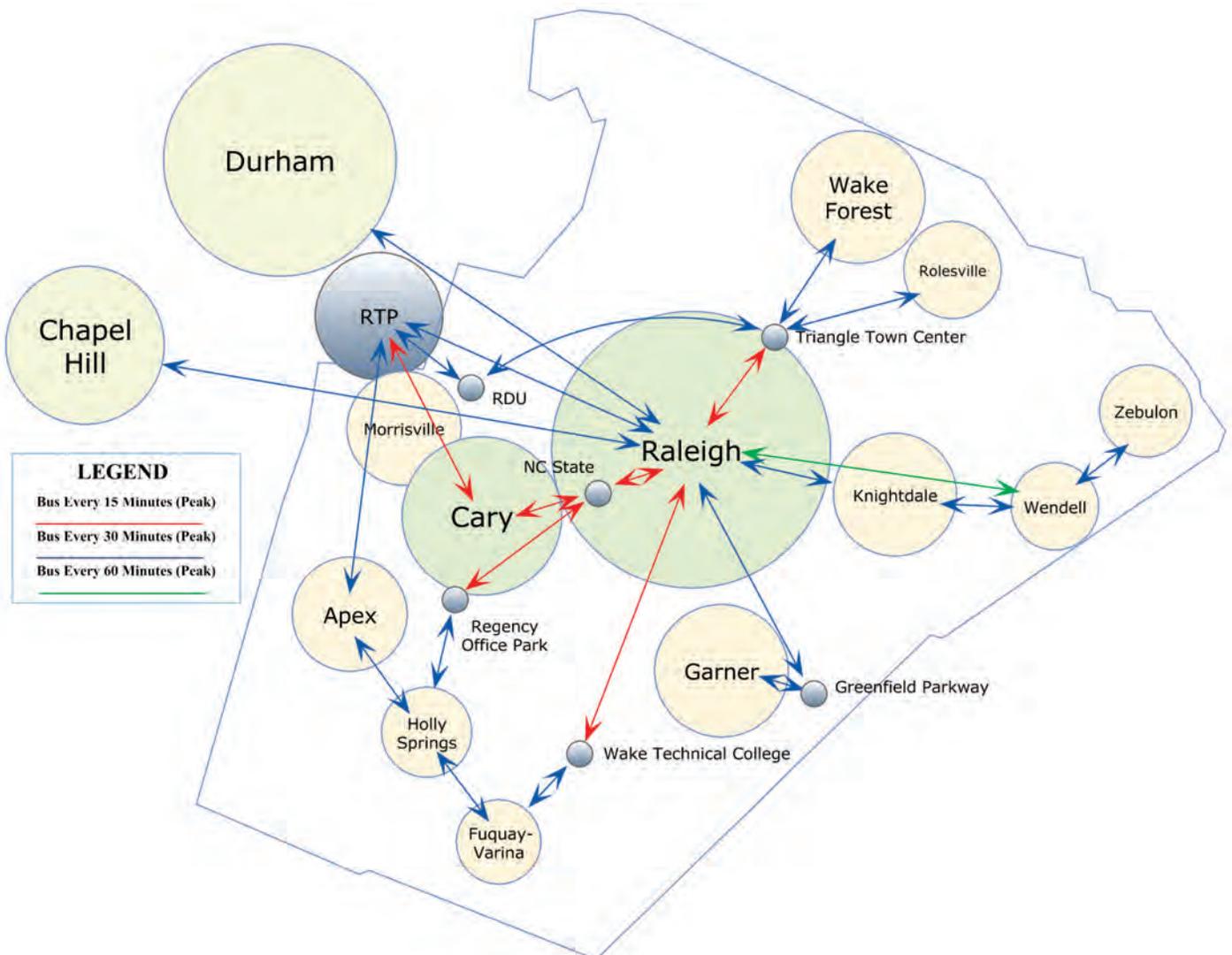
### Rail Coordination

The bus routes proposed will be designed to connect with passenger rail services as effectively as possible.

### Commuter Bus Service Increases

The Wake County commuter bus network is designed to connect people to jobs, especially those traveling longer distances. This service operates primarily as a point-to-point service, with few intermediate stops between the origin park-and-ride lot and the major employment destination, and operates during peak hours only. The map below shows the commuter bus routes proposed. (See **Appendix C** for more details.)

**Commuter Transit Routes**



### Connect All Communities

The plan proposes to connect a bus commuter service line to each municipality. These services will provide access for employees and others to jobs and businesses from across the county. This network will support the existing development centers within the county.

New and Increased Commuter Bus Service	
	Frequency, Morning & Afternoons
Downtown Raleigh to Durham	Every 30 minutes
Downtown Raleigh to Research Triangle Park	Every 30 minutes
Downtown Raleigh to NC State and Downtown Cary	Every 30 minutes
Raleigh/Cary to Research Triangle Park	Every 15 minutes
Triangle Town Center to Research Triangle Park	Every 30 minutes
Wake Forest to Triangle Town Center	Every 30 minutes
Rolesville to Triangle Town Center	Every 30 minutes
Knightdale to Downtown Raleigh	Every 30 minutes
Zebulon to Wendell to Downtown Raleigh	Every 60 minutes
Greenfield Parkway (Garner) to Downtown Raleigh	Every 30 minutes
Garner to Downtown Raleigh	Every 15 minutes
Fuquay-Varina to Downtown Raleigh	Every 30 minutes
Wake Tech Main Campus to Downtown Raleigh	Every 15 minutes
Holly Springs to NC State and Downtown Raleigh	Every 30 minutes
Regency Park to NC State & Downtown Raleigh	Every 15 minutes
Holly Springs to Research Triangle Park	Every 60 minutes
Apex and Cary to Research Triangle Park	Every 30 minutes

### Provide a Competitive Product

Transit users will not be expected, able or willing to wait an hour for the next bus. The Transit Plan calls for commuter services to run frequently during peak hours. At some locations this means a bus will leave every 15 minutes.

### How the Bus Components of the Plan Were Developed

In September 2010, CAMPO and CAT engaged HDR Engineering, Inc., of the Carolinas (HDR) and its sub-consultants to complete the Capital Area Bus Transit Development Plan for service in the CAMPO jurisdiction. The study prepared existing demographic, land use and travel pattern analyses to describe the market for transit in the study area. The analysis also generated data regarding ridership propensity, transit-supportive density, passenger boarding and alighting counts, ridership survey, relationship to proposed rail investments, and travel patterns to help recommend areas for new or improved bus service.

The travel analysis looked countywide at area characteristics including;

- population density
- percentage of households without cars
- percentage of persons with mobility limitations
- percentage of persons with work disabilities
- percentage of persons who were not White, non-Hispanic
- percentage of recent immigrants
- percentage of low-income households
- percentage of persons in the work force age 65 or older
- percentage of persons in the workforce age 30 or younger

### Bus Service Improvement Costs

The capital costs and operating costs for the bus plan are about \$329 million, with the local share of that at \$139 million.

Bus System Costs					
First Five Years (FY14-18)*	TOTAL	Non-Local Share	Local Share	Non-Local	Local
Capital Costs	\$284,797,000	\$185,118,000	\$99,679,000	65.00%	35.00%
Operating Costs**	\$43,988,000	\$4,399,000	\$39,589,000	10.00%	90.00%
<b>Total</b>	<b>\$328,785,000</b>	<b>\$189,517,000</b>	<b>\$139,268,000</b>	<b>—</b>	<b>—</b>

\*All dollars are FY10

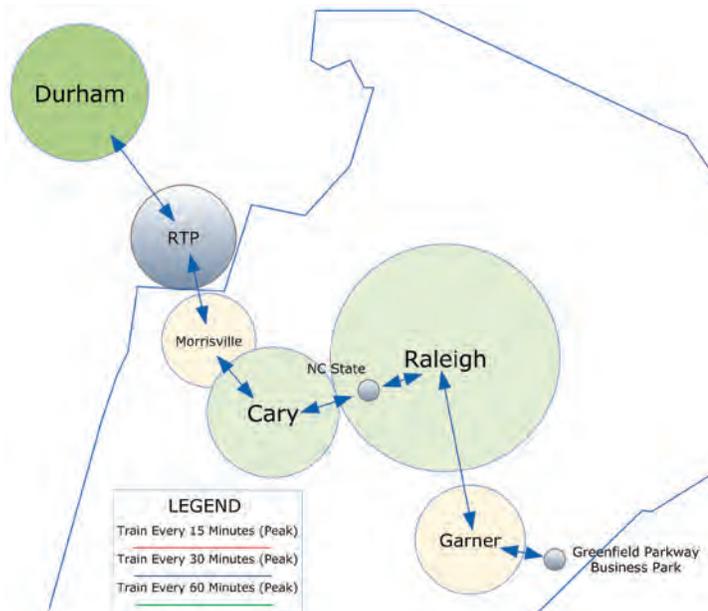
\*\*Does not include Rural Transit Services (i.e., Wake TRACS) or current service operating assistance provided through County Vehicle Registration Revenues

## COMMUTER RAIL



### Commuter Rail Services

The recommended commuter rail service is intended to connect employees with major employment centers in Wake and Durham counties. The proposed service would follow major employment corridors that are already busy and continuing to develop. The proximity of the major employers and the ability to have bi-directional travel (i.e., passengers going from Raleigh to Durham/RTP and passengers going from Durham to Raleigh/RTP) makes it the best, most practical place to start with commuter rail in our area. (For a discussion of the capital costs associated with commuter rail and how these investments may link to a future commuter rail network, see **Appendix D.**)



### Proposed Service

This recommended commuter rail service would operate within the existing NCRR Railroad right-of-way from West Durham to Garner, covering 37 miles and operating every 30 minutes during peak hours and every 60 minutes off peak. Travel time is estimated to be 52 minutes. For more details on the proposed commuter rail service see **Appendix E.**

### Stations

A total of 12 station locations are proposed for the commuter rail service:

- Greenfield Parkway
- Garner
- Hammond Road/Rush Street
- Downtown Raleigh
- NC State University
- West Raleigh
- Downtown Cary
- McCrimmon Parkway
- South RTP
- North RTP
- Downtown Durham
- West Durham

### New Commuter Rail Service

	Frequency, Morning & Afternoons*
Downtown Raleigh to Durham	Every 30 minutes
Greenfield Parkway (Garner) to Downtown Raleigh	Every 30 minutes
Downtown Raleigh to NC State	Every 30 minutes
NC State to Downtown Cary	Every 30 minutes
Downtown Cary to Morrisville	Every 30 minutes
Morrisville to the Research Triangle Park	Every 30 minutes
The Research Triangle Park to Durham (by Durham County)	Every 30 minutes

\* AM and PM peaks are 6–8 a.m. and 4–6 p.m., trains run every 30 min.; from 11:30 a.m.–1:30 p.m. and 8–10 p.m., trains run every 60 min.

## How the Commuter Rail Components of the Plan Were Developed

CAMPO's 2035 Long-Range Transportation Plan identified corridors for major investments in rail over the next 30 years. Through a Transitional Analysis, three priority corridors were selected in March 2010 for further consideration: the Durham-Orange Corridor, the Durham-Wake Corridor and the Wake Corridor.

Triangle Transit undertook a thorough analysis of rail alternatives, which included studying the most suitable alignments and subjecting them to extensive public scrutiny and feedback.

In general, the alternatives were evaluated based on seven evaluation criteria directly relating to the project goals:

- System Performance
- Destinations Served
- Transportation Operations and Access
- Public and Agency Support
- Potential to Support Redevelopment Efforts
- Environmental Impacts
- Cost

The recommended Locally Preferred Alternative (LPA) includes the preferred alignment, transit technology and station locations for the Wake Corridor.

### Commuter Rail Costs

The recommended commuter rail service from Garner to Durham totals \$650 million (2011 dollars), including capital elements like stations, park-and-ride lots and rail line:

- Wake County share: \$330 million (51 percent)
- Durham County share: \$320 million (49 percent)

Additionally, operating costs are estimated at \$11 million per year:

- Wake County share: \$7.5 million (68 percent)
- Durham County share: \$3.5 million (32 percent)

The reason that the proportional capital cost ratio is different from the operating cost ratio is because implementation of commuter rail service will require new passenger stations, purchase of rail

vehicles, track upgrades/improvements, bridges, signalization and a maintenance facility. Costs that can be shared between Wake and Durham (i.e., vehicles, maintenance facility) are distributed at approximately 68 percent Wake and 32 percent Durham based on anticipated boardings.

For other costs, such as double tracking, bridges and stations, the cost is allocated by county on the location of said improvements. As such, Wake County will not invest large sums of money generated in Wake County on projects in Durham County and Durham County will not spend in Wake. The majority of needed track improvements (mostly dual track) are located in Durham County, resulting in a total cost share that is approximately 49 percent Durham and 51 percent Wake.

### Timing of Commuter Rail

Commuter rail's strength is that it provides a cost-effective and time-consistent way to move employees to their jobs when a highway corridor becomes congested. It is cost-effective because it uses the same tracks as the freight rail lines. It is time consistent because it does not use the highway network; travel time is the same whether the highway is congested or not. Commuter rail's weakness is that users must board and depart a train at specific locations and at specific times.

Interstate 40 (I-40) in Wake and Durham counties is one of our area's most congested corridors. On some days, especially at rush hour or if there's an accident or vehicle breakdown, back-ups and travel time can both be lengthy. However, due to significant resources and efforts spent on modifying and expanding the Interstate to keep pace with demand over the years, traffic moves smoothly on many days. Additional steps can be taken—some very expensive, some not—to allow even more vehicles to use the roadway.

Commuter rail in the I-40 Corridor must “compete” directly with the Interstate for users. Although some may choose to take the train to avoid using their cars (these users have a bus option today), the majority of users will choose how to travel based on average time and convenience. The expected ridership numbers on the commuter rail system reflect this. To help ensure that the commuter rail line is successful when it begins service, the following triggers should be considered prior to implementation:

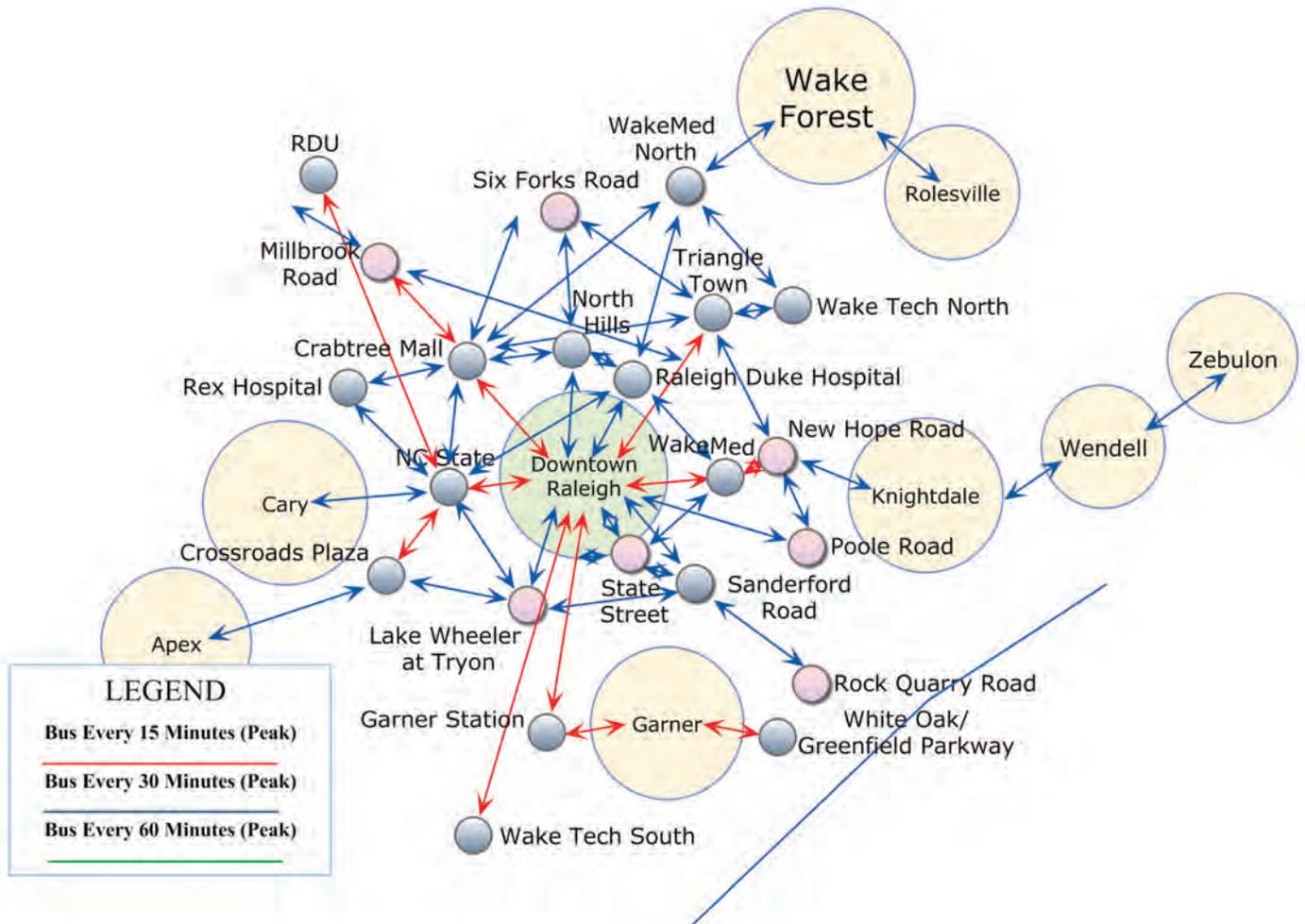
- 1) The latest Regional Transportation Model predicts that the average morning weekday commute time (peak) between Mile Marker 303 at Jones Sausage Road in Garner to Mile Marker 279-B and NC-147/Durham Expressway in Durham (24 miles) is greater than 35 minutes. The current model suggests this commute took an average of 22.9 minutes in 2010.
- 2) The total cost of the next significant vehicle capacity improvements to the Interstate are greater than 60 percent of the commuter rail costs (in current year dollars).
- 3) The representative governments at each commuter rail stop have committed to having established or establishing within five years an effective network for transporting employees to job sites.
- 4) The Wake County Transit Financial Plan predicts that revenues in the model, using current assumptions, will allow the commuter rail to be constructed without affecting other priority projects.



# CORE TRANSIT PLAN: Recommendations by Municipality

## Raleigh

In the Core Transit Plan, Raleigh will receive expanded bus services and commuter rail.



### New and Increased Raleigh Area Bus Routes

*(Includes the Apex, Garner, Knightdale, Rolesville, Wake Forest, Wendell and Zebulon communities)*

Capital Boulevard to Triangle Town Center	All Day Service, 15 Minute Peak Frequency
Falls of Neuse Road to Duke Medical and WakeMed North	All Day Service, 15 Minute Peak Frequency
Glascocock Street to WakeMed	All Day Service, 30 Minute Peak Frequency
Hillsborough Street/NC State to Rex Hospital	All Day Service, 30 Minute Peak Frequency
Glenwood Avenue/Crabtree Valley Mall and Rex Hospital	All Day Service, 30 Minute Peak Frequency
Six Forks Road/North Hills to Strickland	All Day Service, 30 Minute Peak Frequency
Longview Road to WakeMed	All Day Service, 30 Minute Peak Frequency
Glenwood Avenue/Crabtree Valley Mall to Millbrook Road	All Day Service, 15 Minute Peak Frequency
Millbrook Road from Capital Boulevard to Glenwood Avenue	All Day Service, 30 Minute Peak Frequency

Downtown Raleigh/NC State to RDU	All Day Service, 15 Minute Peak Frequency
Glenwood Avenue north of Millbrook Road	All Day Service, 30 Minute Peak Frequency
Creedmoor/Edwards Mill from I-540 to Hillsborough Street	All Day Service, 30 Minute Peak Frequency
Durant Road/Strickland Road from Wake Tech North to Six Forks Rd	All Day Service, 30 Minute Peak Frequency
New Hope Road to Triangle Town Center	All Day Service, 30 Minute Peak Frequency
WakeMed to Crabtree Valley Mall	All Day Service, 30 Minute Peak Frequency
NC State via Atlantic Avenue to WakeMed North	All Day Service, 30 Minute Peak Frequency
Spring Forest Rd from Triangle Town Center to Crabtree Valley Mall	All Day Service, 30 Minute Peak Frequency
Wake Forest/Wakefield to Triangle Town Center	All Day Service, 30 Minute Peak Frequency
Rolesville/Wake Forest	All Day Service, 30 Minute Peak Frequency
Knightdale to New Hope Road	All Day Service, 30 Minute Peak Frequency
Wendell/Zebulon/Knightdale	All Day Service, 30 Minute Peak Frequency
New Bern Avenue/WakeMed to New Hope Road	All Day Service, 15 Minute Peak Frequency
Rock Quarry Road to Barwell Road	All Day Service, 30 Minute Peak Frequency
South Saunders/Garner Station to Downtown Garner	All Day Service, 15 Minute Peak Frequency
Avent Ferry/NC State to Crossroads Plaza	All Day Service, 15 Minute Peak Frequency
Blount Street and Martin Luther King Boulevard	All Day Service, 30 Minute Peak Frequency
Poole Road to New Hope Road	All Day Service, 30 Minute Peak Frequency
Martin Luther King Boulevard to WakeMed	All Day Service, 30 Minute Peak Frequency
Lake Wheeler Road to Tryon Road	All Day Service, 30 Minute Peak Frequency
State Street to Rock Quarry Road	All Day Service, 30 Minute Peak Frequency
Tryon Road from State Street to Hillsborough Street	All Day Service, 30 Minute Peak Frequency
Downtown Raleigh to Wake Tech Main Campus	All Day Service, 15 Minute Peak Frequency
Tryon Road—Downtown Raleigh to Downtown Apex	All Day Service, 30 Minute Peak Frequency
Hillsborough Street past NC State to Method Community	All Day Service, 30 Minute Peak Frequency
Moore Square/Hillsborough Street/Chatham Street/Cary	All Day Service, 30 Minute Peak Frequency
Knightdale to New Hope Road	All Day Service, 30 Minute Peak Frequency

**Raleigh Bus Transit Service—Local Routes**

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run at least every 30 minutes during weekday peak periods and at least 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Creedmoor Road to Hillsborough Street</li> <li>New Hope Road to Triangle Town Center</li> <li>Wake Med to Crabtree Valley Mall</li> <li>Atlantic Avenue Service</li> <li>Triangle Town Center to Crabtree Valley Mall</li> <li>Rock Quarry Road to Hillsborough Street</li> <li>Downtown Raleigh to Apex via Tryon Road</li> </ol>

**Raleigh Bus Transit Service—Local Routes**

New routes/extensions (future years)	<ol style="list-style-type: none"> <li>1. Brier Creek/RDU Area Circulator</li> <li>2. Raleigh Boulevard Service</li> <li>3. Sunnybrook Road Service to Garner</li> <li>4. Second R-Line Route</li> </ol>
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**Raleigh Bus Transit Service—Commuter Routes**

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>1. Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>2. Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>1. Connection from Triangle Town Center to RTP</li> <li>2. Connections to Apex, Holly Springs and Fuquay-Varina</li> </ol>

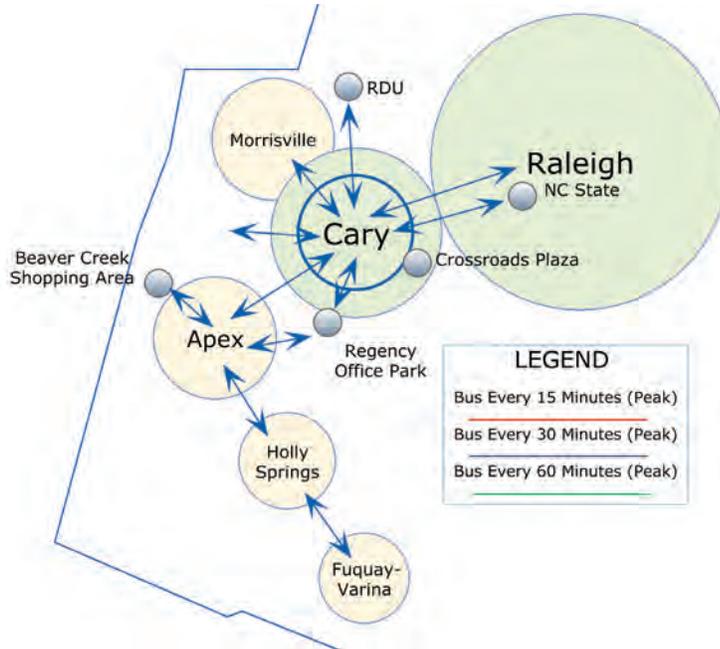
**Raleigh Capital Facilities and Vehicle Registration Fee**

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>1. Transit Centers: Crabtree Valley, Moore Square, WakeMed</li> <li>2. Transfer Points: Avent Ferry and Gorman, New Hope and New Bern, Wilmington Street, Cameron Village, Duke-Raleigh Medical, Sanderford and Rock Quarry</li> <li>3. Park-and-Ride Lots: Hillsborough and I-40</li> <li>4. Urban Transit Corridors: New Bern, Capital</li> <li>5. Commuter Bus Corridors: US 401 South, US1 North—Capital</li> </ol>
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Vehicle Registration Fee      Current Fee : \$35\*  
 Total Fee With Proposed Transit Plan: \$45 (\$10 dollar increase)  
 \*\$30 existing municipal fee (\$10 designated for Transit), \$5 existing regional transit fee

# Cary

In the Core Transit Plan, Cary will receive expanded bus services and commuter rail.



### New and Increased Cary Area Bus Routes

*(Includes the Apex, Fuquay-Varina and Holly Springs Communities)*

Maynard (Routes 1 and 2) to Cary Towne Center/Crossroads	All Day Service, 30 Minute Peak Frequency
Harrison Avenue to RDU (Route 3 extension)	All Day Service, 30 Minute Peak Frequency
High House Road	All Day Service, 30 Minute Peak Frequency
Cary Depot/Kildaire Farm Road/Regency Park to Apex	All Day Service, 30 Minute Peak Frequency
Buck Jones Road to NC State	All Day Service, 30 Minute Peak Frequency
Cary Depot/Lake Pine Road/Apex/Beaver Creek	All Day Service, 30 Minute Peak Frequency
Cary Depot/NC 54/Morrisville	All Day Service, 30 Minute Peak Frequency
Cary Depot/Chatham Street/Hillsborough Street/Downtown Raleigh	All Day Service, 30 Minute Peak Frequency
Fuquay-Varina/Holly Springs/Apex	All Day Service, 30 Minute Peak Frequency

**Cary Bus Transit Service—Local Routes**

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>1. Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>2. Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>1. Connection to RDU</li> <li>2. Connection to Morrisville</li> <li>3. Connections to Apex</li> <li>4. Connections to NC State</li> <li>5. Crossroads /Tryon Road Connection to Raleigh</li> </ol>
New routes/extensions (future years)	<ol style="list-style-type: none"> <li>1. Service along Airport Blvd and Morrisville- Carpenter</li> <li>2. Service along Louis Stephens Rd</li> <li>3. Service along Cary Parkway from SAS to Apex</li> <li>4. Extend Local Service to RTP</li> </ol>

**Cary Bus Transit Service—Commuter Routes**

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>1. Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>2. Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>1. Connection to RTP</li> <li>2. Connection to Raleigh</li> <li>3. Apex/Western Cary connection to RTP</li> <li>4. Regency connection to RTP</li> </ol>

**Cary Capital Facilities and Vehicle Registration Fee**

Capital Facilities (first 5 years)	<ol style="list-style-type: none"> <li>1. Transit centers: Crossroads, Cary Station</li> <li>2. Transfer points: Avent Ferry and Gorman</li> <li>3. Park-and-Ride lots: Regency Park, NC 540 and NC 55</li> <li>4. Western Bus Maintenance Facility</li> </ol>
Vehicle Registration Fee	<p>Current : \$20*</p> <p>Increase With Transit Plan: \$30</p> <p>*\$15 existing municipal fee (\$5 designated for Transit), \$5 existing regional transit fee</p>

## Morrisville

**In the Core Transit Plan, Morrisville will receive expanded bus services and commuter rail.**

### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connect from Morrisville to Cary along NC 54</li> </ol>
New routes/extensions (future years)	<ol style="list-style-type: none"> <li>Service along Airport Blvd and Morrisville-Carpenter</li> <li>Service along Louis Stevens Road</li> <li>Service along Cary Parkway from SAS to Apex</li> <li>Service connection to RTP</li> </ol>

### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connection to Triangle Town Center</li> <li>Connection to Downtown Raleigh</li> </ol>

### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>Transfer points: McCrimmon Parkway</li> <li>Transit Centers: RTP</li> </ol>
Vehicle Registration Fee	<p>Current Fee : \$15*</p> <p>Total Fee With Proposed Transit Plan: \$25 (\$10 dollar increase)</p> <p>*\$10 existing municipal fee, \$5 existing regional transit fee</p>

## Apex

### In the Core Transit Plan, Apex will receive expanded bus services.

#### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
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New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connection from Cary along Kildaire Farm Road</li> <li>Connection to Cary along Lake Pine Drive</li> <li>Connection to Holly Springs and Fuquay-Varina</li> <li>Connection to Raleigh along Tryon Road</li> </ol>
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New routes/extensions (future years)	<ol style="list-style-type: none"> <li>Service along Davis Drive and Louis Stevens Road</li> <li>Service along Salem Street and Cary Parkway to SAS</li> </ol>
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#### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
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New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connection to Research Triangle Park</li> <li>Connection from Regency Park to Downtown Raleigh</li> </ol>
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New routes/extensions (future years)	<ol style="list-style-type: none"> <li>Connection to Durham</li> </ol>
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#### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>Transit Center in Downtown Apex</li> <li>Park-and-Ride Lot at NC 540/NC 55 (Beaver Creek Commons)</li> <li>US 1 South Commuter Bus Corridor</li> </ol>
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Vehicle Registration Fee	<p>Current Fee : \$10*</p> <p>Total Fee With Proposed Transit Plan: \$20 (\$10 dollar increase)</p> <p>*\$5 existing municipal fee, \$5 existing regional transit fee</p>
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## Garner

**In the Core Transit Plan, Garner will receive expanded bus services and commuter rail.**

### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Extend CAT Route 7 to downtown Garner</li> </ol>
New routes/extensions (future years)	<ol style="list-style-type: none"> <li>Garner Road connection to downtown Garner and Raleigh</li> <li>Connection from Garner to WakeMed</li> </ol>

### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connection from White Oak/Greenfield Parkway to Raleigh</li> <li>Connection from Wake Tech Main Campus to Raleigh</li> </ol>

### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 5 years)	<ol style="list-style-type: none"> <li>Transfer points: Downtown Garner, Wilmington Street.</li> <li>Park-and-Ride lots: Greenfield Parkway</li> </ol>
Vehicle Registration Fee	<p>Current : \$20*</p> <p>Increase With Transit Plan: \$30</p> <p>*\$15 existing municipal fee, \$5 existing regional transit fee</p>

**choose  
how you move**



You live in Raleigh and work at Duke University. To get there:

**Now:** Drive.

**Transit Plan Options:**

1. Drive to park-and-ride, connect to regional express bus to Duke, or
2. Drive to park-and-ride, connect to commuter rail to Duke, or
3. Walk or bike to bus stop, connect to regional express bus to Duke, or
4. Walk or bike, connect to commuter rail to Duke, or
5. Drive.

## Fuquay-Varina

**In the Core Transit Plan, Fuquay-Varina will receive expanded bus services.**

### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>1. Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>2. Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extension (first 5 years)	<ol style="list-style-type: none"> <li>1. Circulator through Fuquay-Varina and Holly Springs</li> <li>2. Connection to Apex</li> </ol>

### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>1. Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>2. Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>1. Connection to Downtown Raleigh</li> <li>2. Connection to Research Triangle Park (via circulator to NC -540)</li> </ol>

### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>1. Transfer Point in Fuquay-Varina</li> <li>2. Park-and-Ride Lot near Wake Tech Main Campus</li> <li>3. US 401 South Commuter Bus Corridor</li> <li>4. South Saunders Street/US 401 South Urban Transit Corridor</li> </ol>
Vehicle Registration Fee	<p>Current Fee : \$10*</p> <p>Total Fee With Proposed Transit Plan: \$20 (\$10 dollar increase)</p> <p>*\$5 existing municipal fee, \$5 existing regional transit fee</p>

## Holly Springs

**In the Core Transit Plan, Holly Springs will receive expanded bus services.**

### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Circulator through Holly Springs and Fuquay-Varina</li> </ol>

### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connection to Downtown Raleigh</li> <li>Connection to RTP</li> </ol>

### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>Transfer Point in Holly Springs</li> <li>Park-and-Ride Lot at NC 55 and NC 540</li> <li>US 1 South Commuter Bus Corridor</li> </ol>
Vehicle Registration Fee	<p>Current Fee : \$15*</p> <p>Total Fee With Proposed Transit Plan: \$25 (\$10 dollar increase)</p> <p>*\$10 existing municipal fee, \$5 existing regional transit fee</p>

**choose  
how you move**



You live in Cary and work at NC State University.  
To get there:

**Now:** Drive

**Transit Plan Options:**

1. Drive to park-and-ride, connect to regional express bus to NC State, or
2. Drive to park-and-ride, connect to commuter rail to NC State, or
3. Walk or bike to bus stop, connect to regional bus to NC State, or
4. Take local bus to regional bus to NC State, or
5. Walk or bike to commuter rail, take train to NC State, or
6. Drive.

## Knightsdale

**In the Core Transit Plan, Knightsdale will receive expanded bus services.**

### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Circulator through from Knightsdale to Raleigh/New Hope Road</li> <li>Connection to Wendell and Zebulon</li> </ol>

### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connection to Downtown Raleigh</li> </ol>
New routes/extensions (future years)	<ol style="list-style-type: none"> <li>Connection to Zebulon—Five County Stadium</li> </ol>

### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>Transfer Point at New Hope and New Bern</li> <li>Park-and-Ride Lot in Knightsdale</li> <li>US 64 East Commuter Bus Corridor</li> </ol>
Vehicle Registration Fee	<p>Current Fee : \$20*</p> <p>Total Fee With Proposed Transit Plan: \$30 (\$10 dollar increase)</p> <p>*\$15 existing municipal fee, \$5 existing regional transit fee</p>

## Rolesville

**In the Core Transit Plan, Rolesville will receive expanded bus services.**

### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Circulator through Rolesville and Wake Forest</li> </ol>

### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connection to Downtown Raleigh</li> <li>Connection to RTP (via Triangle Town Center)</li> </ol>

### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>Transfer Point in Rolesville</li> <li>Park-and-Ride Lot at Capital and Burlington Mills</li> <li>Capital Boulevard Urban Transit Corridor</li> </ol>
Vehicle Registration Fee	<p>Current Fee : \$15*</p> <p>Total Fee With Proposed Transit Plan: \$25 (\$10 dollar increase)</p> <p>*\$10 existing municipal fee, \$5 existing regional transit fee</p>

**choose how you move**



Photo credit: Raleigh-Durham Airport Authority

You live in central Raleigh and want to go to the airport. To get there:

**Now:** Drive.

**Transit Plan Options:**

- Walk or bike to bus stop, connect to regional bus to RDU, or
- Take local bus, connect to regional bus to RDU Airport, or
- Drive to park & ride, and connect to regional bus to RDU, or
- Drive

## Wake Forest

**In the Core Transit Plan, Wake Forest will receive expanded bus services.**

### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Circulator through from Wake Forest to Wakefield/Triangle Town</li> <li>Connection to Rolesville</li> </ol>

### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connection to Downtown Raleigh</li> <li>Connection to RDU, RTP</li> </ol>

### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>Transfer Points: Wake Forest and Rolesville</li> <li>Park-and-Ride Lot at Capital and Burlington Mills</li> <li>Capital Boulevard Urban Transit Corridor</li> <li>US 1 North Commuter Bus Corridor</li> </ol>
Vehicle Registration Fee	<p>Current Fee : \$20*</p> <p>Total Fee With Proposed Transit Plan: \$30 (\$10 dollar increase)</p> <p>*\$15 existing municipal fee, \$5 existing regional transit fee</p>

## Wendell

**In the Core Transit Plan, Wendell will receive expanded bus services.**

### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Circulator through Wendell and Zebulon</li> <li>Connection to Knightdale</li> </ol>

### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extension (first 5 years)	<ol style="list-style-type: none"> <li>Connection to Downtown Raleigh</li> </ol>
New routes/extensions (future years)	<ol style="list-style-type: none"> <li>Connection to Zebulon—Five County Stadium</li> </ol>

### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>Transfer Point in Wendell</li> <li>Park-and-Ride Lot in Wendell Falls</li> <li>US 64 East Commuter Bus Corridor</li> </ol>
Vehicle Registration Fee	<p>Current Fee : \$10*</p> <p>Total Fee With Proposed Transit Plan: \$20 (\$10 dollar increase)</p> <p>*\$5 existing municipal fee, \$5 existing regional transit fee</p>



You live in Wendell or Zebulon and work at WakeMed. To get there:

**Now:** Drive.

**Transit Plan Options:**

1. Drive to park-and-ride, connect to regional express bus to WakeMed, or
2. Walk or bike to bus stop, connect to regional bus to WakeMed, or
3. Take local bus, connect to regional express bus to WakeMed, or
4. Drive.

## Zebulon

**In the Core Transit Plan, Zebulon will receive expanded bus services.**

### Bus Transit Service—Local Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Local routes will run every 30 minutes during weekday peak periods and 60 minutes during all other times</li> <li>Span-of-service on all local routes increases to at least 14 hours during weekdays</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Circulator through Zebulon and Wendell</li> <li>Connection to Knightdale</li> </ol>

### Bus Transit Service—Commuter Routes

Service enhancements (first 5 years)	<ol style="list-style-type: none"> <li>Commuter routes will run every 15/30 minutes during weekday peak periods offering midday service on a case-by-case basis.</li> <li>Span-of-service on all commuter routes increases to at least six (6) hours during weekdays.</li> </ol>
New routes/extensions (first 5 years)	<ol style="list-style-type: none"> <li>Connection to Downtown Raleigh</li> </ol>
New routes/extensions (future years)	<ol style="list-style-type: none"> <li>Connection to Zebulon—Five County Stadium</li> </ol>

### Capital Facilities and Vehicle Registration Fee

Capital Facilities (first 10 years)	<ol style="list-style-type: none"> <li>Transfer Point in Zebulon</li> <li>US 64 East Commuter Bus Corridor</li> </ol>
Vehicle Registration Fee	<p>Current Fee : \$10*</p> <p>Total Fee With Proposed Transit Plan: \$20 (\$10 dollar increase)</p> <p>*\$5 existing municipal fee, \$5 existing regional transit fee</p>

**choose  
how you move**



You live in Apex and are traveling to Charlotte. To get there:

**Now:**

- Drive.
- Take Amtrak from downtown Cary.

**Transit Plan Options:**

- Walk or bike to bus stop, take bus to downtown Cary, Amtrak to Charlotte, or
- Drive to downtown Cary, take Amtrak to Charlotte, or
- Drive



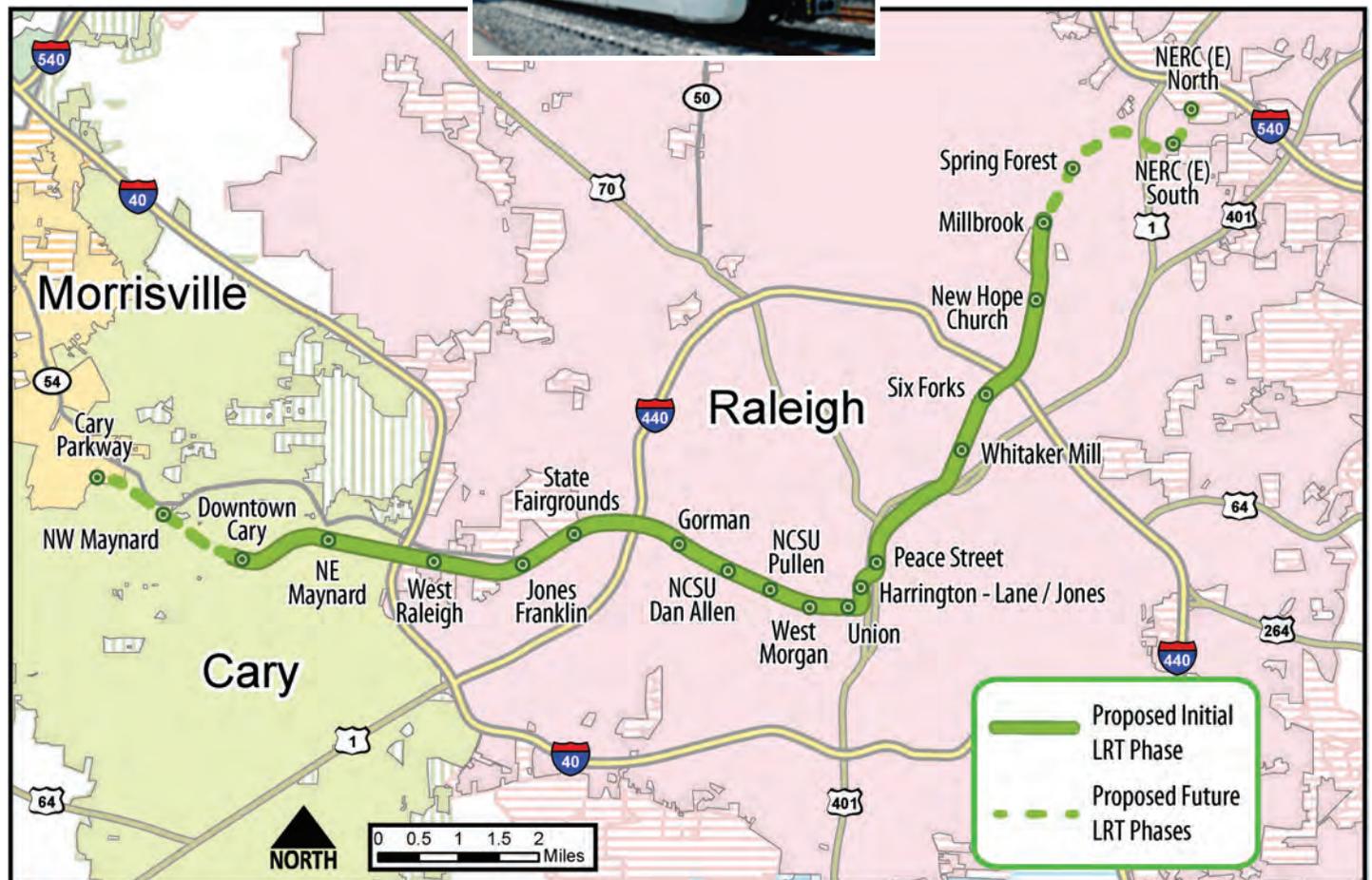
# ENHANCED TRANSIT PLAN: Light Rail

## Light Rail Transit—Cary/Raleigh (Millbrook Road)

The recommended first project of a future light rail network would be constructed between downtown Cary and north Raleigh. Building off previous studies that identified the best corridors to consider county-wide, recent studies identified this section as the best place to start. The corridor is expected to have a higher number of riders in the near term and future years, better serve existing low-income and minority communities, and connect better with future planned development areas. The proposal would construct track and operate electrically powered vehicles between downtown Cary and north Raleigh at Millbrook Road, covering 13.9 miles. The alignment of the proposed light rail would mostly follow the existing North Carolina Railroad tracks. The track would begin in Cary's central business district, just west of the existing train station and extend eastward into western Raleigh, south of

Hillsborough Street. The chosen alignment would then leave the railroad right-of-way and run along Morgan Street crossing St. Mary's Street, Boylan and Glenwood Avenues at grade as it enters downtown Raleigh. (For a more detailed description and map of this route, see Appendix F.)

Heading into downtown Raleigh, six alternatives were studied intensively, with stakeholder involvement and public workshops. The chosen alignment is along the Morgan Street Extension, crossing St. Mary's Street and entering downtown Raleigh on Morgan Street, crossing Boylan and Glenwood avenues. The train would cross West Street and turn north onto Harrington Street, crossing Hillsborough, Edenton, Jones and Lane streets before veering northeast in the vicinity of the Government Center to transition into the



CSX corridor, crossing over Capital Boulevard and continuing northeast across Peace Street.

From the bridge over Peace Street, the train would transition to an aerial structure to cross Capital Boulevard and parallel Atlantic Avenue before returning to grade at E. Whitaker Mill Road. It would continue north, following Atlantic Avenue, crossing New Hope Church Road and end at Millbrook Road.

### Light Rail Capacity and Stations

The proposed light rail would have a seating capacity of 152 (two cars with 76 seats per car), and would operate every 10 minutes during peak hours and 20 minutes off-peak. Travel time is estimated at 28 minutes between downtown Cary and Millbrook Road in Raleigh.

A total of 16 stations are proposed for this alternative. (See **Appendix F** for a list of stations.)

### Cost of Light Rail

Light rail is estimated at \$1.1 billion (2011 dollars) for:

- 13.9 miles constructed from downtown Cary to north Raleigh
- Capital elements include stations, park-and-ride lots, rail line

Operating cost for this segment is estimated at \$14 million/year.

### Station Selection Process

For both the commuter rail and light rail alternatives, station locations were developed through stakeholder involvement and parallel engineering and planning studies. Intensive workshops were held in October and December 2010 and January 2011.

Participants included staff from the municipal and county governments within the study area, as well as other organizations with an interest or responsibility for planning in those areas. On the light rail station locations, the public also provided input at the March 2011 public workshops.

## New Technologies and Future Transit Direction

### New Technologies

A lot of new ideas and technologies are currently emerging to more efficiently and effectively move people, as our country and those around the world try to determine what the future will offer. Our area is already adapting to these new tools and technologies in many ways. Examples include the “real time” traveler information systems available for our bus network as well as the hybrid diesel-electric and clean diesel engines in use on many vehicles. As smart phones, vehicle batteries, power distribution systems and automation continue to advance, they will likely provide options and possibilities not available today. This plan will continue to allow our area to appropriately align with evolving technology by:

- Scheduling and budgeting for the regular replacement of vehicles
- Requiring a reasonable relationship between funding and user benefit that will encourage flexible and creative solutions.

### Examples of New Technologies

Areas like North Hills, NC State, RDU and RTP are looking at evolving advanced circulation options like the PRT (Personal Rapid Transit) system in place at London’s Heathrow Airport to address area circulation needs.

The regional transit agencies are currently working with the NC Turnpike Authority to determine how commuter buses will use

the roadway. This could greatly reduce travel time especially in the western parts of the county.

### Future Transit Direction

Although this plan sets clear direction on three transit modes—bus, commuter rail and light rail, it does not detail all the corridors and areas where these modes may be effectively used in the future.

The plan also does not address possible circulation and access systems that, like the R-line in downtown Raleigh, developers, business groups and institutions may choose to operate to make their areas more competitive. To add more projects, likely after the currently proposed projects are underway, future decision-makers would need to update the plan.

The Wake County Corridor Map and the associated table highlight potential projects. Other projects, unknown at this time, may also be included. All future projects would need to be prioritized and considered for funding.

### Additional Services

#### Rural Wake County: The Places Between the Transit Lines

Wake County has significant areas that are not and may never be part of a municipality or a service center. Recent numbers suggest

### Examples of New Technologies



Areas like North Hills, NC State, RDU and RTP are looking at evolving advanced circulation options like the PRT (Personal Rapid Transit) system in place at London’s Heathrow Airport to address area circulation needs.



The regional transit agencies are currently working with the NC Turnpike Authority to determine how commuter buses will use the roadway. This could greatly reduce travel time especially in the western parts of the county.

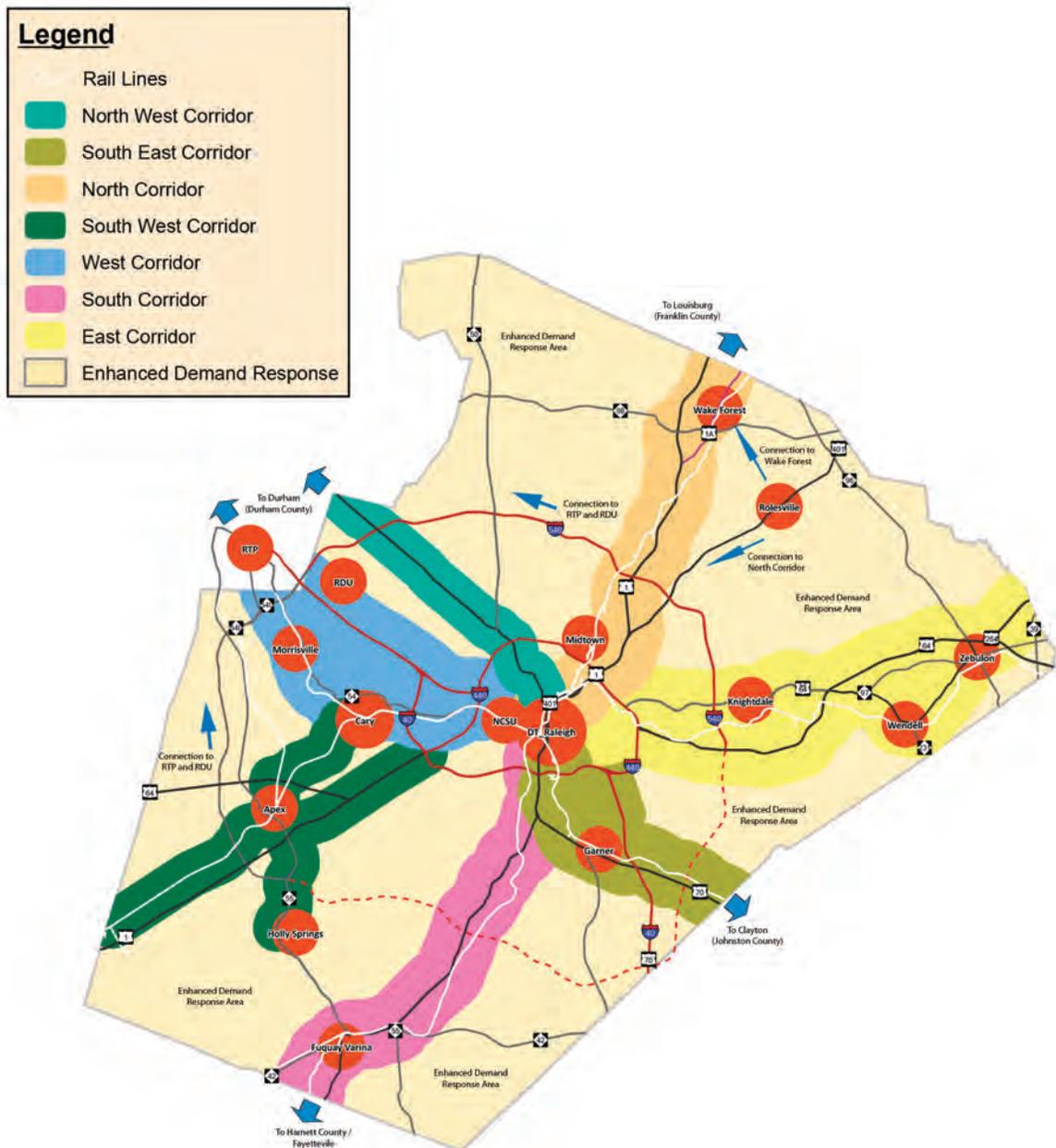
**Table of Potential Future Wake County Transit Investment**

<b>Corridor</b>	<b>Description</b>	<b>Potential Investment</b>	<b>Investment Completed/Programmed</b>
East Corridor	Connects between Downtown Raleigh, East Raleigh, Knightdale, Wendell and Zebulon. Includes US 64, New Bern Avenue, Poole Road, NC 97, US 64 Business and Norfolk Southern Rail Line	Upgrade and straighten Norfolk Southern Rail Line to allow faster travel speeds Street Car/BRT along New Bern Commuter Rail to Knightdale, Wendell, Zebulon	Knightdale Bypass (Complete) Wendell Falls Blvd/Interchange (2015) New Bern Avenue Urban Transit Corridor (2020) US 64 Commuter Bus Corridor (2020)
North Corridor	Connects between Downtown Raleigh, Midtown Raleigh, North Raleigh and Wake Forest. Provides connection to Rolesville. Includes Capital Blvd, US 1, Wake Forest Rd, Atlantic Ave and CSX Rail Line	Highspeed Rail Connection to Richmond, VA US 1 to Freeway Standards from I-540 to Wake Forest Light Rail Connection to I-540 Commuter Rail to Wake Forest	US 1 from I-540 to Durant to Freeway Standards (2020) Capital Boulevard Urban Transit Corridor (2020) US 1 Commuter Bus Corridor (2020) Wake Forest Urban Investment Corridor (2025) Light Rail Connection to Millbrook Rd (2025)
Northwest Corridor	Connects between Raleigh and North West Raleigh. Provides a connection to Durham. Includes US 70 and Glenwood Avenue		Glenwood Ave Resurfacing through Five Points (Complete) Access Management on US 70 (Complete/Ongoing) US 70 Widening from Millbrook to I-540 (2020)
South Corridor	Connects between Downtown Raleigh, South Raleigh, Garner and Fuquay-Varina. Includes US 401, South Saunders Street, Wilmington Steet and Norfolk Southern Rail Line	Upgrade and straighten Norfolk Southern Rail Line to allow faster travel speeds Passenger Rail Service to Fayetteville Commuter Rail to Fuquay-Varina	US 401 Commuter Bus Corridor (2020) US 401 Widening South of Fuquay-Varina (2025) South Saunders Street Urban Investment Corridor (2025)
Southeast Corridor	Connects between Downtown Raleigh, South Raleigh, and Garner. Provides a connection to Clayton. Includes US 70, I-40, Garner Road, Hammond Road and Carolina Railroad Company Rail Line	I-40/I-440 Widening Projects Commuter Rail Connection to Clayton	Clayton Bypass (Complete) I-40 East Commuter Bus Corridor (2020) Commuter Rail Connection to Garner (2025)
Southwest Corridor	Connects between Downtown Cary, South Cary, Apex and Holly Springs. Includes US 1, NC 55, old Apex Road, and CSX Rail Line	Upgrade and straighten CSX Rail Line to allow faster travel speeds Highspeed Rail Connection to Charleston, SC Commuter Rail to Apex	US 1 Widening from I-440 to US 64 (Complete) NC 540 to NC 55 in Holly Springs (2015) US 1 South Commuter Bus Corridor (2020)
West Corridor	Connects between Downtown Raleigh, West Raleigh, NC State, Cary and Morrisville. Provides connection to RDU, RTP and Durham. Includes I-40, NC 54, Wade Avenue, Western Blvd, and North Carolina Railroad Company Rail Line	I-40/I-440 Widening Projects I-40 High Occupancy Vehicle Lanes Light Rail Connection to Cary Parkway Light Rail Connection to Morrisville and RDU Light Rail Connection to RTP	I-40 Widening around Wade Ave Interchange (Complete) Bus on Shoulder Program (2015) Additional Passenger Trains to Charlotte (2015) Blue Ridge and Hillsborough Grade Separation (2020) I-440 Widening from Gorman to Rock Quarry (2020) I-440 Widening from Wade Ave to Crossroads Plaza (2020) Commuter Rail Connection to RTP and Durham (2025) Light Rail Connection to Downtown Cary (2025)

that as many as 185,000 people could live in these areas, but the population is very spread out. These areas consist of historic crossroads communities, rural neighborhoods, agricultural areas, and low-, medium- and high-income housing areas. Although it is not fiscally prudent to provide fixed bus routes in these areas, it is essential that these residents, especially those with special needs, benefit from this transit plan. This plan proposes to increase support for existing rural access programs and benefit rural residents in the following ways:

1. **Expanded Bus Services:** Many rural residents will benefit from the expanded fixed bus services because these services will go to more places with more frequency. The routes will expand into new areas of the County, especially in the southern, eastern and northern parts, and will likely connect with places where residents already go for jobs, goods and services. Isolated residents, such as seniors, persons with disabilities, or youth can link with friends, neighbors, or charitable organizations to reach the transit routes. The transit plan will provide additional resources to continue the cost-effective programs that link these residents together.

### Wake County Transit Corridors



2. **Access to Jobs:** Building on existing successful programs, the transit plan will provide additional resources to link rural job seekers with gainful employment. In many of these cases users will be charged a minimal fare to have a van connect them to the larger transit system or to employers. The goal of this program is to keep individuals employed and build their financial resources to the extent that they no longer need to be part of the program, so consistent and reliable service is essential.
3. **Access to Medical Trips:** Also building on existing successful programs, the transit plan will provide additional resources to link rural residents with medical needs with hospital and medical office visits. Studies show that supporting these patients in accessing medical services is much cheaper than the medical cost associated with care if they delay or miss treatment. Again, van service will be used, and because most visits are scheduled in advance, the van providers work with the medical offices and patients to cluster trips from different areas of the county to specific medical locations.
4. **Access to Food and Services:** Also building on existing successful programs, the transit plan will provide additional resources to link isolated rural residents to retail and service centers, again by using van services. As with the medical trips, because most visits can be scheduled in advance, the van providers work with the residents to cluster trips from different areas of the county to specific service/retail locations.
5. **Fill up the Vans:** Once the vans are in the rural areas to meet the demands of the other programs, the van provider will coordinate with residents to meet other needed or desired service trips. In these circumstances, rural residents would be charged a fare to connect to a community center or the larger transit network for any purpose. Typically these are users who cannot or choose not to drive and want to have access to services or meetings on additional days or at special times. The use of the vans may provide a feeling of more independence or flexibility for the user and benefits the transit system by making each van trip more efficient.



line. This guarantee means that if a physical impediment (like a missing sidewalk or steep grade) prevents a potential passenger from accessing a bus line, or the potential passenger has a disability that does not allow him or her to access a bus line, the transit system must make special accommodations to connect that passenger to destinations or into the larger transit system. The far-reaching scope of the proposed transit plan will increase the area that is within this 3/4-mile area.

The Wake County Transit Plan allocates the necessary resources to provide special accommodation along the existing and proposed transit routes and meets the intent of the Federal Americans with Disabilities Act by:

#### 1. Improving Streets, Stops and Sidewalks:

The plan provides resources to support and enhance existing programs to improve the streets, sidewalks and bus stops along all fixed bus lines. Although this can and should improve the transit experience for all passengers, it will specifically help passengers with a disability by greatly expanding the number of stops that can be accessed. This type of improvement is typically better for the passenger than special accommodation or services because it provides more flexibility and independence, and is typically better for the transit system because it provides long-term benefits for all passengers, has external benefits to the larger community, and allows special accommodations to focus in specific need areas.

2. **Improved Bus Frequency and Extended Routes:** The plan provides resources to appropriately boost the frequency of buses on the majority of the existing bus lines and establish new bus routes with an appropriate frequency. It also provides resources to extend routes to new areas and create logical connection points. These improvements will specifically help passengers with a disability by decreasing potential exposure to harsh weather, ensuring that the next bus will arrive within a reasonable time if the first one is missed, and expanding the places that can be accessed by the transit network. As noted above, this type of improvement tends to benefit both the passenger and the transit system as a whole.
3. **ADA Flexible Routes:** The plan provides resources for “on-demand flexible routing” of certain mainline routes, particularly in the smaller municipalities. In this system, when an ADA call is received, the bus has time to divert from its route to pick up the on-demand passenger and then return to its normal route. This type of improvement is typically better

## Special Programs Along Local Fixed Bus Lines (Americans with Disabilities Act Considerations)

Federal regulations require transit agencies to guarantee service to residences and businesses within 3/4 mile of a fixed transit



Photo credit: Raleigh-Durham Airport Authority

for passengers than special accommodation or services because it quickly gets them on the primary bus system that makes regular and familiar stops. It is typically better for the transit system because it limits the cost of running special vehicles, limits the number of regular stops the bus needs to make and allows special accommodations to focus in specific need areas.

**4. Improved Technology and New Buses:** The Transit Plan provides resources to support and enhance existing programs to regularly replace buses and invest in transit technology. These improvements will specifically help passengers with a disability by ensuring that all buses are low floor or “easy access” buses, ensuring that the ADA aspects of the buses are up to date, allowing passengers to have a clear idea of when the next bus will arrive and even by notifying potential passengers when they need to leave to meet the bus at its stop. Again, this type of improvement is typically better for the passenger than special accommodation or services because it provides more flexibility, options and independence, and it is better for the transit system because it provides benefits for all passengers, allows the system to run more efficiently, and allows special accommodations to focus in specific need areas.

**5. Access to Jobs, Medical Care, Food and Other Services:** As is the case for rural residents (above), the transit plan builds on existing resources to link employees to jobs, medical services, grocery stores and other retail and service centers. In these cases special accommodation will be provided and passengers will be charged a minimal fare to have a van connect them to the larger transit system or to employers, or to medical offices. Van drivers will work to cluster trips for efficiency.



# FINANCIAL MODEL

## Overview

The *Wake County Transit Plan* Financial Model (referred to as the “Model”) presents financial scenarios used when considering resource allocation and options. Generally, financial models assist policy decision-makers by summarizing prior years and forecasting future revenues and expenditures. The Model is based on a set of assumptions provided by the “Rail Corridor Alternatives Analyses” (URS), the “Minimum Operable Segment Evaluation” (for Light Rail, URS), the “Capital Area Bus Transit Development Plan” (HDR Engineering), comprehensive annual financial statements (Triangle Transit), transit officials, or government officials. The Model records prior years and forecasts likely scenarios using a cash flow format.

Visit these web sites for more information on the bus and rail plans:

CAMPO—<http://www.raleighnc.gov/services/content/PWksTransit/Articles/ShortRangeTransitPlan.html>

Commuter Rail:

[www.ourtransitfuture.org/index.php/projects/durham-wake/](http://www.ourtransitfuture.org/index.php/projects/durham-wake/)

Light Rail:

[www.ourtransitfuture.org/index.php/projects/wake/](http://www.ourtransitfuture.org/index.php/projects/wake/)

This Model uses information that is currently available to determine a combination of bus and rail projects that may be available through potential revenue sources. Over a period of time, assumptions evolve, information is modified and projections are updated to reflect actual results. Moving forward, it will be necessary to amend the Model to reflect these changes.

The Model provides two scenarios that increase transit choice opportunities. The scenarios include:

**Core Transit Plan:** Assuming no federal or state revenues will be available for new start rail projects, this plan includes increased bus service and the commuter rail segment assigned to Wake County (southern Research Triangle Park to Greenfield Station in Garner).

**Enhanced Transit Plan:** This plan includes all components of the Core Transit Plan but assumes significant federal and state participation is provided for new start rail projects. As such, light rail service is added from downtown Cary to Millbrook Road in north Raleigh.



Other than federal and state revenues for new rail projects and light rail segment expenditures, both plans use a similar set of Model assumptions. Key revenue and expenditure assumptions are described herein. *For more detailed information, Models supporting the Core Transit Plan and Enhanced Transit Plan are included in Appendix G.*

## Baseline—Existing Services

Prior to the addition of expanded or new services, it is necessary to establish a baseline service level. For the purposes of the Model, the baseline is current bus services provided by the City of Raleigh, Town of Cary, North Carolina State University’s Wolfline and Triangle Transit. In FY 2010, current service providers reported capital and operating expenditures of more than \$57.6 million dollars to the National Transit Database; however, a portion of Triangle Transit expenditures are in other counties such as Durham and Orange.

Existing bus services are projected to cost up to \$2.3 billion from FY 2013 to FY 2040. The projected cost assumes all current services and delivery methods continue as is, vehicles are routinely replaced and inflation rates are consistent with those used elsewhere in the Model.

To fund the future expenditures, the Model assumes that: 1) federal and state funding programs continue, 2) average fares and other revenues increase over time, keeping pace with inflation, and 3) municipal transfers from other funds (i.e., property taxes and existing vehicle registration revenues) provide the remaining balance.

Opportunities to control costs moving forward are necessary and the Wake County Transit Plan is not intended to alleviate service providers of this responsibility. Service providers continuously pursue strategies to control costs and increase efficiencies to minimize future expenditures. For example, the City of Raleigh

recently conducted a study (ADA Paratransit Service Alternatives Analysis for Accessible Raleigh Transportation) evaluating its \$7.3-million paratransit program. The Accessible Raleigh Transportation (ART) analysis identified specific strategies to become financially sustainable while meeting a growing demand for service.

Maintaining existing services also creates a “status quo” or “do-nothing” alternative. If the Core or Enhanced Transit Plans are not selected, Triangle Transit and each municipality will be responsible for maintaining current services and providing potentially new services. Municipalities that pursue transit services beyond the current baseline may opt to create their own transit service or contract with an existing service provider using municipal revenues (i.e., property taxes, vehicle registrations).

## Revenues

Revenues available to support increased transit mode choice opportunities include a ½-cent sales tax, vehicle registration fees, rental car taxes, farebox revenues, and federal and state contributions. Additional information regarding the revenues and assumptions are included in this section.

The timing of revenue collections assumes the following: 1) a November 2012 referendum is successful, 2) authorizing agencies (Wake County Board of Commissioners and Triangle Transit) approve all new or additional fees during December 2012, and 3) Triangle Transit initiates necessary processes with the State of North Carolina for the collection of new fees. The anticipated effective date for sales tax is April 1, 2013 (FY 2013) and is in line with financial plans in Durham and Orange Counties. For vehicle registrations, the anticipated effective date is July 1, 2013 (FY 2014). Any existing fee associated with increased transit services (i.e., vehicle rental taxes) is shown in FY 2013.

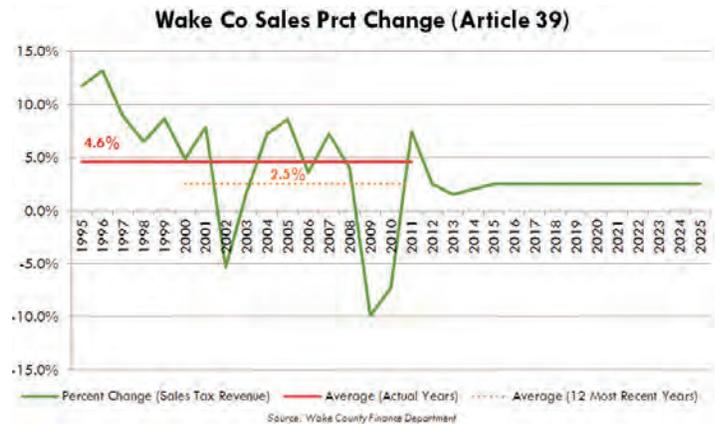
## Local Transit Sales Tax

If approved, the largest recurring revenue source for expanded public transit will be a ½-cent sales tax on goods purchased in Wake County (defined in North Carolina General Statutes §105–164.13B). The ½-cent Local Transit Sales Tax (Article 43) is most similar to the current one-cent sales tax (Article 39) in that funds are distributed based on point of delivery—meaning revenues are returned to the county or special district where taxable sales

occurred. Other distribution methods in North Carolina include per capita and point of delivery/per capita blended distributions.

Developing a sales tax assumption on previous years offers a challenge. Prior to FY 2007, all sales taxes collected in Wake County were allocated by the State of North Carolina on per capita and blended methods. Sales tax distributions in the purest form, using the point of delivery method, have a limited history. Other factors that impact the sales tax revenues include consumer behavior, population growth, income, employment and the frequency of sales tax refunds issued by the State of North Carolina.

Using actual Article 39 collections, Wake County was able to estimate a base revenue assumption for transit sales tax collections, assuming the tax existed, and forecast the percent revenue change in future years. For FY 2012, the estimated base revenue for transit sales tax revenues (Article 43) is \$54.81 million. For percent change, Article 39 collections averaged 4.6 percent from FY 1995 to FY 2011. Since FY 2000 fiscal years, the local economy was affected by two national recessions and the average percent change was 2.5 percent.



Wake County assumes a slow recovery due to the most recent recession and estimates that base revenues will increase by 1.5 percent in FY 2013 and grow by an additional 0.5 percent each fiscal year up to 2.5 percent in FY 2015. This assumption does not exceed the average percent change observed since FY 2000. The growth assumptions and projected revenues are summarized in the following table and apply to each transit plan (Core and Enhanced).

**Wake County Sales Tax Assumptions and Revenues**

Fiscal Year	Growth Assumption	Full Year Projection	Number of Collection Months	Projected Revenues
2011	—	53,473,719	—	—
2012	2.5%	54,810,562	—	—
2013	1.5%	55,632,720	3	13,908,180
2014	2.0%	56,745,375	12	56,745,375
2015	2.5%	58,164,009	12	58,164,009
2016	2.5%	59,618,109	12	59,618,109
2017	2.5%	61,108,562	12	61,108,562

Sales tax revenue growth assumptions in the Model are consistent with those used in other County financial planning models and presented to agencies that reaffirm the County’s AAA bond rating.

Other analyses were prepared by independent third parties projecting future sales tax growth assumptions for Wake County and the Triangle region. Two such analyses are included in **Appendix H**. The first analysis was prepared by Dr. Michael Walden at North Carolina State University in 2009 and develops a sales tax growth assumption using retail sales data for the region, national real gross domestic product, and the consumer price index. For Wake County, the Walden analysis forecasts a long-

term average sales tax growth of 4.2 percent in calendar years 2020 through 2035.

Dr. Karl Smith at the School of Government, University of North Carolina at Chapel Hill prepared the second analysis forecasting long-term sales tax revenue growth assumptions in the Triangle region. The analysis uses population growth forecasts, personal income and portion of income spent on goods applicable to the transit sales tax, and identified a growth assumption averaging 5.9 percent in future years.

**Vehicle Registrations**

The Model includes increases to vehicle registration fees. The fees apply to existing vehicle registrations that are renewed annually or for new vehicles registered in Wake County. First, Triangle Transit collects an existing fee of \$5 per registration that is used to support current transit activities. This fee will be increased by \$3, for a total of \$8, and is expected to generate an additional \$2.0 million annually (FY 11 dollars).

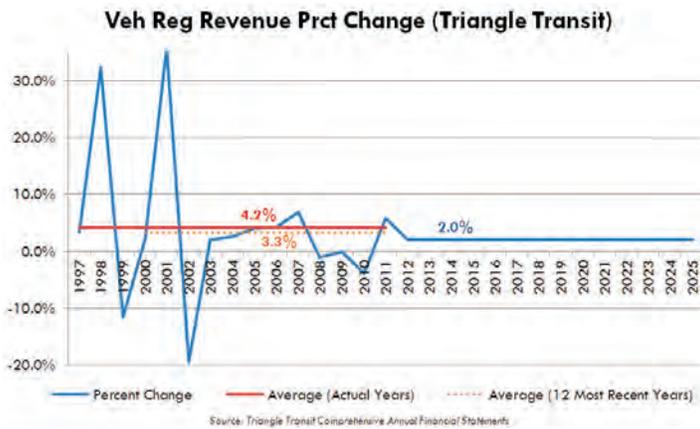
Second, a new \$7 fee will be affixed to each vehicle registration as allowed by North Carolina General Statute §105-570. The \$7 vehicle registration fee, levied by Wake County, is expected to generate \$4.7 million annually. Combined, the new/increased fees will total \$10 per vehicle registration, or \$6.7 million annually.

**Per Vehicle Registration Fees by Jurisdiction (in dollars)**

Jurisdiction	Current Municipal Fees	Existing Triangle Transit Fee	Subtotal, Current Fees	Increase Triangle Transit Fee	New Wake County Fee	Total Proposed Fees
Apex	5	5	10	3	7	20
Cary	15	5	20	3	7	30
Fuquay-Varina	5	5	10	3	7	20
Garner	15	5	20	3	7	30
Holly Springs	10	5	15	3	7	25
Knightdale	15	5	20	3	7	30
Morrisville	10	5	15	3	7	25
Raleigh	30	5	35	3	7	45
Rolesville	10	5	15	3	7	25
Wake Forest	15	5	20	3	7	30
Wendell	5	5	10	3	7	20
Zebulon	5	5	10	3	7	20
Angier	5	5	10	3	7	20
Unincorporated Wake County	—	5	5	3	7	15

Source: Wake County Revenue Department

Vehicle registration revenues apply to each transit plan (Core and Enhanced). Based on current registration information, the estimated base revenue is \$4.7 million for vehicle registration fees in FY 2011. The percent change year-to-year is 2-percent growth annually in all future years compared to a prior year history average of 4.2 percent or 3.3 percent in 12 most recent fiscal years. If approved, new vehicle registration revenues for transit will be collected by the State of North Carolina and remitted directly to Triangle Transit.



### Vehicle Rentals

Triangle Transit currently levies a 5-percent tax on vehicle rentals in Wake, Durham, and Orange counties. Triangle Transit’s Board of Directors has an existing policy that 50 percent of rental revenues are dedicated to expanding transit options in the region and has been used to fund past studies and analyses for this purpose. If the Wake County Transit Plan is implemented (along with other counties’ Transit Plans), Triangle Transit will distribute the 50 percent of the existing revenues to the participating counties. The other 50 percent is used by Triangle Transit for administration and operation.

To determine the amount allocated to each county, Triangle Transit dedicates vehicle rental revenues based on percent of total population, because a significant portion of all cars rented and driven in the region originate at the Raleigh-Durham International Airport. Also, it is difficult to determine which rentals are driven primarily in one county or another. The current percentages are 68 percent for Wake, 21.5 percent for Durham and 10.5 percent in Orange County. As such, the Wake County portion of the all vehicle rental revenues is, compared to the total collected, 34 percent.

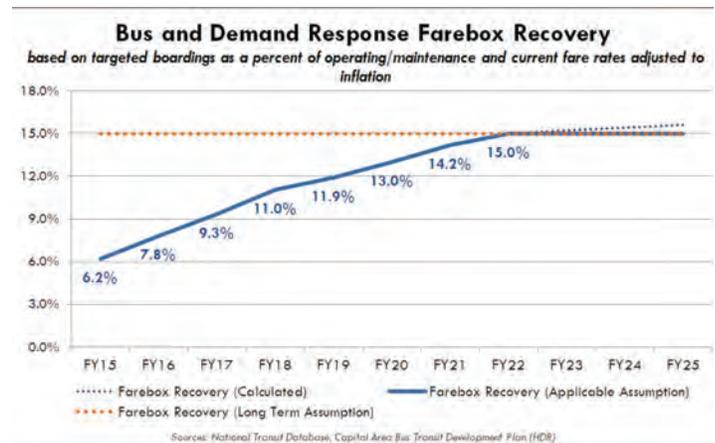
Vehicle rental taxes are an existing fee and revenues are remitted directly to Triangle Transit by rental companies. The estimated

base revenue is \$2.9 million in FY 2011 dollars. The year-to-year change assumes a one-percent growth annually in all future years.

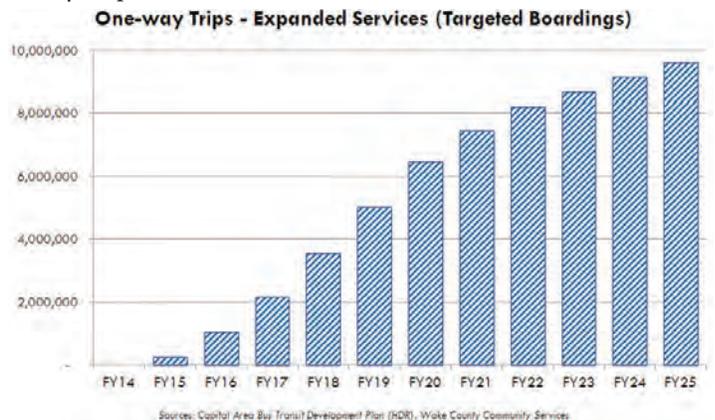
### Farebox Revenues

Following the completion of new and/or expanded transit projects, the transit mode will begin collecting passenger fares that offset operating and maintenance costs. Assumptions are expressed as a percentage of total operating costs of each transit mode and fare collected for each mode.

For bus services and demand response, the farebox recovery assumptions are 6.2 percent in FY 2015 and increase annually as increased bus services continue, to a maximum of 15 percent. To determine the percentages, Wake County considered the following factors: targeted ridership, the average fare per unlinked trip, and operating and maintenance estimates adjusted for inflation.

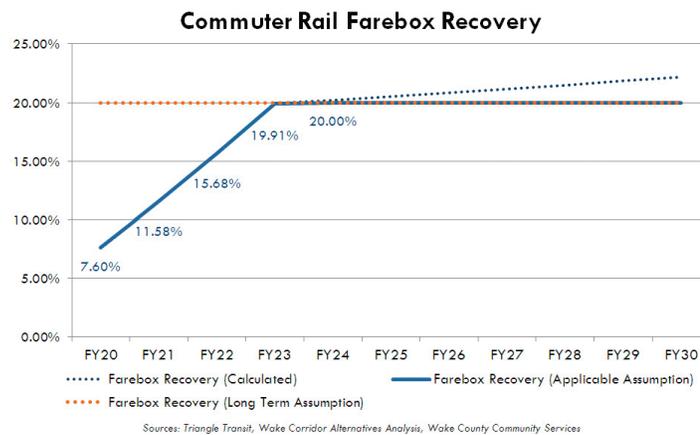
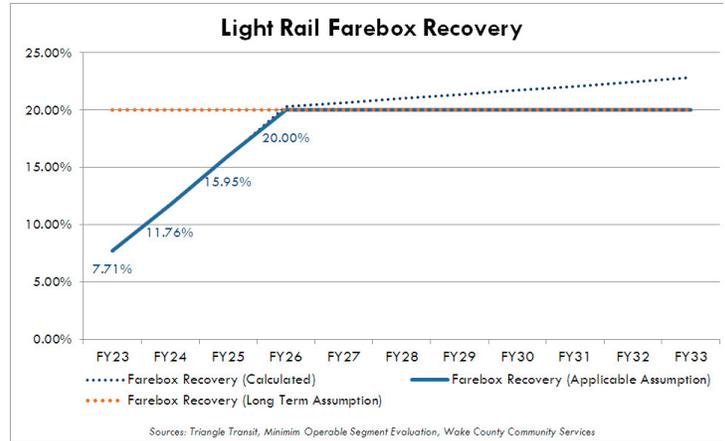


For ridership, the model estimates 40 percent of the targeted ridership will be present in the first fiscal year of operation for each individual bus route/service. Then, ridership will increase 20 percent annually until full targeted ridership is achieved over a four-year period.



In FY 2011, the average fare per one-way, or unlinked, trip in Wake County ranged from approximately 49 cents to \$1.20 depending on the service and/or service provider. For all Wake County unlinked trips, excluding the North Carolina State University Wolfline, the average fare per one-way trip was 62 cents. The Model assumes fares will increase over time, keeping pace with inflation and operating and maintenance expenses. In perspective, using this assumption, the average fare per unlinked trip is forecast to be approximately 70 cents in FY 2016, 81 cents in FY 2022, and 99 cents in FY 2030.

Light rail farebox recovery assumes that average fare will be similar to local bus service fares. Like commuter rail, there have been no decisions on actual light rail fares. Light rail farebox recovery is projected to be 7.7 percent in its first year (FY 2023) of operation, then increasing up to more than 20 percent annually.



### Federal and State Revenues

The Core and Enhanced Transit Plans assume federal and state funding will be available to significantly increase bus services (capital and operating). However, the models for each plan have a differing set of assumptions for rail.

The Core Transit Plan anticipates that 40 percent of bus service and infrastructure capital costs will be obtained through existing

federal programs (i.e., Federal Transit Administration 5309 Bus and Bus Facilities). The plan anticipates that the State of North Carolina will provide 25 percent of bus capital and 10 percent of recurring bus operating costs. For commuter rail services, the Core plan assumes that federal and state revenues may not be available. This assumption is not intended to imply that federal and state revenue funds will not be pursued. The intent is to demonstrate that regional investments in commuter rail services are possible if fully reliant on local revenues.

The Enhanced Transit Plan includes all components of the Core Transit Plan plus light rail service, assuming new federal and state funds are provided for commuter and light rail services. The plan anticipates that at least 50 percent of commuter and light rail capital costs will be provided through existing federal programs (i.e., New Starts/FTA 5309 grants). Rail capital assistance from the State of North Carolina is forecast at 25 percent for commuter and light rail services. For rail operating expenses, the Enhanced Plan assumes 10 percent of commuter rail operating costs will be acquired from state sources and no state funds are provided for light rail (similar to Charlotte’s existing light rail system).

The following table summarizes federal and state revenue assumptions for the Core Transit Plan and the Enhanced Transit Plan.

**Federal and State Revenue Assumptions**

	Core Transit Plan		Enhanced Transit Plan	
	Federal*	State	Federal	State
<b>Bus Service</b>				
Capital	40.0%	25.0%	40.0%	25.0%
Operating	–	10.0%	–	10.0%
<b>Commuter Rail Service</b>				
Capital	–	–	50.0%	25.0%
Operating	–	–	–	10.0%
<b>Light Rail Service</b>				
Capital	–	–	50.0%	25.0%
Operating	–	–	–	–

Note: Assumptions do not include federal formula funds.

Regarding federal revenue sources, both the Core and Enhanced Transit Plans include some form of federal assistance. Federal funds may be considered in two categories: formula-based funds, such as FTA 5307 and Fixed Guideway Modernization, and discretionary grant funds, such as FTA 5309 funds for bus and bus infrastructure and new start projects.

Formula-based funds are distributed based on actual expenses and service performance measures. Eligible use of funds includes capital costs and preventative maintenance, and FTA 5307 funds may be used for some operating expenses. The Core and Enhanced Transit Plans assume that any eligible federal funding sources that make sense for the region will be pursued. All formula-based FTA 5307 revenues begin two years after the first year of operation for each transit mode and increase annually based on service performance measures. The receipt of federal formula funds may begin as soon as FY 2017 for increased bus services, FY 2022 for commuter rail service and FY 2025 for light rail. Federal formula funds provided through the Fixed Guideway Modernization program (FTA 5309) begin approximately seven years after rail infrastructure is installed and may be available in FY 2025 for new commuter rail services and FY 2028 for light rail service.

Discretionary funds are used for bus and rail capital expenditures that include eligible projects such as new and/or replacement buses, bus facilities (i.e., transfer facilities, park-and-ride lots, maintenance facilities, bus shelters), new commuter and light rail service, rail service extensions, preventive maintenance and service-related equipment. The Core and Enhanced Transit Plans assume discretionary funds through capital funding percentages

identified in the above table. Discretionary allocations are based on a competitive process administered by the FTA.

**Transit Bonds**

The Wake County Transit Plan Financial Model assumes transit bonds will be required to maintain adequate resources for rail projects. The amount of transit bonds may vary depending on federal and state assistance for rail new-start projects and is projected to range from \$210 million to \$245 million in debt service issued between fiscal years 2017 and 2021. Triangle Transit will be the lead agency in acquiring and managing the debt service and will follow the processes established by the North Carolina Local Government Commission prior to issuing debt. Other assumptions that apply to transit bonds include an interest rate of 5 percent and 30-year terms for each issuance.

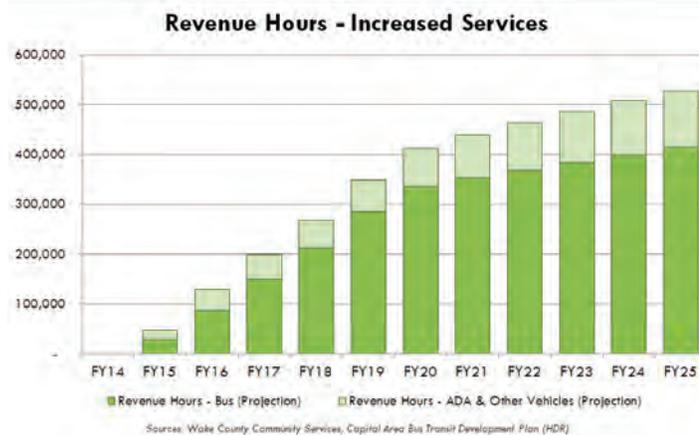
**Expenditure Assumptions**

Transit revenues described herein will be used to implement the Wake County Transit Plan. This includes expanded bus services and bus infrastructure (i.e., park-and-ride lots, street side facilities, dedicated lanes), rail services (commuter and light rail), and to repay transit bonds. A description of each service and assumptions are provided below.

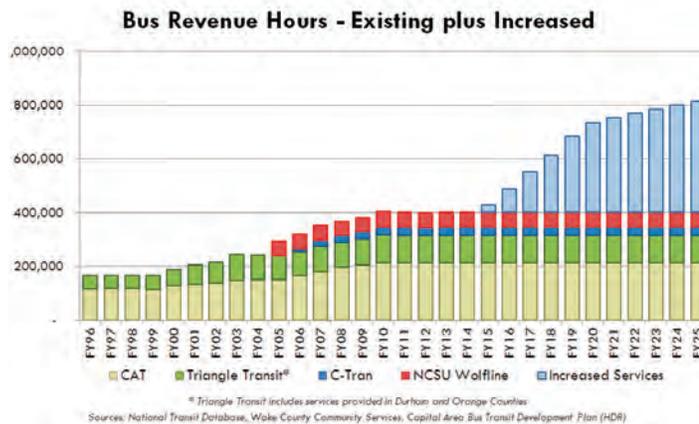
**Expand Bus Services and Infrastructure**

The Wake County Transit Plan Financial Model assumes investment in new and expanded bus services and infrastructure in both the Core and Enhanced Transit Plan. In the first five years,

the plan adds more than 320,000 bus revenue hours. In addition, paratransit activities (i.e., ADA) will add another 70,000 revenue hours through the operation of new paratransit vehicles and increasing the use of vehicles on hand. In total, increased bus and paratransit services are expected to generate more than 390,000 new revenue hours when fully operational in the first five years.



Based on information submitted to the National Transit Database, Capital Area Transit (CAT), C-Tran and Triangle Transit currently provide 345,000 revenue hours of bus service, and 401,000 revenue hours with the inclusion of North Carolina State University’s Wolfline. Increased services identified in the bus plan will add more than 320,000 revenue hours in the first five years to total approximately 665,000 hours. Note that Triangle Transit data includes bus services provided in Durham and Orange counties. If services provided in other counties were excluded, current revenue hours are approximately 350,000.



In the first five years, the Core and Enhanced Transit Plans will use \$284.8 million to increase the number of buses and ADA vans, and expand the network of bus facilities and infrastructure. Based on the “Capital Area Bus Transit Development Plan” prepared by HDR Engineering, the bus component adds 107 new peak service buses, 23 spare buses, 19 new peak ADA vehicles and five spare ADA vehicles in the first five years. Bus infrastructure and facilities are intended to improve service reliability and add to the passenger experience. Examples include bus shelters and signs, sidewalks leading to and from bus stops, transfer points and centers, park-and-ride lots, and others. Facilities are aligned with the new buses and proposed routes. The following table summarizes bus infrastructure improvements and more detail (such as some locations) is available in **Appendix A**

**New Bus Capital in First Five Years**  
(FY 2014 through FY 2018)

	Capital Costs
Buses	\$59,704,000
ADA Vehicles	1,488,000
<b>Subtotal, Vehicles</b>	<b>\$61,192,000</b>
Shelters, Benches, & Sidewalks	\$18,130,000
Transit Centers	53,970,000
Park & Ride Lots	33,320,000
Transfer Points	12,220,000
Urban Transit Corridors	18,931,000
Western Maintenance Facility	25,000,000
Professional Services (30 percent)	48,471,000
<b>Subtotal, Facilities</b>	<b>\$210,043,000</b>
Contingencies, Vehicles (5 percent)	3,060,000
Contingencies, Facilities (5 percent)	10,502,000
<b>Total</b>	<b>\$284,797,000</b>

Note: All dollars are in FY 2010, inflation assumptions are applied in the financial model.

A detailed breakdown of all vehicles is provided for more information on projected vehicle purchases.

Bus Purchases in First Five Years (FY 2014 through FY 2018)						
	Vehicles			Expenditures		
	Peak	Spares	Total	Cost Per Bus	Additional Costs per Bus*	Capital Costs
<b>Buses</b>						
40-foot Bus	41	9	50	\$400,000	\$25,800	\$21,290,000
40-foot Hybrid	5	1	6	600,000	25,800	3,754,800
30-foot Bus	33	7	40	330,000	25,800	14,232,000
Intercity Buses	28	6	34	575,000	25,800	20,427,200
Subtotal, Buses	107	23	130	—	—	\$59,704,000
<b>ADA &amp; Vanpools</b>	<b>19</b>	<b>5</b>	<b>24</b>	<b>\$62,000</b>	<b>—</b>	<b>\$1,488,000</b>
Subtotal, Vehicles	126	28	154	—	—	\$61,192,000
<b>Bus Contingency</b> (5.0 percent of all costs)				—	—	\$3,060,000
<b>Total</b>	<b>126</b>	<b>28</b>	<b>154</b>	<b>—</b>	<b>—</b>	<b>\$64,252,000</b>

Note: All dollars are in FY 2010, inflation assumptions are applied in the financial model.

Additional Costs per bus includes: \$18,000 for Automatic Vehicle Locating (AVL) devices, \$7,000 for Automatic Passenger Counters (APC), and \$800 for bike racks.

The bus component delays operating costs by 18 months to allow sufficient time to procure, outfit and implement new and expanded services. This assumption does not take into account potential opportunities, such as the use of existing fleet (spares) or private contracted services (similar to C-Tran's existing service), to expand services sooner with a new dedicated revenue source. When fully operational, the annual operating costs are projected to be \$27.4 million annually for bus services and \$1.3 million for demand response services.

All figures in the bus component section, including tables, are in FY 2010 dollars. Actual costs may increase based on the year of expenditure. The Model adjusts projected costs annually using common inflationary assumptions. Bus capital costs increase 3.5 percent annually and match capital assumptions Wake County currently uses for the Capital Improvement Plan (CIP). Operating costs increase 2.5 percent annually based on the 12-year average of the Consumer Price Index (Southern Urban).

### Operating Support for Existing Bus Services

The Core and Enhanced Transit Plans rely on funding for current bus services to remain largely in place even as costs increase due to inflation. To help current service providers address potential inflation, the Model sets aside 50 percent of the new County

Vehicle Registration revenues for future inflation expenses by the City of Raleigh, Town of Cary and Triangle Transit (proportional to the services provided within Wake County).

A portion of County vehicle registration revenues will also offset service costs for municipalities, other than Raleigh and Cary, which fund additional transit services by contracting through existing service providers. For example, the Town of Wake Forest contracts with the City of Raleigh to provide a circulator service within Wake Forest. Using a portion of the new County vehicle registration fee, the cost of this service will be provided by the Wake County Transit Plan, thus releasing Wake Forest from future year costs. Other municipalities that currently invest in additional transit are the towns of Knightdale, Wendell and Zebulon.

### Rail Service

The Core and Enhanced Transit Plans include some investment in new rail service. However, the plans differ based on federal and state revenue assumptions for initial rail start-up costs. Assuming federal and state revenue participation is not available, the Core Transit Plan includes only commuter rail. If there is federal and state participation for new start rail projects, the Enhanced Transit Plan includes commuter rail and the addition of light rail service.

For commuter rail, the Wake County Transit Plan Financial Model assumes an investment in rail service for the segment assigned to Wake County between southern Research Triangle Park and Greenfield Parkway in Garner. Rail projects assigned to Durham and Orange counties are not included in the Wake County Transit Plan or financial models. Capital and operating expense assumptions are based on the “Wake-Durham Corridor Alternatives Analysis” prepared by URS and available to the public through Triangle Transit.

Commuter rail is projected to cost a total of \$650 million, of which \$330 million is allocated to Wake County and the remaining \$320 million is to be funded by Durham County. The project is expected to begin in FY 2014 and extend over a six-year period. Operation of the commuter rail line is projected in the summer of 2019 (or FY 2020). Capital expenses include professional services, right-of-way and land acquisitions, bridges, siteway improvements, installation of track and stations, and commuter rail vehicles. The commuter capital plan also includes a total contingency and project reserve of 30.6 percent for identified capital projects.

**Commuter Rail Funding Schedule (FY 2014 through FY 2019)**

	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>Total</b>
Professional Services	\$5.5m	\$5.5m	\$5.9m	\$5.9m	\$11.3m	\$11.3m	\$45.4m
ROW & Land Acquisitions	–	–	\$7.4m	\$18.5m	\$11.1m	–	\$37.0m
Bridges, Siteways, & Special Conditions	–	–	\$17.6m	\$17.6m	–	–	\$35.1m
Tracks & Guideways	–	–	\$17.6m	\$35.3m	\$26.5m	\$8.8m	\$88.2m
Rail Vehicles	–	–	–	–	\$32.9m	\$14.1m	\$47.0m
Contingencies (30.6 percent)	\$1.7m	\$1.7m	\$14.9m	\$23.7m	\$25.1m	\$10.5m	\$77.4m
<b>TOTAL</b>	<b>\$7.1m</b>	<b>\$7.1m</b>	<b>\$63.4m</b>	<b>\$100.9m</b>	<b>\$106.8m</b>	<b>\$44.7m</b>	<b>\$330.0m</b>

*Note: All dollars are in FY 2011, inflation assumptions are applied in the financial model.*

*Rounding was used and may lead to minor discrepancies in totals.*

The annual cost of operating the entire commuter rail line is \$10.95 million, of which approximately \$7.5 million is assumed in the Wake County financial plan and the remaining \$3.45 million is to be funded by Durham County. Operating costs include commuter rail operators and dispatchers, vehicle maintenance, diesel fuel (propulsion), maintenance of tracks and right-of-ways, station maintenance, security and general administration.

Light rail service in Wake County will cost approximately \$1.11 billion. Also referred to as the Wake Corridor, the segment will be located entirely within Wake County beginning in downtown Cary, then continuing east by the North Carolina State Fairgrounds, the campus of North Carolina State University and downtown Raleigh before turning north and ending at Millbrook

Road. Capital and operating assumptions are based on the “Minimum Operable Segment Evaluation” prepared by URS and available to the public through Triangle Transit.

The project is expected to begin in FY 2014 and extend over a nine-year period. Operation of the light rail line is projected in the summer of 2022 (or FY 2023). Capital expenses include professional services, right-of-way and land acquisitions, bridges, siteway improvements, installation of track and stations, and commuter rail vehicles. The capital plan includes a total contingency and project reserve of more than 31 percent of anticipated costs. A breakdown of capital costs is provided in the following table.

**Light Rail Funding Schedule (FY 2014 through FY 2019)**

	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>FY20</b>	<b>FY21</b>	<b>FY22</b>	<b>Total</b>
Professional Services	\$7.8m	\$10.0m	\$22.5m	\$25.0m	\$25.0m	\$25.0m	\$25.0m	\$25.0m	\$25.0m	\$190.1m
ROW & Land Acquisitions	—	—	\$16.2m	\$40.5m	\$24.3m	—	—	—	—	\$80.8m
Bridges, Siteways, & Special Conditions	—	—	—	—	\$77.2m	\$77.2m	—	—	—	\$154.5m
Tracks & Guideways	—	—	—	—	—	\$72.6m	\$145.2m	\$108.9m	\$36.3m	\$363.1m
Rail Vehicles	—	—	—	—	\$6.0m	\$12.0m	\$24.0m	\$18.0m	—	\$60.0m
Contingencies (31.2%)	\$2.4m	\$3.1m	\$12.0m	\$20.4m	\$41.3m	\$58.2m	\$60.5m	\$47.3m	\$19.1m	\$264.3m
<b>TOTAL</b>	<b>\$10.2m</b>	<b>\$13.1m</b>	<b>\$50.7m</b>	<b>85.7m</b>	<b>173.7m</b>	<b>245.0m</b>	<b>\$254.7m</b>	<b>\$199.2m</b>	<b>\$80.4m</b>	<b>\$1,112.7m</b>

Note: All dollars are in FY 2011, inflation assumptions are applied in the financial model.

Rounding was used and may lead to minor discrepancies in totals.

The anticipated annual cost of light rail service is \$14.17 million. Operating costs include light rail operators and dispatchers, vehicle maintenance, electricity (propulsion), maintenance of tracks and right-of-ways, station maintenance, security and general administration.

The Wake County Transit Plan includes an additional \$13.1 million in local matching funds for potential grade separation (bridge) projects not identified in prior analyses. These funds are in addition to commuter and light rail project costs. During development of the “Alternatives Analysis,” Triangle Transit and URS evaluated all crossings to determine whether new grade separations were required, and included funds in the project estimates as needed. With the understanding that rail projects take a number of years to become operational and that development patterns are continuously changing, it may be necessary to add grade separations to maintain or improve traffic safety in the future. The plan does not identify specific grade separations and eligibility may be subject to guidelines developed by CAMPO. Local funds are not intended to provide 100 percent of the potential grade separation costs and will require other funding commitments. Funds are projected to be available in FY 2016 and 2017 to coincide with bridge projects in the commuter rail project.

**Grade Separation Local Matching Funds (FY 2014 through FY 2019)**

	<b>FY14</b>	<b>FY15</b>	<b>FY16</b>	<b>FY17</b>	<b>FY18</b>	<b>FY19</b>	<b>Total</b>
Bridges, Siteways, & Special Conditions	—	—	\$1.0m	\$9.0m	—	—	\$10.0m
Contingencies (30.6 percent)	—	—	\$0.3m	\$2.8m	—	—	\$3.1m
<b>TOTAL</b>	<b>—</b>	<b>—</b>	<b>\$1.3m</b>	<b>\$11.8m</b>	<b>—</b>	<b>—</b>	<b>\$13.1m</b>

Note: All dollars are in FY 2011, inflation assumptions are applied in the financial model.

Rounding was used and may lead to minor discrepancies in totals.

All figures in the rail component section, including tables, are in FY 2011 dollars. Actual costs may increase based on year of expenditure. The Model adjusts projected costs annually using common inflationary assumptions. Rail capital costs increase 3.5 percent annually and match capital assumptions Wake County currently uses for the Capital Improvement Plan (CIP). Operating costs increase 2.5 percent annually based on the 12-year average of the Consumer Price Index (Southern Urban).

**Bond Payments**

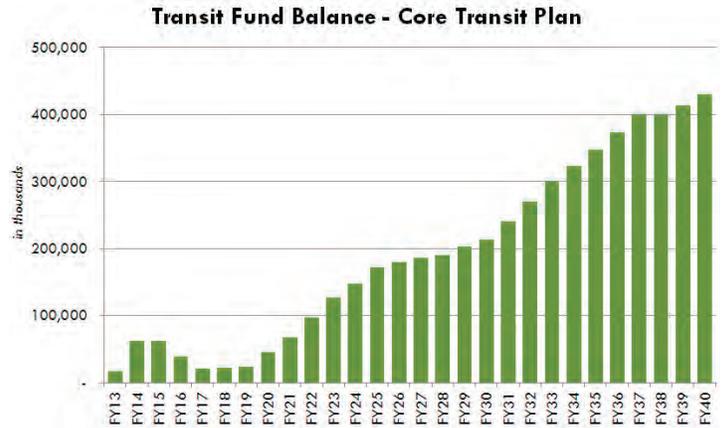
The Core Transit Plan and Enhanced Transit Plan each assume transit bonds will be required to maintain adequate resources to finance rail services. The amount of transit bonds is expected to vary based on federal and state participation in new start rail projects but is anticipated to range from \$210 million to \$245 million. Repayment of the bonds assumes an interest rate of 5 percent and 30-year terms. Other factors that may affect bond

repayments include the timing of debt issuance and frequency of payments (i.e., monthly, quarterly, semi-annual). Depending on a combination of various factors, debt service payments are expected to cost between \$13.5 million to \$15.8 million annually. Any debt service required for transit improvements identified in the Core and Enhanced Transit Plans will be issued by Triangle Transit.

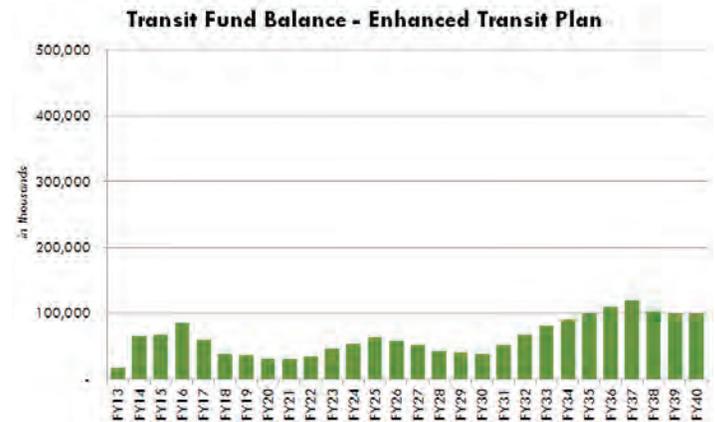
### Reserves/Fund Balance

Revenues generated by the ½-cent sales tax, vehicle registrations, vehicle rentals, farebox and bonds are dedicated to transit activities and may not be used for other government functions (non-transit activities). In fiscal years where revenues exceed expenditures, the additional revenues are placed in reserve or fund balance. In years in which expenditures are expected to outpace revenues, the transit plan will use reserves or fund balance. At a minimum, fund balance is expected to remain above zero when there is no outstanding debt service. After debt service is issued, minimum fund balance is expected to exceed one and quarter times (1.25x) the next year’s annual debt service payment.

For the Core Transit Plan, minimum fund balance exceeds the minimum thresholds and has an anticipated fund balance of \$430.4 million in FY 2040. The following graph illustrates the projected annual fund balance (or reserve) amounts.



The Enhanced Transit Plan also exceeds the minimum fund balance thresholds and has a projected fund balance of \$98.9 million in FY 2040. See the following graph for anticipated annual fund balance (or reserve) amounts.



The status quo alternative does not have a projected fund balance as each service provider (Raleigh, Cary and Triangle Transit) retains any additional revenues and may choose to fund additional expenditures as needed.



## INTERLOCAL AGREEMENTS

### Overview

The Wake County Transit Plan will be governed by Interlocal Agreements (ILA), one between the County and municipalities and the other between the County, Capital Area Metropolitan Planning Organization and Triangle Transit. The ILAs charge Triangle Transit with implementing the approved Wake County Transit Plan and assigns future plan updates and amendments to be approved by the Triangle Transit Board of Trustees, the Transportation Advisory Committee of the Capital Area Metropolitan Planning Organization and the Wake County Board of Commissioners.

By signing the County/Municipal ILA, municipalities acknowledge support for the plan and agreement with its details, including the funding sources to be considered, bus service expansion strategy, the local rail priorities, the process for plan updates and amendments, and the financial implementation plan.

### Transit Plan Updates & Amendments

Once the Transit Plan is adopted, it will undergo updates and likely amendments in future years as warranted to take into account any changes in demographics, finances or new technology developments. Provisions for consideration and adoption of future updates and amendments to the Wake County Transit Plan are as follows:

1. All updates and amendments to the Wake County Transit Plan shall be approved by the Triangle Transit Board of Trustees, the Transportation Advisory Committee of the Capital Area Metropolitan Planning Organization and the Wake County Board of Commissioners.
2. Recommendations for updates and amendments to the Wake County Transit Plan can be initiated by the Triangle Transit

Board of Trustees, the Transportation Advisory Committee of the Capital Area Metropolitan Planning Organization and the Wake County Board of Commissioners.

3. Triangle Transit and other service providers will report annually on the status of implementing the Wake County Transit Plan.
4. The Wake County Transit Plan shall be reviewed and updated no less than every four years.
5. Other effects, including but not limited to municipal input, public input, federal or state funding responses and the status of capital project implementation, may require an update or amendment to the plan.

### Continuance of Local Funding

The State Legislation allowing the half-cent sales tax requires that the new funds do not replace existing local funds spent on transit. To meet this requirement the plan and the parties of the related interlocal agreement agree to produce an annual report documenting the amount of local money spent on transit.

### Transit Service Evaluation

Strategies will be in place to ensure that provided transit services are safe, reliable and efficient. At a minimum, transit services will be evaluated annually. These periodic evaluations will be a collaborative and cooperative process between the jurisdictions receiving transit service and the transit service providers with a goal of making services successful. The evaluation process will use transit service performance standard guidelines and ridership trend data compiled by transit professionals to determine whether any changes to transit services are warranted.